

Business Research Methods

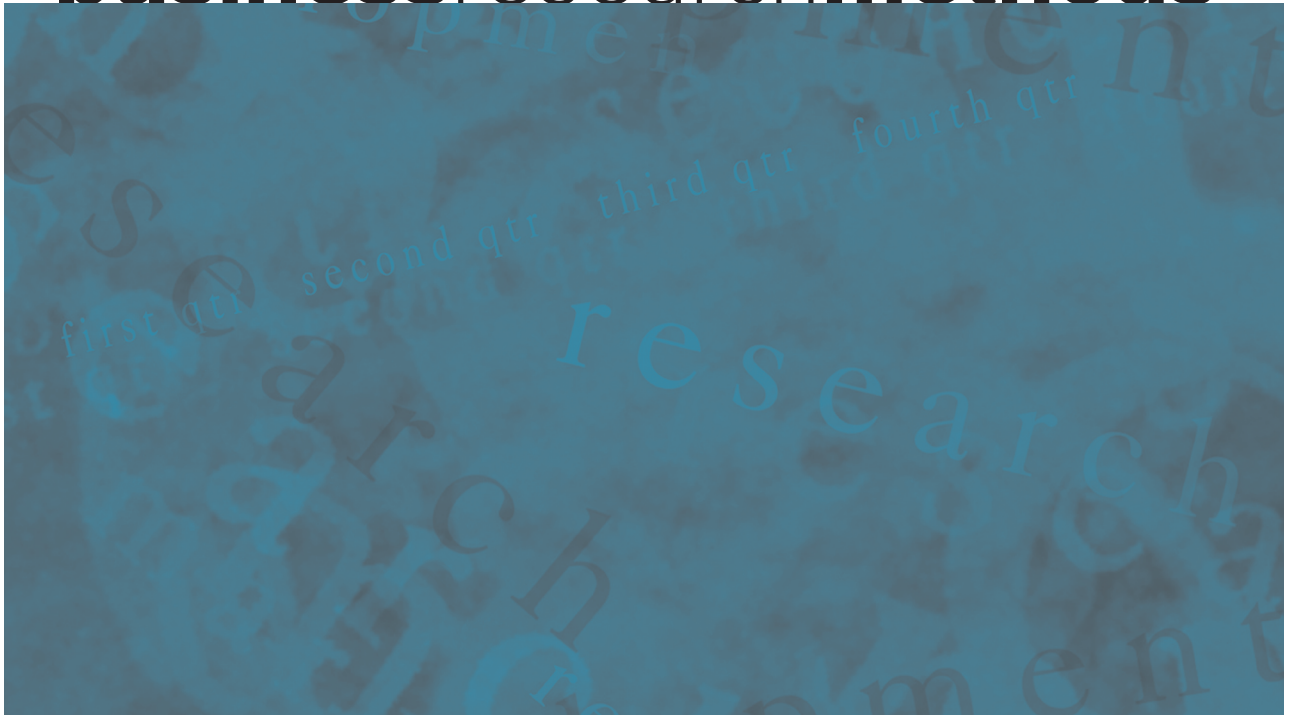
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Pamela S. Schindler

> **business** research **methods**



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> **business** research **methods**

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To my soulmate and husband, Bill, for his sound counsel and unwavering support.

Pamela S. Schindler

Walkthrough

Addressing a Revolution in Student Learning.

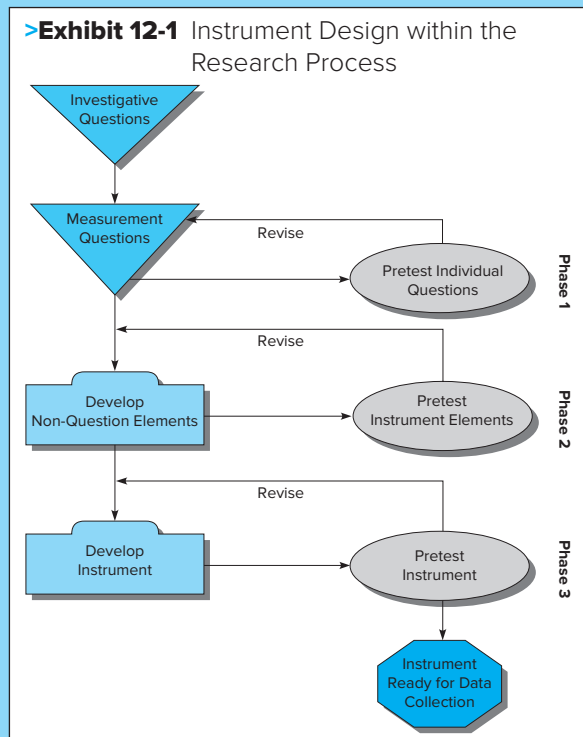
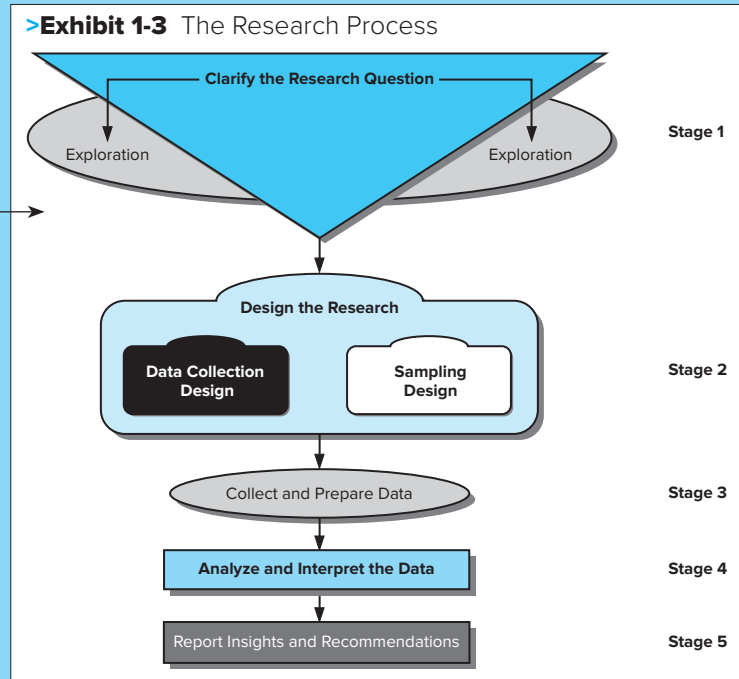
A transformation is taking place in many of our classrooms. During the last decade, more and more of our students have transformed to visual—from verbal—learners. Visual learners need pictures, diagrams, and graphs to clarify and reinforce what the text relates.

Integrated research process exhibits reveal a rich and complex process in a visual way.

31 fully integrated research process exhibits link concepts within stand alone chapters.

Each exhibit in this series shares symbols, shapes, and colors with others in the series. Exhibit 1-3 is the overview exhibit of the research process.

Subsequent exhibits (like this one for measurement instrument development) show more detail in a part of this process.



Responsive to industry changes.

Understand what is happening behind the scenes during a project.

Research reports are increasingly oral and all about storytelling.

Clean data is critical to effective analysis.

All researchers need qualitative skills.

The research question is the basis of effective research.

You can't learn research without understanding the fundamentals.

>chapter 17

An Integrated Example

"I approach each project with a new insecurity, almost like the first project I ever did. And I get the sweats. I go in and start working; I'm not sure where I'm going. If I knew where I was going, I wouldn't do it."

>chapter 16

Stage 5: Research Reports: Supported Insights and Recommendations

"If you're navigating a dense information jungle, coming across a beautiful graphic or lovely data visualization is a relief. It's like coming across a clearing in the jungle."

David McCandless,
British data journalist

>chapter 13

Stage 3: Collect, Prepare, and Examine Data

"A well-crafted, thoughtful visualization makes the light bulb go off. You just don't get that with a spreadsheet."

Dana Zuber,
associate director of analytics Butler, Shomo, Stern &
Partners Dana Zuber

>chapter 6

Stage 2: Data Collection Design: Qualitative Research

"The only way to capture a deeply personal insight, which will help you evoke that emotion in consumers, is through qualitative."

Gia Cahoun,
global insights manager
Burr's Bees

>chapter 3

Stage 1: Clarify the Research Question

"A beautiful question is an ambitious yet actionable question that can begin to shift the way we perceive or think about something—and that might serve as a catalyst to

>chapter 1

Research Foundations and Fundamentals

"As big data increases, we see a parallel growth in the need for 'small data' to answer the questions it raises."

William C. Pink,
senior partner
Creative Analytics

>learning objectives

After reading this chapter, you should understand ...

- LO1-1 How business research and data analytics complement each other.
- LO1-2 The language of professional researchers.

Internet Brings Prediction Research into 21st Century

Managers often must make decisions about the future. These decisions offer high uncertainty. Research is designed to reduce the risk, but simply asking people to predict their own behavior, attitude, or reaction hasn't worked well; we are notoriously poor at the task. For example, in 1985 when individuals were asked to predict their acceptance of Coke's planned reformulation, they predicted incredibly wrong and it cost Coca-Cola millions.

Historically, researchers have used the consensus prediction of experts (Delphi technique) to correct for the individual's poor predictive capabilities. However, not all situations offer a logical panel of experts. James Surowiecki, in his *The Wisdom of Crowds*, describes how a group of diverse individuals is able to make decisions and predictions better than isolated individuals or experts. MIT researchers explain that people's heightened connectivity due to the Internet has brought about the "emergence of surprising new forms of collective intelligence." As social animals, people are getting good at noticing what others are doing, sensing why they might be doing it, and predicting what they will do. In a PEW Research study, collectively Americans predicted 37 percent of Americans were obese, a fairly good predictor of the actual 31 percent who were so diagnosed.

Marcus Thomas (MT) needed a research method that was fast and that would overcome client skepticism about the inaccuracy of self-reported anticipated versus actual behaviors for its financial client. It chose to use a prediction market. "A prediction market is like an online stock investing game," explained Jennifer Hirt-Marchand, associate partner and strategic insights executive for MT. "Traders invest virtual dollars in ideas, products, assets, etc. to be tested. Based on the investments they make, traders can win greater incentives if they invest in the winning idea than an incentive they might earn by completing a survey alone. This 'skin in the game' is a critical component of the methodology, as it fosters engagement and thoughtfulness on the part of the traders. Its strength is that it doesn't rely on asking individuals to make predictions about what they would do in the future but rather what they think other people would do."

Using the services of a sample provider, an online survey was sent to general population panelists. Likely participants self-identified based on having an understanding of finance with regard to estate planning, personal finances and investing, vacation planning, health care, etc. A thousand participants, known as traders, were recruited from this group. While panel participants are compensated by the sample company for their regular participation in research projects, panelists selected for this project could earn additional compensation based on the accuracy



© iStockphoto/Getty Images

of their predictions. Those payouts would be determined by the number of traders who invested in the "winning" group, as well as the amount each trader invested in that group.

Through a continuation of the online survey, the selected traders were first presented a written description of the new financial service (each had previously agreed to a nondisclosure agreement, as the product was in development). Then each was provided six consumer profiles (called vignettes) one at a time. Each vignette—developed based on consumer segmentation from prior research and extensive secondary research—represented a possible purchaser group. It included a narrative, describing the group as people, along with photographs bringing each group to life. Traders were each given \$1000 in virtual money to invest in one or more vignette groups—the ones they thought would be most likely to purchase the new financial service. In addition, through open-ended questions, each trader was asked to explain the reasons why they believed each vignette group would or would not purchase.

