

Business Research Process

BUS 230: Business Research and Communication

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1.1 Goals and Learning Objectives

Goals and Learning Objectives

- Goals of this chapter:
 - Learn what research is.
 - Learn why businesses want to do research to inform decisions.
 - Learn about types of research.
 - Learn the steps of the research process.
- Learning objective: LO1: Develop the ability to define a research problem. Formulate research questions and hypotheses that are measurable, well-defined, address the overall problem, are directly related, and reflect the scope of the problem.

2 Formulating a Research Question

2.1 Business Decision Making

Business Decision Making

- **Business decision making:** process of developing and deciding among alternative ways of,
 - resolving a business problem, or
 - taking advantage of a business opportunity.
- **Business problem:** a situation in which negative consequences are possible.
 - It may not be apparent what the problem is, or even that a problem exists.
 - **symptom:** the effects caused by a problem, serve as observable clues that a problem may exist.

- **Business opportunity:** a situation in which there is a potential for competitive advantage.

Why Research?

Ambiguous situations:

- Existence of an opportunity or problem may not be obvious.
- Precise nature of the problem or opportunity is not known.
- Alternatives for resolving a problem, or taking advantage of the opportunity are not fully clear.
- Set of symptoms to a problem are unclear or not all known.

What a good research question / project does is identify an *opportunity* or *problem*, as evidenced by one or more *symptoms*, and investigate *alternatives* for solutions.

2.2 Research Objective

Defining the Research Objectives

- Research objectives: what are the goals of your research project?
- *Problem / research question:* a single statement/question describing the objective of the research project.
 - Term “problem” is used more generally, what don’t we know, what question are we going to answer?
 - Not about confirmation or justification.
- Research problem must be clear and focused. More Albert Einstein:
 - “A problem well defined is a problem half solved.”
 - “The formulation of a problem is often more essential than its own solution.”

Methods for Finding Problem

- Exploratory research.
- Literature review. Often previous (published) research will motivate new questions.
- Pilot study (practice run): small-scale research project that collects data from individuals similar to those which will be used in a full study.
- Focus group: small group discussion in a loosely structured format, where participants are likely similar to those which would be used in a full study.

3 Types of Research

3.1 Exploratory Research

Types of Business Research

1. **Exploratory research:** identify problems or opportunities, discover alternatives.
 - Purpose is to clarify ambiguous situations.
 - Not intended to provide answers to problems or opportunities.
 - This is only the first step in a business decision process.
2. **Descriptive research:** describes people, organizations, customers, groups, etc. that are relevant to the business decision (more ahead).
3. **Causal research:** answers how will a change in one event in a manager's control change another event of interest (much more ahead).

3.2 Descriptive Research

Descriptive Research

- **Descriptive research:** describes people, organizations, customers, groups, etc. that are relevant to the business decision.
- Usually done after a problem or opportunity is well understood (after exploratory research).
- **Diagnostic analysis:** type of descriptive research that seeks to discover reasons for business outcomes.
 - Typically discovered with well written survey questions.
 - Might get at customers' feeling, beliefs, values, habits, spending habits, etc.

3.3 Causal Research

Causal Research

- **Causal research:** answers how will a change in one event in a manager's control change another event of interest.
- Examples:
 - How will an online training program affect workers' job performance?
 - How will an improvement in quality of a product change customer demand?
- In practice, establishing evidence for causation is *extremely tough*.

3.4 Overview

Text-Questions: Types of Research

- What is the relationship between alcohol consumption and students' academic performance?
- What is the ethnic, racial, and age profiles for viewers of *The Daily Show* on Comedy Central?
- Is there a difference between the amount of cheating between freshman students and senior students?
- What are the UW-L College of Business enrollment forecasts for the next year?
- A restaurant distributes a customer satisfaction survey.

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3.5 Establishing Causation

Evidence for Causation

- Temporal sequence: cause happens first, then effect.
- Concomitant variation: simply means two variables are related.
 - *Might* be measured with a correlation coefficient.
- Non-spurious relationship: concomitant variation is evidence that one variable causes another. This one is extremely tough to establish.

Variable Co-movement

- Spurious relationship: data on two variables are correlated but variables are not directly related to one another.
- Example: ice cream consumption and murder rate are positive related to one another.

- Example: class size and academic performance is related to another. Do you think they are positively related or negatively related?
- Example: alcohol consumption and academic performance??
- Example: being overweight and psychologically depressed??

Degrees of Causality

- **Absolute causality:** cause is necessary and sufficient to bring about the effect.
- **Conditional causality:** cause is necessary, but not sufficient, to bring about an effect.
 - Close example: smoking *and* lung cancer.
 - Possible business (close) example: develop a new product *and* increasing market share??
- **Contributory causality:** cause does contribute to effect, but the cause is not necessary or sufficient to bring about the effect.
 - Weakest, and most common form of causality.
 - Multiple causes may have the same effect.
 - Causes don't always result in an effect.

4 Stages of the Research Process

4.1 Overview

Overview of the Research Process

- Stages of the Research Process:
 1. Defining the research objectives.
 2. Planning a research design.
 - Planning a sample.
 - Collecting the data.
 3. Analyzing the data.
 4. Formulating conclusions.
- Albert Einstein once said, “If we knew what is was we were doing, it wouldn't be called research, would it?”
- Forward Linkage: earlier stages in the research process influence how the later stages are conducted.
- Backward Linkage: later stages in the research process influence what is done in the earlier stages!

4.2 Research Design

Research Design

- **Research Design:** detailed, carefully constructed plan of the methods and procedures for collecting and analyzing data.
- Types of research designs:
 - Collect primary data: answer who is your population? who are you going to sample? how? how many? What are your survey questions?
 - Experiments (like McDonald's). Carefully describe and assure the design will expose cause and effect.
 - Secondary data: use data from a previous study, use economic or financial data.
 - Literature review: piecing together the results from other studies may provide an answer to yours.

Sampling

- Purpose of collecting a sample:
 - Make inferences about the population, based on results from the sample.
 - Objective is *not* just to describe the sample.
- First ask: who is population?
 - Might be obvious: A population may be UW-L students.
 - Might not be obvious: Potential customers of a new product.
- Avoid sample selection bias: the act of being part of your sample itself is related to the result.
 - Cancer treatment.
 - Viterbo awareness.

Gathering Data

- Obtrusive methods: when gathering data requires filling out a questionnaire or interacting with an interviewer.
- Unobtrusive methods: subjects are not at all disturbed by collection of the data, or possibly even unaware.
 - Counting vehicles passing a billboard.
 - Collecting data on customer purchases.

- Treating research subjects ethically. Even simple questionnaires may pose risks:
 - Will the information be treated confidentially?
 - Is the researcher in a position of authority over a subject?

4.3 Analyzing Data and Drawing Conclusions

Analyzing Data

- Choosing appropriate statistical analysis.
- Are the assumptions behind the statistical procedures met?
- Will the results of the statistical procedure answer your *research question*?

Drawing Conclusions

- Conclusion section should be more than a short summary of what you did.
- Bring the results of the statistical analysis back to the research question. *Answer the question.*
- Did your analysis fail to fully answer the question, what questions remain.
- Does the discussion of the results motivate a new research question?