Using this methodology, Marcus Thomas identified three segments based on the best response patterns. The one that seemed unlikely at the time was the one that represented the product line failed to rank high. The research provided messaging insights to reach the target audience.

Some of the world's leading companies rely on Cleveland-based research to refine their brands and drive their products and services.

www.marcusthomasllc.com

Rich with examples, this edition is a collaboration with dozens of researchers.

Snapshots are research examples from the researcher's perspective.



If a topic deals with a sensitive subject, researchers may start the topic with **buffer questions**, designed to build rapport and put the participant at ease. These are broad, neutral questions on the topic that don't require a participant to take a stand on the sensitive issue. For example, "In the last 30 days, have you personally used a streaming service to watch a movie?" before asking "Should anyone be able to access movies with graphic sexual content with streaming services?" In tests, sensitive questions that followed buffer questions have been shown to extract markedly different responses compared with when participants are directly asked a sensitive question without buffers.³

Facilitate Topic and Measurement Question Sequencing

The design of measurement instruments is influenced by the need to relate each question to the others in the instrument. Often, the content of one question (called a **branched question**) assumes other questions have been asked and answered in a certain way. In computer-based instruments or computer-assisted instruments, such branching is handled by internal coding of the initial question. The PicProfile indicates a typical branch question; it reveals the elimination of alternatives not chosen in one question when asking the second question, thus shortening the participant's time.

Instructions also are a primary tool to facilitate sequencing. Three types of sequencing result in **skip directions**. These instructions indicate where the participant or interviewer should go within the instrument—a question, topic or section—given one or a series of responses. These instructions can be embedded in the instrument (paper or computer-based) or provided to the interviewer. Computer-based instruments and computer-assisted interviewing make skipping fairly easy; once a pre-programmed response is entered, the computer automatically skips the participant ahead. The first type is a question-to-question skip; a question screens for experience or knowledge, and the participant is judged unable to answer the next question without it.

Example: In the last two weeks, have you used (product)? Yes No (If No, skip to Q3)

PicProfiles use a visual cue to enhance the concept or key term.

2. Which of the following attributes do you like about the automobile you just saw? (Select all that apply)

- Overall appeal
- Headroom
- Design
- Color
- Height from the ground
- Other
- None of the above

Next Question

3. For those items that you selected, how important is each? (Provide one answer for each attribute)

	Extremely important	Neither important nor unimportant	Not at all important	Don't know
a) Overall appeal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) Height from the ground	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c) Headroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

One of the attractions of using a web survey is the ease with which participants follow branching questions immediately customized to their response patterns. In this survey, participants were shown several pictures of a prototype vehicle. Those who responded to question 2 by selecting one or more of the attributes in the checklist question were sequenced to a version of question 3 that related only to their particular responses to question 2. Note also that in question 3 the researcher chose not to force an answer, allowing the participant to indicate he or she had no opinion ("Don't know") on the issue of level of importance.

A Closeup offers a more in-depth example.

>closeup

Who's Really Taking Your Surveys?

Early in panel development, panelists were offered \$100 to \$150 to join and participate in qualitative studies. Historically, these participants participated in longer engagements (online qualitative, ethnography studies or face to face in-depth interviews). As random digit dialing became less productive for recruiting respondents and the Internet became more widely used, researchers started using panels—also called communities—to recruit participants for quantitative research. Quantitative respondents who are engaged for much shorter periods are more likely to be paid \$1 to \$10 per survey completed.


The professional respondent—one who takes repeated surveys—was once considered a detriment to quality research. “As researchers,” explained Jessica Broome, PhD, principal of Jessica Broome Research, “we wanted to keep the ‘cheaters’ and ‘repeaters’ out of our studies, believing they biased results.” As decision cycles shorten, the demand for better and more timely information means attracting and retaining qualified participants. During the last three decades, increasingly this means researchers turn to panels, and by design, these participants are asked to participate in numerous studies.

“We wanted to know ‘Who are these people willing to take repeated surveys?’” explained Broome. “And given that some surveys are overly long and others poorly designed, ‘Why do they do this?’” Broome learned with Kerry Hecht, Director of Research Services, Recollective, a division of Ramius Corporation, to find out what motivates panel respondents and if their motivations are likely to reduce the quality of the information they provide.

The Qualitative Study

Broome and Hecht designed a multistage study that drew participants from multiple panel providers, including Critical Mix, Schlesinger Associates, and Swagbucks. “We started with a 5-day online qualitative community study with 20 people to explore what got them started as a survey panelist and what kept them going,” explained Hecht. “While money is a motivator in keeping panelists engaged, they also shared the influences of intrinsic motivators like fun, feeling useful, contributing to important decisions, and participation being more interesting than time spent on social media.”

For any particular study, panelists are often screened exclusively on demographics. “Because participants derive intrinsic benefits, panelists will sometimes judge on screening information in an attempt to be included in a study,” shared Broome. When a panelist doesn’t meet the desired demographic parameters, they are told “You don’t qualify” but are rarely told why. “But once they are included,” explained Broome, “participants



claim honesty drives their responses; they think lying on survey questions would undermine the study.”

“Often panelists expressed feeling abused, misled, and disrespected. For example, when they are told about survey length, they often felt deceived when a promised 15-minute survey took 45 minutes, or when the survey was not only long, but boring,” explained Broome. Interestingly, panelists in quantitative studies are tech-savvy. “They understand what current technology should permit a survey company to do—like eliminate the need to ask demographic questions repeatedly in the same survey process or use earlier answers to filter later questions,” claimed Hecht. “They basically think researchers can make the experience so much better.” “The research industry needs their insights, but can treat panelists with disdain,” claimed Broome.

The Quantitative Study

Broome and Hecht followed their qualitative exploration study with Phase 2, a mobile-optimized quantitative study of 1499 participants, also drawn from various panel providers and fielded by Propeller Insights. Each panelist took a topical survey that included a VARK assessment. VARK assesses visual, aural/ audio, read/write, and kinesthetic learning preferences through a series of learning scenario questions. Creativity was assessed through a battery of 38 statements requiring agreement or disagreement, as well as a checklist of 54 descriptors. “We discovered that participants didn’t favor any one of the learning approaches, nor were they outliers on the creativity assessment,” shared Broome.

>closeup cont’d

powerful motivator.” Many also cited meeting interesting people and hearing different viewpoints as motivation. “They also love learning the results of studies they participate in and understanding why we as researchers do what we do or ask what we ask,” shared Broome.

Recently, a SurveyMonkey study also found panelists gave thoughtful, consistent answers over time. It released results of a 1,000-person international panel assessment study, using three surveys with the same respondents, one in each of three sequential months, which checked for quality-reducing behaviors like straight lining (repeatedly choosing the same answer choice in matrix questions), poor open response validity (responding with nonhelpful, gibberish answers), and whether they were unfocused or not paying attention. Of the panelists, 97 percent, 97 percent, and 94 percent or more passed each of these tests, respectively, with no difference between men and women. And in terms of response reliability, over the three waves of surveys, in 23 indicators SurveyMonkey tracked, only three items showed significantly significant change among U.S. participants: time-to-complete, choice of the “other” response, and attitude about “moral acceptability of alcohol use.”

Sources: jessicabroome.com; recollective.com; surveymonkey.com

a particular software training strategy, we infer that others will also. The basic idea of taking a sample is that by selecting some cases in a population, we may draw conclusions about the entire target population.

There are several compelling reasons for using a **sample** (a subset of the target population) rather than a **census** (all cases within a population), including (1) lower cost, (2) greater speed of data collection, (3) availability of population cases, and (4) greater accuracy of results. The advantages of taking a sample over census are less compelling when two conditions exist: (1) a census is feasible due to a small target population and (2) a census is necessary when the cases are quite different from each other. When the population is small and variable, any sample we draw may not be representative of the population from which it is drawn. The resulting values we calculate from the sample are incorrect estimates of the population values.

>chapter 2 The Research Process: An Overview


promotions, training experiences, project assignments, project leadership, new customers captured, and so on. Sophisticated businesses track these KPIs through digitized, perpetually maintained dashboards—a data visualization tool that shows current and a period of prior status on each metric, usually on one screen. Even small businesses can dashboard KPIs create with the software tools available.

Identifying opportunity-based management dilemmas is more time consuming and difficult. It requires monitoring obscure developments in a variety of industries, as well as emerging trends in your own industry. Those companies looking for opportunities are trying to be first movers; they want to capitalize on an environmental trend that others haven’t recognized. Jeff Bezos, chief executive officer (CEO) of Amazon, is always seeking these kinds of dilemmas: customers getting frustrated at not finding the solutions they sought at stores, companies needing a more reliable delivery option, readers wanting to take more books with them when they travel than luggage space permits, etc. The search for opportunity-based management dilemmas is full of risk, but when the approach pays off, it often pays big.

However, choosing one dilemma on which to focus may be difficult. Solving different dilemmas offers different rewards. One approach is to estimate the payoff of solving a dilemma, using this value to prioritize. This is more easily done for problems (e.g., estimating the cost of reducing customer returns) than for opportunities. Ultimately, to choose incorrectly puts a company or business on an unproductive path. As a manager, only practice makes you proficient at this task. For new managers, or for established managers facing new responsibilities, developing several management dilemma-to-research question hierarchies, each starting with a different dilemma, will assist in the choice process. To develop these, much exploratory research is used, tapping into published secondary sources and mining company data.

Exploration

Seeking existing information is often used not only to identify dilemmas (e.g., identify industry standard to compare to company performance), but also to ask the right questions and better understand decision options. Historic company data are increasingly being used in exploration as better tools to tap into digital data warehouses have become available.¹ Much of this information may not be in searchable databases; it may be in written reports, where accessibility is an issue. At this stage, it always pays the



We are attracted to experiments at an early age due to our unlimited curiosity. A great researcher fosters curiosity as an important skill.

Images are worth more than 1,000 words; they serve as visual cues to anchor concepts in memory.

Using learning aids to cement concepts.

Discussion questions tie to learning objectives and come in four types.

Relating questions to newsworthy businesses makes them more relevant to students.

>discussion questions

Terms in Review

- 1 How does qualitative research differ from quantitative research?
- 2 What is data saturation, and how does it influence qualitative research?
- 3 What is the nature of data collected in qualitative research?
- 4 Why do senior executives feel more comfortable relying on quantitative data than qualitative data? How might a qualitative research company lessen the senior-level executive's skepticism?
- 5 Distinguish among structured, semistructured, and unstructured interviews.

Making Research Decisions

- 6 Assume you are a manufacturer of small kitchen electrics, like Hamilton Beach/Proctor Silex, and you want to determine if some innovative designs with unusual shapes and colors developed for the European market could be successfully marketed in the U.S. market. What qualitative research would you recommend, and why?
- 7 NCR Corporation, known as a world leader in ATMs, point-of-sale (POS) retail checkout scanners, and check-in kiosks at airports, announced in June 2009 that it would move its world headquarters from Dayton (OH) to Duluth (GA), a suburb of Atlanta, after more than 125 years. An employer of 1,200 mostly high-salaried, professional workers in Dayton, NCR was enticed to move by Georgia's offer of more than \$56.9 million in tax credits; its fast-growing, educated 25- to 34-year-old population cohort; international offices for 10 European state governments; and the busiest international airport (Atlanta) in the world.

- a. What qualitative research might NCR have done to reach this decision?
- b. NCR will use its move to Georgia to downsize its world headquarters workforce. What qualitative research could help NCR determine which of its 1,200 employees will be offered positions in Duluth?

From Concept to Practice

- 8 Use Exhibit 6-6 to develop the recruitment screener for the research you described in your answer to question 5.
- 9 Conduct a focus group among students in your class on one of the following topics:
 - a. The department's problems offering requirements and electives essential for meeting your graduation expectations.
 - b. Entertainment sponsored by your university to bring the community on campus.

From the Headlines

- 10 Lately, airlines have been having a rough time, in terms of legal actions and PR issues, with consumers openly expressing outrage at being bumped from—or forcibly removed from—flights. Design a qualitative study to reveal the suppressed (as opposed to surface) issues that are contributing to this rage.
 - a. What are some of the surface issues?
 - b. Who will you want to participate and how will you recruit them?
 - c. What qualitative method(s) will you choose. Be specific about any exercises you will incorporate.

>key terms

3-D graph 456	facts 446	pictograph 456
actionable insights 434	findings nondisclosure 461	pie graph 451
analogy 447	geograph 456	predispositions 438
anchoring bias 438	graph 450	report framework 443
area graph 451	infographic 459	report structure 439
audience analysis 437	information 434	right to quality 460
audience-centric planning 436	insight 434	scope 441
auditory learners 445	jargon 458	statistics 446
bar graph 454	kinesthetic learners 445	story 447
confirmation bias 438	language level 458	survivorship bias 438
conformity bias 438	limitations 442	table 449
data 434	line graph 451	technical report 440

Key terms are a valuable refresher, in each chapter and in the glossary.

>glossary

3-D graphic a presentation technique that permits a graphical comparison of three or more variables; types include column, ribbon, wireframe, and surface line.

a priori contrasts a special class of tests used in conjunction with the *F* test that is specifically designed to test the hypotheses of the experiment or study (in comparison to post hoc or unplanned tests).

acquiescence bias a tendency for participants to agree with an item or statement within a measurement question that asks for levels of agreement/disagreement; occurs when they have less knowledge on a topic; more a problem for less educated or less informed participants.

action research a methodology with brainstorming followed by sequential trial-and-error to discover the most effective solution to a problem; succeeding solutions are tried until the desired results are achieved; used with complex problems about which little is known.

actionable insights insights aligned with key business goals and strategic initiatives that are novel, unusual, or unexpected and that lead to recommendations for specific decisions.

administrative question a measurement question that identifies the participant, interviewer, interview location, and conditions; generates nominal data.

after-only design preexperimental design that takes one measurement of DV after manipulation of the IV.

alternative hypothesis (*H_a*) an assumption that a difference exists between the sample parameter and the population statistic to which it is compared; the logical opposite of the null

attitude a learned, stable predisposition to respond to oneself, other persons, objects, or issues in a consistently favorable or unfavorable way.

attitude scaling process of assessing a person's disposition (from extremely favorable disposition to an extremely unfavorable one) toward an *object* or its *properties* using a number that represents a person's score on an attitudinal continuum range.

audience analysis an analysis of the expected audience for a research report.

audience-centric planning a research report orientation whose focus is on gaining the audience's embrace of data insights and recommendations; the resulting presentation is persuasive and tells a story employing statistics.

auditory learners audience members who learn through listening; represent about 20 to 30 percent of the audience; implies the need to include stories and examples in research presentations.

authority figure a projective technique (imagination exercise) in which participants are asked to imagine that the brand or product is an authority figure and to describe the attributes of the figure.

automatic interaction detection (AID) a data partitioning procedure that searches up to 300 variables for the single best predictor of a dependent variable.

balanced rating scale has an equal number of categories above and below the midpoint or an equal number of favorable/unfavorable response choices.

ony/expert opinion 447
58
ze 444
learners 445
pace 457

Glossary reinforces the language of research.

Summated Rating Questions

The **Likert scale**, developed by Rensis Likert (pronounced Lick-ert), is the most frequently used variation of the summated rating question. Questions based on **summated rating scales** consist of statements that express either a favorable or an unfavorable attitude toward the object of interest. The participant is asked to agree or disagree with each statement. Each response is given a numerical score to reflect its degree of attitudinal favorableness, and the scores may be summed to measure the participant's overall attitude. Summation is *not* necessary and in some instances may actually be misleading, as our caution below clearly shows.

In Exhibit 11-8, the participant chooses one of five levels of agreement. This is the traditional Likert scale because it meets Likert's rules for construction and testing. The numbers indicate the value to be assigned to each possible answer, with 1 the least favorable impression of Internet superiority and 5 the most favorable. Likert scales may also use 7 and 9 scale points. Technically, such question is a Likert-type question as its construction is less rigorous than the process Likert created. However, the advantages of the 7- and 9-point scales are a better approximation of a normal response curve and extraction of more variability among respondents.

Conscientious researchers are careful that each item meets an empirical test for discriminating ability between favorable and unfavorable attitudes. Originally, creating a Likert scale involved a procedure known as *item analysis*. Exhibit 11-9 provides the steps for selecting Likert statements (items) for the scale using item analysis. The values for each choice are normally not part of the measurement instrument, but they are shown in Exhibit 11-10 to illustrate the scoring system.

Exhibit 11-9 How to Perform an Likert Item Analysis

Item analysis assesses each item (statement) in a Likert scale based on how well it discriminates between those people whose total score is high and those whose total score is low.

- Step 1** Collect a large number of statements that meet the following criteria
 - Each statement is relevant to the attitude being studied.
 - Each statement reflects a favorable or unfavorable position on that attitude.
- Step 2** Select people similar to study participants (participant stand-ins) to read each statement.
- Step 3** Participant stand-ins indicate their level of their agreement with each statement, using a 5-point scale. A scale value of 1 indicates a strongly unfavorable attitude (strongly disagree). A value of 5 indicates a strongly favorable attitude (strongly agree). The other intersperses (2 (disagree), 3 (neither agree nor disagree), 4 (agree)) are mid-range attitudes (see Exhibit 11-3).
 - To ensure consistent results, the assigned numerical values are reversed if the statement is worded negatively. The number 1 is always strongly unfavorable and 5 is always strongly favorable.
- Step 4** Add each participant stand-in's responses to secure a total score.
- Step 5** Array these total scores from highest to lowest; then select some portion—generally defined as the top and bottom 10 to 25 percent of the distribution—to represent the highest and lowest total scores.
 - The two extreme groups represent people with the most favorable and least favorable attitudes toward the attitude being studied. These extremes are the two criterion groups by which individual Likert statements (items) are evaluated.
 - Discard the middle group's scores (50 to 80 percent of participant stand-ins), as they are not highly discriminatory on the attitude.
- Step 6** Calculate the mean scores for each scale item among the low scorers and high scorers.
- Step 7** Test the mean scores for statistical significance by computing a *t* value for each statement.
- Step 8** Rank order the statements by their *t* values from highest to lowest.
- Step 9** Select 20-25 statements (items) with the highest *t* values (statistically significant difference between mean scores) to include in the final Likert scale.

Researchers have found that a larger number of items for each attitude object improves the reliability of the Likert scale. As an approximate indicator of a statement's discrimination power, one authority suggests using only those statements whose *t* value is 1.75 or greater; provided there are 25 or more participant stand-ins in each group. See Exhibit 11-5 for an example.

Source: Allan L. Edwards, *Techniques of Attitude Scale Construction* (New York: Appleton-Century-Crofts, 1957), pp. 152M-74.

“How-to” exhibits and Appendices help students DO research.



Observation Environment

Observation studies can be designed for the field or laboratory. In business research, field studies may take place at a customer's home, the shopping environment, an employee work area (plant, office, distribution center), a supplier's location, and more. Field studies, offering a natural setting, are most likely to obtain unaltered behavior, especially when the observer isn't directly involved.

Laboratory studies are most likely to provide data protection. When specialized equipment is needed for observation (e.g., eye-tracking cameras, heart rate monitors, galvanic skin response machines, etc.) laboratory settings are often the choice. We've had some success with employing eye-tracking via a subject's laptop and tablet cameras. Laboratory settings are obviously more expensive, usually involve smaller sample sizes, and pose more difficulties in recruiting subjects. Laboratory observations can be part of an experimental design.



Observation and Police Cameras

If you read or watch the news, you'll know that urban areas have had a sharp increase in questionable—if not questionable—police actions with regard to excessive use of force, and bystander videos have played an increasing role in judging police actions. In 2015, the U.S. Supreme Court, in *Graham v. Connor*, held that an officer's actions, however, “must be judged from the perspective of a reasonable officer on the scene, rather than with the 20/20 vision of hindsight.” In an article in *The Atlantic*, Seth W. Stoughton, a law professor and former police officer, and Geoffrey Alpert, a professor of criminology, both at the University of South Carolina, along with Jeff Noble, a police consultant based in Orange County, California, write, “The inversion to what officers desistively refer to as, “second-guessing” . . . [makes] officers less receptive to a critique of their actions . . . [and] makes them reluctant to provide their own complete and honest critiques.” Yet nationwide, we've seen a demand for police to change and for police decisions to be more transparent, resulting in a clamoring for use of police body and cruiser cameras.

Do you believe you get a true picture of an incident when you see a body-mounted or dash-mounted video? Stoughton, who also consults with law enforcement agencies, has choreographed a series of videos to demonstrate the answer to this question. His use parallels an observation study based on respondents watching video footage of mock police incidents. Using a series of chest-mounted or dash-mounted cameras and bystander videos, he shows just how difficult it is to arrive at an accurate conclusion when using only a police cruiser or body cam video.

Chest-mounted cameras during interactions or pursuits often create jerky movements and wildly distorted images. Stoughton calls this “deceptive intensity,” it creates the impression that the officer is under attack when he might not be. In an interception incident video, using a dash-mounted camera involving a fleeing suspect and Taser use by an officer, accuracy is related to vantage point. The body camera doesn't reveal the use of a Taser or the absence of a gun, while video shot by a bystander does. “When video allows us to look through someone's eyes, we



©Aarna Roth Photography

tend to adopt an interpretation that favors that person,” explains Stoughton, a psychological phenomenon known as “camera perspective bias.” Stoughton's research also reveals that the degree to which the viewer trusts or distrusts the police influences his or her video interpretation. So while the bystander might not know any facts leading up to the incident, his or her camera has its own bias. He concludes, video evidence interpretation depends, therefore, on perspective as well as bias.

So in observation research, should we consider the camera as an accurate, unbiased observer? See for yourself. [Check out the videos on Connect.](#)

Connect resources enrich and engage.

Cases, video, sample projects, templates, appendices, and more.

It's serious business to revise a book that has been a world-wide leading text for more than three decades, one that's published in eight international editions and is published in eight languages. The process of text writing and the speed with which revisions are developed don't often permit a complete overhaul. But for this edition, given major changes in how students and professors use text material and how professors are teaching, as well as major changes in the research industry, a fresh approach was necessary. To address major industry changes and both professor and student needs, my McGraw-Hill team and I came up with a process and plan to deliver what students are seeking while giving professors what they need. The approach involved the following:

- Reflect changes in student learning and teacher pedagogy:
 - Separate
 - Streamline and simplify
 - Clarify
- Reflect the current state of the research industry:
 - Rethink everything
 - Collaborate

Reflect Educational Changes

A deep dive into educational articles, as well as comments from our reviewers and numerous teaching colleagues and students, present a picture of some major changes in student learning and professors' use of textbooks.

- An increasing percentage of students don't buy books; some professors don't require this of them based on the way text material is or is not used in the course.
- Students often enter classrooms without a foundation for that day's discussion or activities.
- Professors see students disengaging from important tasks of the learning process: self-preparation and self-learning.
- Some professors—even educational institutions—are choosing to craft their own books, drawing only those chapters from one or multiple textbooks that are critical for their instructional approach.
- Customized books omit topics and tools deemed unnecessary for a given course based on its number of credit hours or the chosen pedagogy. Students revealed that omitted material often leaves them with voids affecting their understanding.

- Professors want chapters that stand alone, so they may order chapters however they choose to teach the material.
- Many professors want chapters to focus on the essential material of the topic of each chapter, not have that material spread intermittently throughout the book.
- Professors want any text-embedded examples to enhance clarity of a concept.
- Students want unnecessary material eliminated; to them, "unnecessary" means background and history of a concept, not practical examples.
- Students believe that in a course like business research, they should be able to DO research after they learn, not just be able to describe it.
- Students are expected to apply what is learned in their research methods course in more advanced classes; their research methods text needs to serve as a reference manual.

This revision accomplishes the above in the following ways:

- **Separate.** This edition:
 - Eliminated elements that artificially tie chapters together.
 - Reinvented the use of elements that share cross-chapter features.
- **Streamline and simplify.**
 - At the book level, this edition:
 - Changed the number and order of chapters.
 - Addressed writing and reading level by choosing more widely accepted vocabulary, rather than jargon, to describe and explain; shortening sentences; and employing a more approachable journalist style.
 - At the chapter level, this edition:
 - Moved some material from one chapter to another where it had a more logical fit.
 - Reorganized material in each chapter to make it flow more logically (always putting A before B),
 - Removed from every chapter material that might be "nice to know" but wasn't "critical to know."
 - Assessed the value of every exhibit and example and made appropriate changes.
 - Removed multiple terms for the same concept.
 - Held the list of Key Terms to research-specific terms.

- **Clarify.**
 - Students are often frustrated with textbooks; books define concepts using other concepts students don't fully understand. This edition redefines dozens of key terms to remedy this problem.
 - Students want examples to be relevant to them. This edition chose business research projects to profile by choosing behaviors, issues, or brands students might know or embrace.
 - Students want to understand; a definition alone doesn't achieve this. In this edition, any concept important enough to include has more than a definition.
 - Students prefer one term for a single concept; they find multiple terms aggravating and confusing. This edition uses one term for one concept, with alternatives relegated to the glossary.
 - Students want the key terms list for each chapter to be comprehensive but to exclude terms that aren't critical. After conferring with researchers and professors, several concepts were removed from the key terms lists and the glossary, while others—having achieved more common use in the industry—were added.
 - Students want, and need, to be able to DO research. This edition delivers:
 - One chapter for basic foundational concepts.
 - One chapter with everything needed to craft measurement questions.
 - One chapter with everything needed to develop a measurement instrument.
 - One chapter each for each of the data collection methods.
 - One chapter for preparing data for subsequent detailed analysis.
 - One chapter for reporting research.
 - “How-to” guides for difficult tasks and helpful tips for other tasks in exhibits and in several new appendices (*Better Tables, Better Reports, Sample Computer-Based Questions and Guidelines for Mobile Q.*).
 - A new chapter, *An Integrated Example*, that provides an insider's view of a research project from management dilemma to research report.
 - Students need visual cues to process and retain information:
 - This edition provides 66 new photo visual cues to help them remember material.
 - This text uses a series of exhibits linked to the research process; these use common shapes

and colors. Every exhibit in the 31-exhibit process series of exhibits has been subtly or substantially redesigned; the series includes two new exhibits.

- Concepts are now strongly linked to the five stages in the primary research process model.
- Students and faculty alike want ways to assess student understanding of material. This edition offers a new resource: *Connect*. *Connect* provides students computer-based assessment exercises, which encourage practice and provide instant feedback on mastery of material. Use of *Connect* improves understanding and recall. *Connect* provides instructors student- and class-level analytics to improve subject, class, and course decisions.

Reflect the Research Industry

As in prior editions, the use of various interim *GreenBook Research Industry Trends (GRIT)* reports guided the research for this revision. The 2016 GRIT Report is based on the largest study of research suppliers and users ever conducted.

- **Rethink.** This edition:
 - Makes a clear distinction between research and data analytics.
 - Removed topics that are no longer relevant.
 - Reduced coverage of topics showing waning importance.
 - Enhanced coverage of topics the industry has embraced.
 - Redesigned exhibits to reflect industry changes; of the more than 200 exhibits in this edition, 31 are completely new, and an additional 55 have been updated or redesigned.
- **Collaborate.** In an industry that is changing very quickly, any revision depends on people on the front lines of research. Hundreds of emails and conversations, numerous books and articles, and almost 100 webinars and presentations have influenced this edition.
 - Of the 56 Snapshots, PicProfiles, and Closeups featured in this edition, 79 percent are new (32) or updated (12). Topics in these rich research stories cover cyber security, prediction markets, sentiment analysis, why data analytics isn't delivering results, programmatic ad buying, millennials and housing, the art of asking questions, using interviews to define the management question, learning from Pixar to tell research stories, automated secondary data searchers, agile research, performance management research, who's taking surveys, digital

transformation, use of smartphones, eye tracking, observation with body cameras, experiments in employee health, use of robots, experimental labs, gaming, packaging redesign, question banks, survey engagement, infographic reports, coding word data, data insights, finding best practices, presentation venues, and much more.

- Discussion questions, especially those labeled *From the Headlines*, cover Chipotle’s reputation, BMW and electric cars, Uber software that excludes neighborhoods and buildings, shifting jobs to robots, airline safety, Delta’s reorganization of LAX, Dolby’s experiments with theater light and sound, Mercedes-Benz and self-driving cars, Walmart and Nabisco’s Oreo O’s cereal, Kohl’s department store and Apple Pay, performance-enhancing drugs in the workplace, Toyota and public confidence, and more.

Keep the Features Adopters Love

- **Critical Core Content.** The materials adopters have loved for decades are still the core of this edition. In an attempt to make the book more flexible to current instructional methodologies, we haven’t abandoned what made the book an industry leader.
- **Strong Learning Objectives and Summaries.** Every chapter has new learning objectives. The summaries are comprehensive, knowing sometimes these are the only material a student has time to read before class.
- **Multipurpose Discussion Questions.** These can serve as review for students, as testing exercises, or as options for vibrant class discussions because many reflect real-business situations.
- **Versatile Appendices.** End-of-chapter and end-of-text appendices for information that, given the differing skills and knowledge of their students, professors may want to emphasize or exclude. New appendices relate to building *Better Tables* and offering tips on *Better Reports*; to address mobile and other types of computer-delivered measurement instruments, there is the appendix *Sample Computer-Based Questions and Guidelines for Mobile Q*. We retained end-of-chapter appendices related to *More Effective Measurement Questions* and *Calculate Sample Size*.

Professors sometimes use writing a proposal as an end-of-term project or testing exercise. As a result, Appendix A has been rewritten with three exercises in mind: writing a formal proposal, creating an RFP, and assessing a proposal submitted in response to an RFP. Other end-of book appendices offer a professional focus group discussion guide (B), cover nonparametric statistics (C), and provide statistical tables (D).

Use the Cloud

We offer a comprehensive set of teaching and learning resources for *Business Research Methods* for faculty in Instructor Resources within Connect and for students at www.mhhe.com/Schindler13e. You’ll find the following:

- **Written Cases.** Cases offer an opportunity to tell research stories in more depth and detail. You’ll also find cases about hospital services, lotteries, data mining, fundraising, new promotions, and website design, among other topics, featuring organizations like Akron Children’s Hospital, Kelley Blue Book, Starbucks, Yahoo!, the American Red Cross, and more.
- **Video Cases and Supplements.** New to this edition is a video supplement about an experiment in observation using body cameras; it should be ideal for discussing error in observation research. Additionally, several short segments drawn from a two-hour metaphor elicitation technique (MET) interview should be invaluable in teaching students to conduct almost any type of individual depth interview and to explain the concept of researcher–participant rapport. Four of our video cases were written and produced especially to match the research process model and feature noted companies: Lexus, Starbucks, Wirthlin Worldwide (now Harris Interactive), Robert Wood Johnson Foundation, GMMB, Visa, Bank One, Team One Advertising, U.S. Tennis Association, Vigilante New York, and the Taylor Group.
- **Data Files.** If your course doesn’t involve a project where students collect their own data, use one of the cases here that contain data.
- **Sample Student Project.** Visualization of the finished deliverable is crucial to creating a strong research report, or critique this one.
- **Appendices.** You’ll find helpful appendices within Connect: *Bibliographic Database Searches*, *Advanced Bibliographic Searches*, *Complex Experimental Designs*, *Test Markets*, and *Pretesting Options and Discoveries*.
- **Articles, Samples, and Templates.** Students often need to see how professionals do research to really understand the research process. You’ll find a sample EyeTrackShop report, a Nielsen report of using U.S. Census data, an Excel template for generating sample data displays, and more.
- **Multivariate Analysis: An Overview** is a chapter for the benefit of graduate students who use *Business Research Methods*.
- **Instructor’s Manual** (instructors only).
 - **Web Exercises.** Due to the ever-changing nature of web URLs, you’ll find these exercises here.

- *Written and Video Case Discussion Guides.*
- *Additional Business Research Examples* for discussion.
- **Test Bank** (instructors only).

Collaborators

Research industry collaborators are the lifeblood of this textbook writer. The following people collaborated directly on this edition or connected me with those who did: Andy Peytchev, Research Triangle Institute; Bella Tumini, Suja; Betty Adamou, Research Through Gaming Ltd.; Cassandra McNeill, GutCheck; Colin McHattie, iTracks; Dan Weber, iTracks; Daniel Enson, Toluna; David Harris, Insight and Measurement; Denise D’Andrea, Focus Vision; Edwige Winans, Marcus Thomas LLC; Elaine Arkin, research consultant; Eric Lipp, Open Doors Organization; Ilan Hertz, SiSense; Jane Boutelle, Digsite; Jennifer Hirt-Marchand, Marcus Thomas LLC; Jessica Broome, Jessica Broome Research; Justin Ohanessian, Sticky; Kerry Hecht, Ramius; Lance Jones, Keynote Systems; Lenard Murphy, GreenBook; Lisa Whestone, Gutcheck; Malgorzata Kolling, OdinText; Mark Bunger, Forrester Research; Matt Marta, GutCheck; Monika Wingate, Digsite; Nicola Petty, Statistics Learning Centre; Patricio Pagani, InfoTools; Pete Cape, SSI; Rob Ramirez, Schlesinger Associates; Robert W. Kahle, author; Tom H.C. Anderson, Anderson Analytics and OdinText; Sean Case, Research for Good; Seth Stoughton, University of South Carolina; Stuart Schear, Robert Wood Johnson Foundation; and Zoe Downing, Focus Vision.

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This revision incorporates the feedback of dozens of students who identified areas of confusion so that this edition could make concepts more understandable, who participated in search tests, who worked on numerous research projects demonstrating where the book needed to include more information, and who provided reminders with their questions and actions that some aspects of the research process operate below their learning radar.

Through this 13th edition, I hope you and your students discover, or rediscover, how stimulating, challenging, fascinating, and sometimes frustrating this world of research-supported decision making can be.

Pamela Schindler

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>detailed changes to this edition

In its 13th edition, all chapters within *Business Research Methods* have been evaluated for currency and accuracy. Revisions were made to accommodate new information and trends in the industry, changing teaching pedagogy, and information about what teachers and students are looking for in their textbooks.

- The book's chapter structure is slimmer and has been changed to reflect how teachers are teaching research and using the book; the book now has 17 chapters.
 - A foundations chapter replaces the first three chapters.
 - The chapters on data preparation and examination have merged.
 - A *Research Reports* chapter now merges information on oral and written reports, with emphasis on oral reports to better reflect industry practice.
 - A new Chapter 17, *An Integrated Example*, now provides an insider's perspective of a research project. This example applies text practices and theory to one example from management dilemma to research report.
- Material has been reorganized to tie better to the modified research process model; there are now five parts, each part a match to a stage in the model. Part I, contains three chapters and establishes the foundations for what follows. Part II contains five chapters, all focused on research design and its various methodologies. Part III contains four chapters, all related to data collection and preparation. Part IV contains two chapters related to data analysis. Part V contains one chapter on research reporting. The part structure was designed to better reflect the research process as it is currently managed.
- Ethical issues are discussed, with their possible solutions, in every chapter, rather than in a stand-alone chapter, to reflect how teachers are using this material.
- Every section and every word has been examined for concept clarity and better student understanding; whole sections and whole chapters and appendices have been reconceived and rewritten.
- An emphasis has been placed on indicating solutions for problems or possible error sources, not just indicating or describing the errors/problems.
- Based on student feedback, an emphasis has been placed on providing sufficient information to "do" research, not just learn about research. Exhibits have been added to reflect *how* to execute a particular practice, facilitating the experiential approach to teaching and learning business research methods.
- For clarity and to match a chapter's new structure, numerous Exhibits are new (38), have been revised significantly (34), or have been slightly modified (8).
- Continuing examples no longer weave throughout the text; chapters can now be assigned in different order to fit any teaching pedagogy.
- Images (58) have been added or replaced, giving a visual cue for new Snapshots, PicProfiles, or new embedded examples.
- To reflect industry practices, the series of exhibits that reflect the research process and that are used as conceptual "thought flowcharts"—especially valuable for visual learners—have been reenvisioned and redesigned; new exhibits have been added to this process series.
- The *Cases* section contains an updated case-by-chapter-suggested-use chart.
- Continuing to provide rich examples from the research industry, 30 new Snapshots, five new PicProfiles, and two new Closeups have been added; two Closeups have been updated.
- Several new chapter-level appendices have been added to this edition: *Better Reports* (Chapter 16), *Better Tables* (Chapter 13), *Sample Computer-Based Questions and Guidelines for Mobile Q* (Chapter 11), and *Sources of Measurement Questions* (Chapter 11).
- The Glossary has been updated; 77 new terms reflect changes in industry practices and 27 additional terms were upgraded to key term status.
- The *Instructor's Manual* contains additional research examples for discussion or testing.
- *McGraw-Hill Connect*[®] has been added to the book's resources; *Connect* provides opportunities for both formative and summative assessment by providing students regular and consistent feedback, encouraging practice, and enabling them to move closer to mastery by improving understanding and recall. Instructors are provided student and class analytics, to improve teaching decision making. Assignable material within *Connect* for this edition includes multiple choice questions for homework for each chapter and test bank questions for online testing.
- *SmartBook*[®], also assignable in *Connect*, is a digital version of our textbook that actively tailors that content to an individual student's needs. It helps a student focus on the things they don't know, helps them retain key concepts, is accessible on the go, and tracks student progress.

- Student Resources/Faculty Resources within Connect contain new materials (sources, videos, examples) and video showcasing an observation experiment using body cameras.
- *Test Bank* has been updated to reflect changes in content and organization.
- *PowerPoint* slide decks have been updated to reflect changes in content and organization.

For Each of the Chapters A detailed listing of chapter-by-chapter changes is provided here for your convenience.

- **Chapter 1** This chapter was completely rewritten and has a new focus: the fundamentals or critical concepts students need to understand the remainder of the book. It combines material from 12e Chapters 1 and 3, with elements from Chapter 2. The following elements are new to this edition: chapter-opening quote (William Pink), the learning objectives and summary, a PicProfile on emerging trends based on the latest GRIT report, three new Snapshots (*Big vs. Small Data*, *Research on Cyber Security*, and *Identifying and Defining Constructs*), two revised exhibits, multiple images as visual cues, new embedded examples related to Hobby Lobby and Siemens AG, one new key term (data blending), four new photos serving as visual cues, and new discussion questions. Several sections have been pulled and others moved to chapters with a better fit. Six snapshots and three exhibits have moved to the IM.
- **Chapter 2** Previously Chapter 4, this chapter features a restricted and simplified research process exhibit and a new structure based on five stages of the research process, with material on proposing research moving to Chapter 3. The following elements are new to this edition: chapter-opening quote (Brad Smith, Microsoft), learning objectives and summary, three new sections (identifying and prioritizing dilemmas, research project timeframe, and ethical issues and responsibilities) and five restructured sections, a PicProfile on emerging trends in research design, a Snapshot (*Research and Programmatic Algorithms*), a revised snapshot on outsourcing research, a new exhibit on Gantt chart of research project, four new images, five new key terms [key performance indicators (KPIs), dashboards, findings, insights, recommendations], and a new From-the-Headlines discussion question. The What is Good Research and Ethical Issues sections moved to this chapter from Chapters 1 and 3, respectively. Detailed management-research question hierarchy section was moved to Chapter 3. CPM chart was moved from Chapter 6.
- **Chapter 3** Previously Chapter 5, this chapter is restructured and focuses on stage 1 of the research process: the management-research question hierarchy and exploration to include valuing and budgeting research. The following elements are new to this edition: chapter-opening quote (Warren Berger, author), learning objectives and summary, eight new sections, one modified and four new exhibits, three new Snapshots (*Housing and Millennials*, *The Art of Asking the Right Question*, *Using Interviews to Refine the Management Question*), eight key terms relocated from other chapters, and six new images as visual cues. The section on data mining was dropped to reinforce Chapter 1's emphasis on research and data mining as different courses. Several key terms have moved to other chapters to reflect relocation of certain material. Several Snapshots have moved to the IM.
- **Chapter 4** Previously Chapter 6, the emphasis of this chapter has changed to research design once the research question(s) and investigative questions have been determined and the decisions involved in research design, including those involved in sampling design, have been made. The following elements are new to this edition: chapter-opening quote (Nick Drew, Fresh Intelligence), learning objectives and summary, a new section (sampling design), two new Snapshots (*TIAA Performance Management Overhaul*, *AIG and Research Design*), a new CloseUp (*How Agile Research Helped Prove the Value in a Packaging Redesign*), two modified exhibits, embedded example on productivity and morale, five new images as visual cues, one new key term (single-methodology design), and modified discussion questions—including a new From-the-Headlines discussion question. Detailed sections on causation moved to Chapter 8, and focus groups moved to Chapter 6. Two Snapshots moved to the IM.
- **Chapter 5** Previously Chapter 14, this chapter has a different structure based on the six steps of sampling design. The following elements are new to this edition: chapter-opening quote (Gerald Earl Gillum, American rapper and producer), learning objectives and summary, three new sections (sampling design, selection and recruiting protocols, and ethical issues and their solutions), one new snapshot (*Who's Taking Your Surveys*), one revised PicProfile on mixed access sampling, four new exhibits, four revised or modified exhibits, four new images as visual cues, and a new From-the-Headlines discussion question. Two key terms were moved here (case, target population).
- **Chapter 6** Previously Chapter 7, the following elements are new to this edition: chapter-opening quote (Gia Calhoun, Burt's Bees), learning objectives and

summary, two new sections (qualitative sampling design, including incentivizing participants and interviewers as consultants, and ethical issues and their solutions) and one enhanced section (creative exercises), three new Snapshots (*Digital Transformation Revealed Using IDIs*, *IDIs Help Restructure Maritz Travel*, *Qualitative Research in the Era of Smartphones*), two revised exhibits, three new images as visual cues, and seven new key terms (data saturation, collage, completion/fill in the blank, role playing, creative innovation roleplay, storytelling, write a letter). Four Snapshots and PicProfiles moved to the IM.

- **Chapter 7** Previously Chapter 8, this chapter has been reorganized to follow the observation research design steps. The following elements are new to this edition: chapter-opening quote (Katie Hafner, author), learning objectives and summary, two new sections (sampling design, ethical issues and their solutions), two new Snapshots [*Visual Content Gets Sticky*, *Observation and Police Cameras* (with video on the website)], three revised or modified exhibits, six new images as visual cues, two new key terms (memory decay, selective filtering), and a new From-the-Headlines discussion question. Several Snapshots and a PicProfile have moved to the IM.
- **Chapter 8** Previously Chapter 9, this chapter has been reorganized, with evaluation of experiments moving toward the end of the chapter. The following elements are new to this edition: chapter-opening quote (Jeff Bezos, CEO, Amazon), learning objectives and summary, a new section (ethical issues and their solutions), a relocated section on causation (including two exhibits), four snapshots (*Experiments in Improving Employee Health*, *Robotic Experiments*, *Zeotap Experiments with Mercedes-Benz*, *MIT SENSEable City Lab*), two revised exhibits, four new images as visual cues, 14 new key terms (debriefing, after-only design, group time series design, history, instrumentation, maturation, nonequivalent control group design, one group pretest-posttest design, posttest-only control group design, selection, separate sample pretest-posttest design, static group comparison design, regression toward the mean, testing), and a From-the-Headlines discussion question. Four Snapshots moved to IM.
- **Chapter 9** Previously Chapter 10, this chapter has been reorganized. The following elements are new to this edition: chapter-opening quote (David Goldberg, CEO, SurveyMonkey), learning objectives and summary, four new sections (classification of data collection designs, telephone survey trends, evaluation of survey design, and ethical issues and their solutions), two new Snapshots (*Internet Brings Prediction*

Research into 21st Century, *Research Embraces the Smartphone*), two new PicProfiles on emerging trends in survey research and declining response rates, two new and three revised exhibits, four new images as visual cues, updated statistics, three new key terms (acquiescence bias, probe, social desirability bias), and a From-the-Headlines discussion question. Two additional exhibits moved to this chapter (informed consent and IRB process).

- **Chapter 10** Previously Chapter 11, The following elements are new to this edition: chapter-opening quote (David McCandless, author), one new exhibit, two revised exhibits, one new Snapshot (*The Emotional Face of Research*), four images as visual cues, and a From-the-Headlines discussion question.
- **Chapter 11** Previously Chapter 12, this chapter is reorganized and rewritten to focus on measurement questions, rather than the scales on which they are based, in order to work better with the chapter on measurement instruments. The following elements are new to this edition: chapter-opening quote (David F. Harris, president, Insight and Measurement), learning objectives and summary, two new sections (instrument design, prepare the preliminary analysis plan) and one revised section (data entry), a new Snapshot (*Toluna and Voss Measure Water*) and a new PicProfile about Urban Dictionary, four new and three revised or modified exhibits, two additional exhibits moved from other chapters, some material on coding moved from another chapter, five new images as visual cues, five new key terms (attitude scaling, checklist, error of strictness, interview guide, scaling) and 17 key terms moved here from other chapters, modified discussion questions (including a From-the-Headlines question), and two new appendices (sample computer-based questions by scale type, sources of measurement questions).
- **Chapter 12** Previously Chapter 13, this chapter has a new structure to work better with the chapter on Measurement Questions, with a stronger link to the preliminary analysis plan. The following elements are new to this edition: chapter-opening quote (Kristin Luck, research consultant), learning objectives and summary, three new sections (instrument design, physical design, nonquestion elements), one new Snapshot (*New Vehicle Survey*), five new and three revised exhibits, four new images as visual cues, 15 new key terms (assimilation effect, behavior cycle, behavior frequency, behavior time frame, completion estimate, contrast effect, filter question, instrument coverage, instrument scope, interview guide, measurement instrument, rapport, skip directions, skip logic diagram, social desirability bias), revised discussion questions, and a new From-the-Headline

question. The Invoke PicProfile was moved to the IM.

- **Chapter 13** As a merger of 12e Chapters 15 and 16, this chapter has a new structure and new content. The following elements are new to this edition: chapter-opening quote (Dana Zuber, director of analytics for Butler, Shine, Stern & Partners), learning objectives and summary, one new section (collect the data) and a revised section (coding), six revised and three new exhibits, two new Snapshots (*How Might You Code Word Data*, *The Difference Between Data and Insight*), updated statistics, 17 new key terms (coding scheme, context units, cross-tabulation, data collection, data validation, inter-rater reliability, intra-rater reliability, listwise deletion, data missing at random (MAR), data missing but not missing at random (NMAR), data missing completely at random (MCAR), pairwise deletion, predictive replacement, recoding, recording units, sampling units, survey activation), revised discussion questions, and new chapter appendix (Better Tables). Four Snapshots, a CloseUp, and a PicProfile were moved to the IM.
- **Chapter 14** Previously Chapter 17, the following elements are new to this edition: one revised and one new exhibit, and three new images as visual cues.
- **Chapter 15** Previously Chapter 18, the following elements are new to this edition: chapter-opening quote (Jeff Bezos, CEO, Amazon), one new Snapshot, and three new images as visual cues. One exhibit (grammar and style proofreader results) was moved to the IM.
- **Chapter 16** As a merger of Chapters 19 and 20, this chapter has a new structure emphasizing the

oral presentation. The following elements are new to this edition: chapter-opening quote (David McCandless, British data journalist, information designer, and author), learning objectives and summary, four new sections (audience-centric planning, visualization specifically for the oral report, infographics, ethical considerations in reporting), a new Snapshot (*Hitting the Wall is a Good Thing*), a new CloseUp (*Storytelling from Pixar Applied to Research*), five new and 10 revised exhibits, an infographic image, 21 new key terms (predispositions, confirmation bias, anchoring bias, conformity bias, survivorship bias, loss-aversion bias, visualize, data clarity, actionable insights, audience-centric planning, data-centric planning, desired audience effect, graph, information, insights, limitations, report framework, report structure, table, tone, geography), revised discussion questions, and a new chapter appendix—*Better Reports*—with five new exhibits and five existing exhibits from prior chapters. Two items (constructing a story and overcoming the jitters) were moved to the IM.

- **Chapter 17** This new chapter, *An Integrated Example*, provides an insider's perspective of a research project. This example applies text practices and theory to one example from management dilemma to research report. The companies, Visionary Insights and BrainSavvy, might be fictional, but the research profiled in the example is very real. This chapter can be used throughout the course to review (or test) various concepts, or at the end of the course as the basis for a lively discussion or final exam.

There is a wealth of information, samples, templates, and more within Connect for instructors, and at www.mhhe.com/Schindler13e for students.

Written Cases. Cases offer an opportunity to tell research stories in more depth and detail. You'll find a new case, *Marcus Thomas LLC Tests Hypothesis for Troy-Bilt Creative Development*, complete with its online questionnaire, at the Online Learning Center. You'll also find cases about hospital services, lotteries, data mining, fundraising, new promotions, and website design, among other topics, featuring organizations like Akron Children's Hospital, Kelley Blue Book, Starbucks, Yahoo!, the American Red Cross, and more.

Video Cases. We are pleased to continue to make available a first in video supplements: several short segments drawn from a two-hour metaphor elicitation technique (MET) interview. These segments should be invaluable in teaching students to conduct almost any type of individual depth interview and to explain the concept of researcher-participant rapport. Four of

our video cases were written and produced especially to match the research process model in this text and feature noted companies: Lexus, Starbucks, Wirthlin Worldwide (now Harris Interactive), Robert Wood Johnson Foundation, GMMB, Visa, Bank One, Team One Advertising, U.S. Tennis Association, Vigilante New York, and the Taylor Group.

Web Exercises. It is appropriate to do web searches as part of a research methods course, so each chapter offers one or more exercises to stimulate your students to hone their searching skills. Due to the ever-changing nature of web URLs, however, we offer these exercises in the *Instructor's Manual*.

Articles, Samples, and Templates. Students often need to see how professionals do things to really understand, so you'll find a sample EyeTrackShop report, a Nielsen report of using U.S. Census data, an Excel template for generating sample data displays, and more.

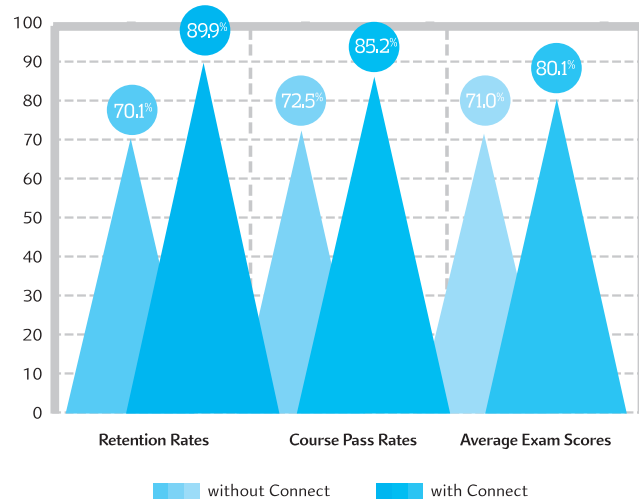
Sample Student Project. Visualization of the finished deliverable is crucial to creating a strong research report.

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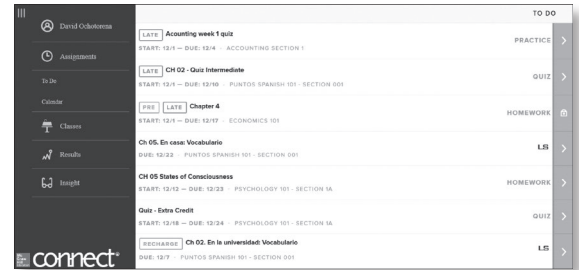
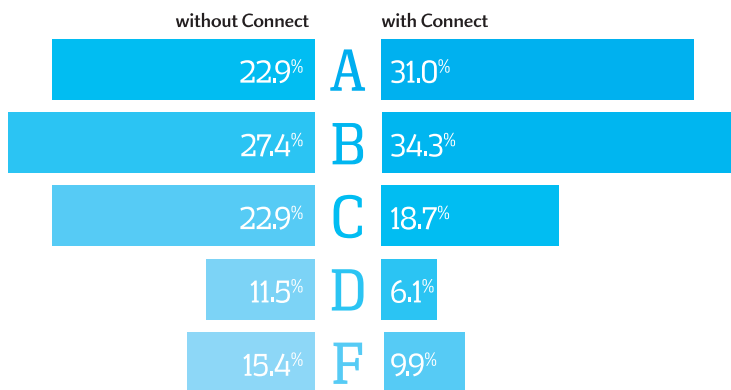
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> part I

Chapter 1 **Research Foundations
and Fundamentals**

Chapter 2 **The Research Process: An Overview**

Chapter 3 **Stage 1: Clarify the Research Question**



**Building the Foundation
for Research**

>chapter 1

Research Foundations and Fundamentals

“As big data increases, we see a parallel growth in the need for ‘small data’ to answer the questions it raises.”

*William C. Pink,
senior partner
Creative Analytics*

>learning objectives

After reading this chapter, you should understand . . .

- LO1-1** How business research and data analytics complement each other.
- LO1-2** The language of professional researchers.

>The Role and Process of Research

Every manager in the course of his or her career, regardless of his or her field, will make thousands of decisions of various types: strategic, tactical, and procedural. Each decision starts with a problem or opportunity—a dilemma. A strategic decision determines the general approach; a tactical one, a method for executing the strategic decision; and a procedural one, the specifics for executing the tactical decision. For example, brick-and-mortar retailers have been having significant difficulties as more people have embraced smartphones. Increasingly, people are bypassing stores to shop online (dilemma). Hobby Lobby, however, is thriving. This retailer chooses to serve the crafting market (strategic) and emphasizes supplying the needs of painters, photographers, jewelry makers, quilters, floral designers, and interior decorators (strategic). To serve photographers, it carries matting boards, tools for cutting such board, and frames, but not cameras (tactical). It might identify each new product for its photography area by reviewing an in-person, profit-based pitch (procedural). The company is family-owned (strategic). It makes its decisions guided by values emphasizing strengthening family (strategic). As a result, its brick-and-mortar stores are open fewer hours (tactical), and its full-time people are paid three times the minimum wage (tactical).¹ Researchers also make these kinds of decisions, deciding, for example, to use a communication study (strategic) and choosing a mobile survey (tactical) with participants recruited by posting an invitation on a company’s Facebook page (procedural). Today, the pressure on managers to justify their decisions, in an effort to guarantee a return on the investment of the resources (people, money, time, equipment, facilities) that each decision requires, is enormous. The journey from dilemma to decision uses information as fuel.

Companies have always collected data. Each organization is not equally adept, however, at using those data to develop meaningful information and insights useful for making good decisions. Over the last decade, some organizations have used newly available tools (faster computing power, better data analytic software) to tap into data it has already collected, data that have been languishing in departmental silos or company data warehouses. What once was a pool of data has become a veritable ocean of data. Some firms are drowning. Others are barely staying afloat. Still others are grasping the opportunity to use this ocean of data as a foundation for their strategic direction and gain competitive advantage.² Those companies that have been successful have found fuel for their decisions. But fuel comes in different grades; think regular gasoline versus rocket fuel. Using only historic data to make a current decision is one approach to decision making; enriching that fuel mixture by collecting new data specific to a given dilemma, is another.

The field you are about to study is in the midst of upheaval and disruption.³ For almost a century, researchers have been viewed by managers as technical support. These specialists were brought in on projects when technical expertise in research methodology and data analysis were needed. But, within the last few years, that has been changing. New technology, new and better computing tools (artificial intelligence, virtual reality, better mobile equipment, Internet of Things), and even a new computing environment (the cloud) are adding to industry chaos. In the midst of this sea change in business, new pressures are being put on the researcher. It is no longer acceptable to merely add to the data pool; business managers need clearly communicated insights from each new data addition. Researchers are now expected to not only be technologically competent, but to have an understanding of how businesses and organizations work. And managers, who once delegated research projects to specialists, are expected to be conversant with research methodologies and tools. Welcome to the new world of research, where researchers are data storytellers and insight providers, critical to helping provide strategic and tactical direction.

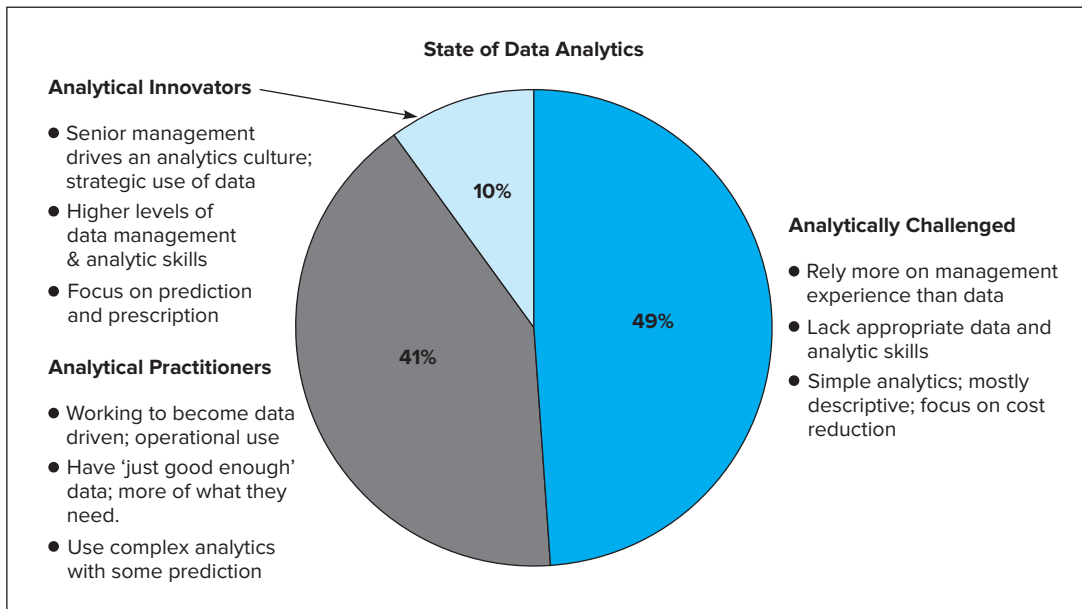
Research versus Data Analytics

Facing each new dilemma, it is the manager’s decision whether he or she has sufficient information—drawn from data previously collected, either internal or external to the firm—or needs more information to make an appropriate decision. Managers draw on data from existing internal data sources (called a *decision support system*) when engaging in data analytics. For example, Amazon, in an attempt to increase our order, mines its data to provide us with a list of products that others—who bought what we

Analytics Under-delivers Compared to its Hype

According to the latest report from *MIT/Sloan Management Review* and SAS, data analytics is not living up to its hype. The report classifies analytic users on three levels of maturity: analytical innovators (who apply analytics strategically), analytical practitioners (who apply analytics operationally), and the analytically challenged (who rely more on management experience than analytics to make decisions). Analytical innovators—those benefiting the most from the application of analytics (both the extraction of insights and their dissemination to affect organizational actions)—have, rather than growing in the last four years, basically remained stagnant. They propose several reasons for this, including a lack of senior management commitment and a focus on operational rather than strategic use of data.

Some examples of analytical innovators, however, give us role models for the practice. Bank of England (BoE) is an analytic innovator; to fulfill its regulatory role in the British economy, it is aggregating datasets, both microeconomic and macroeconomic, for the first time. BoE has “hired a chief data officer, created a data lab, established an advanced analytics group and formed a bank-wide data community.” General Electric, also an analytic innovator, created a new business unit, as well as a huge software division, to manage a cloud-based platform that aggregates and analyzes sensor data from industrial machines. “GE’s strategy for data and analytics has become tightly linked to its corporate strategy, a tremendous corporate shift for what was once a traditional manufacturing conglomerate.”



Source: Sam Ransbotham, David Kiron, and Pamela Kirk Prentice, “Beyond the Hype: The Hard Work Behind Analytic Success,” *MIT/Sloan Management Review*, April 2016, downloaded April 29, 2016 (http://marketing.mitsmr.com/PDF/57381-MITSMR-SAS-Analytics2016.pdf?utm_source=WhatCounts%2c+Publicaster+Edition&utm_medium=email&utm_campaign=darpt16&utm_content=Download+the+Report+%28PDF%29&cid=1).

are ordering—also bought. Such data is often referred to as *big data* due to the extensive size of many of these databases. Exhibit 1-1 provides some ideas for sources.

When existing data is mined, it may be used for a purpose other than that for which it was originally intended. In its mobility division, Siemens AG, the engineering powerhouse with almost 350,000 employees in 200 countries,⁴ builds systems into its trains. These systems generate more than 1 billion data points⁵ per train per year. They are used to track that train’s performance and maintenance activity and to learn from any train malfunctions or accidents. Collecting train data to understand and improve that train’s performance employs repetitive, ongoing observation research. However, drawing insights from data accumulated from European and U.S. trains to help design new rolling stock for China and Russia employs data analytics.

In another example, customer relationship management (CRM) software may initially be used to facilitate the sales process and improve the effectiveness of sales appeals to various customer groups.

>Exhibit 1-1 Where Business Collects Information

Type of Data	Where/How	Data Source
Transactional	Online and in-store purchases	Customer
	Online, phone, in-store inquiries	Potential customer, customer
	Warehouse and shipping manifests	Logistic partners, employee
	Machine performance	Machine data log
Observational	Online Web visits and in-store shopping trips	Customer, employee
	Competitor interactions	Customer
	Click-through paths on Web	Potential customer, customer
	In-store customer service interactions	Customer, employee
	Stock price valuations	Investors
	Biometric measures (e.g., neuromarketing, fMRI, PET, eye tracking)	Potential customer, customer, employee
Conversational (Touch points)	Surveys, online and in-store intercepts	Potential customer, customer, employee
	Call center interactions	Customer, employee
	In-store customer service interactions	Customer, employee
	Web chat interactions	Customer, employee
	In-store checkout	Customer, employee
	Candidate interviews	Potential employee
	Performance reviews	Employee
	Exit interviews	Employee
	Annual stockholder meetings	Investor
	Financial performance presentations	Financial analyst, institutional investor
	Listening tours	Customer, supplier, logistic partner, employee, decision influencer
	Twitter posts	Customer, employee, competitor, trade associations, distributor
	Facebook posts (company site)	Customer, employee, trade associations, distributor
	Blog activity	Customer, employee, competitor, trade associations, distributor
Other social media posts or discussions	Customer, employee, competitor, trade associations, distributor	
Internet Analytics	Keyword searches	Potential customer, customer
	Click analysis	Potential customer, customer
	Google+	Potential customer, customer

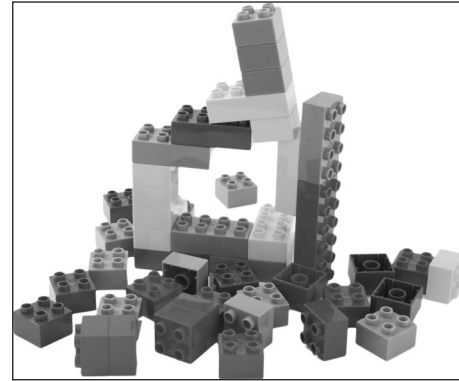
Our interviews and research for this edition revealed several sources of research data. This table is adapted from that research and author experience as well as from material by Cynthia Clark, “5 Ways to Learn What Customers Aren’t Telling You,” *1to1 Magazine*, March 5, 2012, accessed March 8, 2012 (<http://www.1to1media.com/view.aspx?docid=33464>); and “Harness the Conversation: Business in Today’s Social World,” *Cvent*, accessed March 8, 2012 (<http://www.cvent.com/en/sem/business-in-todays-social-worldsurvey-ebook.shtml>).

Additionally, a call center is designed to answer questions, provide technical support, or funnel prospects into the sales process; many calls to a call center are recorded to improve performance. Using data analytics, a firm might mine these two datasets to extract insights that help design a new customer landing page for the firm’s website. Businesses are getting better at **data blending**,⁶ combining data from separate data files (e.g., financial, human resources [HR], CRM, inventory management, and manufacturing) into a new composite data file, and then querying that composite data file to help make decisions. While the information that comes from data blending has an important role in decision making, it is not the same as research.

Assume for the moment that you are the manager of a full-service restaurant. You are experiencing significant turnover in your server pool, and some long-time customers have commented that the friendly atmosphere, which has historically drawn them to your door, is changing. Where will you begin to try to solve this problem? Your *business intelligence system* is designed to provide ongoing information about events and trends in the technological, economic, political-legal, demographic, cultural/social, and competitive arenas (see Exhibit 1-2). It reveals that wait-staff turnover is high in your industry, regulations on restaurant operations have become more stringent, and some area competitors are experimenting with increasing wait-staff wages while eliminating tips. You also review your firm’s financial records and HR records to determine pay, tips, pre-hire experience, and work hours of those who left and compare that information with those who stayed. Is this sufficient information, or is this a problem for which additional research should be used?

Big versus Small Data

In his book, *Small Data: The Tiny Clues That Uncover Huge Trends*, author Martin Lindstrom talks about the importance of knowing why. Lindstrom isn't an advocate of only using big data, indicating big data lacks insight because it focuses on analysis rather than emotional connection. His book focuses on what he's learned as he has visited or lived in more than 2,000 homes throughout the world and how those ethnographic observations paid big dividends. In a Knowledge@Wharton interview, Lindstrom described financially troubled Danish toymaker Lego. In 2002, Lego had ventured away from its core small blocks, instead emphasizing movies, theme parks, apparel, and large building blocks (based on big data about Millennials) only to discover—via interviews and ethnographic observations in homes across Europe—that it was taking away the major reason children play with the toy: the sense of accomplishment. In explanation, Lindstrom writes, “children attain social currency among their peers by playing and achieving a level of mastery at their chosen skill.” Lego re-focused on the small blocks based on its collection of small data. These actions brought Lego back from near bankruptcy. “You have to remember that Big Data is all about analyzing the past, but it has nothing to do with the future. Small Data, . . . seemingly

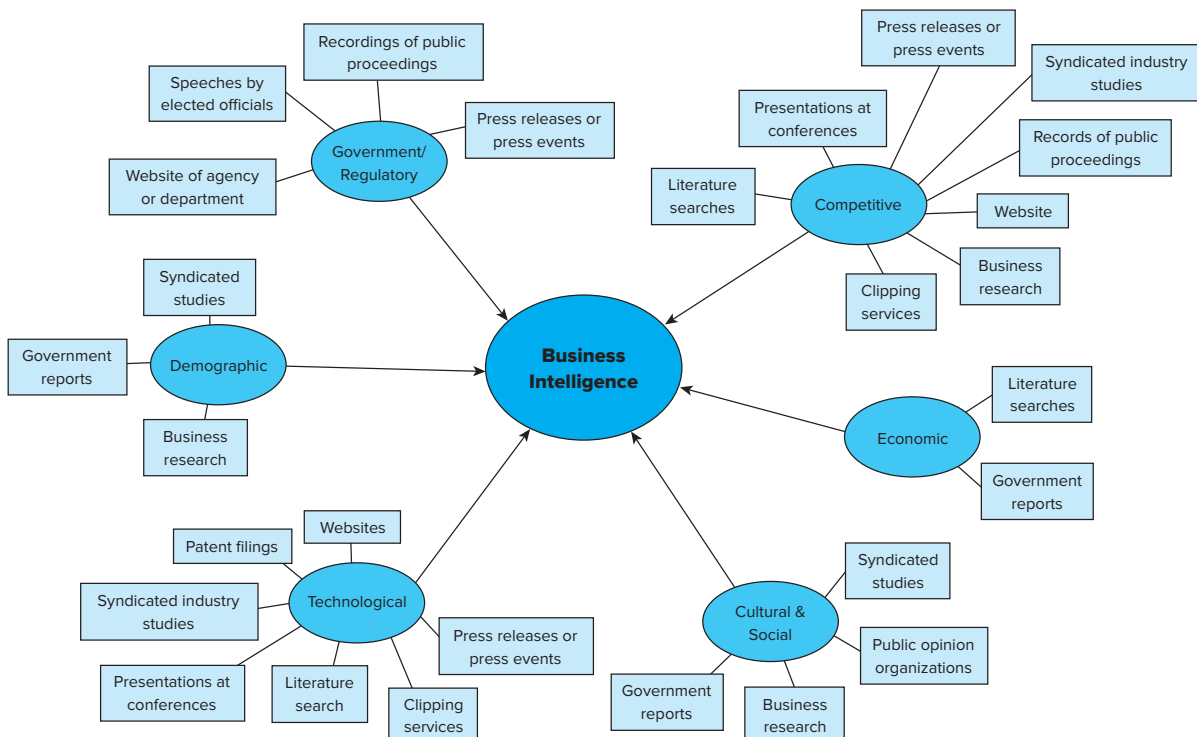


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insignificant observations you identify in consumers' homes, is . . . the emotional DNA we leave behind.”

Sources: Martin Lindstrom, *Small Data: The Tiny Clues That Uncover Huge Trends*, St. Martin's Press (February 23, 2016), pp 1-2; and “Why Small Data Is the New Big Data,” Knowledge@Wharton, March 24, 2016. Downloaded March 25, 2016 (http://adage.com/article/special-report-4as-conference/tipping-point-j/303268?utm_source=daily_email&utm_medium=newsletter&utm_campaign=adage&ttl=1459463433).

>Exhibit 1-2 Some Sources of Business Intelligence



Perhaps you are the head of your state’s department of transportation, charged with determining which roads and bridges will be resurfaced or replaced in the next fiscal year. You have data on which roads and bridges handle the most traffic, as well as those roads/bridges representing the greatest economic disaster if closed. However, the state’s manager of public information has expressed concern about the potential for public outcry if work is once again directed to more affluent regions of the state. The manager suggests using new research to assist in making your decision because the decision is one with numerous operational, financial, and public relations ramifications. Should you authorize new research?

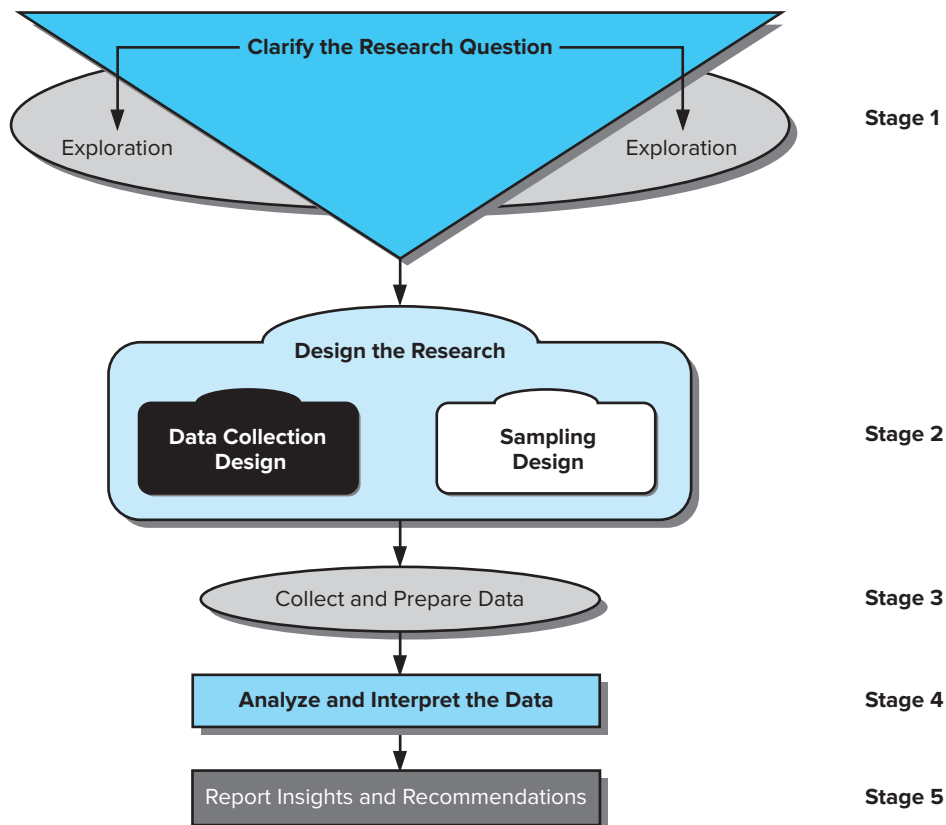
The Research Process

A deep dive into historical data rarely illuminates the ‘why’ behind actions. And the whys change over time; what was true a year ago might not be true today. To fulfill this new role of insight provider, you’ll need an understanding of both the process and the tools used by a researcher. **Business research** is defined as a *systematic inquiry* that provides information to guide a specified managerial decision. More specifically, it is a set of processes that include planning, acquiring, analyzing, and reporting relevant data, information, and insights to decision makers in ways that mobilize the organization to take appropriate actions. These actions are designed to maximize performance and help accomplish organizational goals. Typically, the overall process is divided into the following stages:

1. Clarify the research question.
2. Design the research.
3. Collect and prepare the data.
4. Analyze and interpret the data.
5. Report insights and recommendations.

Exhibit 1-3 provides a graphic of the process that we will develop in this text. At times, a manager may start his or her journey at the beginning and proceed stage-by-stage to its culmination. At other times, a

>Exhibit 1-3 The Research Process



Research on Cyber Security

How does research keep an organization secure from criminal “bad actors” in the cyber security arena? It’s used to spot the threat before it happens, to understand an organization’s vulnerabilities, to spot the attack venues, and more.

Over the last decade, cyber attacks have become more frequent, more sophisticated, more complex, and easier for the bad actors, all at the same time. New digital tools make it possible for these criminals to do tasks that just recently would require sophisticated programming expertise. Today, they can purchase whatever tools they need from criminal networks using Bitcoin, a digital currency that makes tracking the purchase and finding the criminal very difficult. As Richard Cassidy, cyber security evangelist with Alert Logic, one of the nation’s leading managed security providers, explains, “Companies are vulnerable from three types of bad actors. Not all pose the same degree of damage.” *Hacktivists* have a political or social agenda, and garnering media attention is their goal; *cyber criminals* may also want the media attention, but they seek monetary gain from the data they capture; *advanced persistent threats* (APTs) are the most dangerous and spend significant time, money, and resources prior to crafting a target-specific attack and do so for significant monetary gain and/or damage to the target.

From research, Alert Logic discovered that passwords (49.9 percent) and email addresses (45.5 percent) remain the prize target of bad actors, along with usernames (37.7 percent) and names (29.4 percent). Using this stolen information in combination with information readily available on company websites and social media sites like LinkedIn, a bad actor can obtain access to servers, databases, web domains, and more.

Attacks via phishing emails and software application plug-ins are the chief avenues of access to deliver malware. A phishing email is disguised to appear as though from a trusted source—for example, another employee or your boss.



©solarseven/Shutterstock

A plug-in is a software component that adds a specific feature to an existing computer program. Employees today bring their own mobile devices to work and often use software that hasn’t been rigorously evaluated for inappropriate plug-ins. Through these portals, malware (malicious software such as viruses, worms, Trojan horses, and spyware) can be injected into an organization’s system.

“Bad actors often try out their approach before launching the real attack,” claimed Cassidy. So catching them in this preliminary test should be the goal. The problem is that it takes an organization, on average, 205 days to identify that it has been compromised, and by then, the purpose of the attack has been accomplished.

www.alertlogic.com

Source: Richard Cassidy, “Behind The Scenes: Cybercrime Threat Landscape,” Brighttalk webcast, April 27, 2016, downloaded May 26, 2016 (https://www.brighttalk.com/webcast/11587/201299?autoclick=true&utm_medium=web&utm_source=brighttalk-promoted&utm_campaign=player-page-feed&utm_content=promoted).

manager may need only a portion of the process, given information that is available from a variety of other sources. Research is often characterized by much smaller datasets than big data. Once the research is presented, the manager has one very important decision: How shall he or she resolve the management problem?

Research and the Scientific Method

Intelligent, curious people who have a driving need to seek answers are at the heart of great research. The foundation of the business research process is the **scientific method**. The essential tenets of the scientific method are:

- Clearly defined concepts, constructs, variables, methods, and procedures.
- Empirically testable hypotheses: a way exists to gather evidence that directly supports/refutes any hypothesis.

- Direct observation of phenomena (facts).
- Conclusions drawn from statistical evidence rather than inferred justification (educated guesses).
- The self-correcting process: ability to replicate and reassess validity of conclusions.

>The Language of Research

So where do we start to understand the preceding material? We start with the language of research. When we do research, we seek to know “what is” in order to understand, explain, or predict phenomena. We might want to answer the question “What will be the department employees’ reaction to a new flexible work schedule?” or “Why did the stock market price surge higher when all normal indicators suggested it would go down?” When dealing with such questions, we must agree on definitions. Which *employees* of the department: clerical or professional? What *reaction*? What are *normal indicators*? These questions require the use of concepts, constructs, operational definitions, and variables.

Concepts

Concepts are used to understand and communicate information. The success of research hinges on (1) how clearly we conceptualize and (2) how well others understand the concepts we use. We design hypotheses using concepts. We devise measurement scales using concepts by which to test these hypotheses. We gather and analyze data using measurement concepts.

A **concept** is a generally accepted collection of meanings or characteristics associated with certain events, objects, conditions, situations, or behaviors:

- Concepts are created when we classify and categorize events, objects, conditions, situations, or behaviors—identifying common characteristics beyond any single observation.
- Concepts are acquired through personal experience or the experience of others.
- Concepts use words as labels to designate them; these words are derived from our experiences.
- Concepts have progressive levels of abstraction—that is, the degree to which the concept does or does not have something objective to refer to. At one extreme are objective concepts; at the other, abstractions. *Table* is an objective concept. We have images of tables in our mind. *Personality* is an abstract concept as it is much more difficult to visualize.

Think of a movie ticket as a concept. What comes to mind is not a single example, but your collected memories of all movie tickets from which you define a set of specific and definable characteristics (material, movie title use, perforation, multiple parts, screen location, etc.). For another example, assume you see a man passing and identify that he is running rather than walking, skipping, crawling, or hopping. Each movement represents a different concept. We also use concepts to identify that the moving object is an adult male rather than a truck or a horse.

Ordinary concepts make up the bulk of communication in research. *Ordinary*, however, does not mean *unambiguous*. We might, for example, ask research participants for an estimate of their family’s total income. *Income* may seem to be a simple, unambiguous concept, but we will receive varying answers and confusing data unless we restrict or narrow the concept by specifying:

- Time period, such as weekly, monthly, or annually.
- Before or after income taxes are deducted.
- For head of household only or for all household members.
- For salary and wages only or also including tips, bonuses, dividends, interest, and capital gains.
- To include or not include in-kind income (e.g., free rent, employee discounts, vacations, or food stamps).

We run into difficulty when trying to deal with less ordinary phenomena or advance new ideas. One way to handle this problem is to borrow a concept from another language or from another field. Assume we are researching a brand logo’s design strength. We can borrow the term *gestalt* from German, which translates as form or shape and means an organized whole more than the sum of its parts.⁷ Or we