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WISDOM, UNCERTAINTY, AND AMBIGUITY IN MANAGEMENT DECISIONS BASED ON EXPERIENCES AND THE TRUSTWORTHINESS OF RESEARCH METHODS TO SUBSTANTIATE THEM

ABSTRACT

Wisdom, uncertainty, and ambiguity will always exist in management decisions. One danger for firms lies in managers making decisions based on faulty theories acquired through personal experiences or learned from the experiences of others. Often, these decisions don't generate the expected outcome and may even put the future of the firm at risk. Managers, to avoid this risk, are required to become wiser, more discerning, and more appropriately skeptical toward personal theories or theories learned from management gurus that propose simplistic formulas and quick-fix remedies. In this paper, the author discusses the risk of decisions based on personal theories or theories learned from others, the business research methods used to substantiate these theories, the philosophical assumptions of business research, the strength and weaknesses of qualitative and quantitative research methods, the benefits of combining both methods, and the trustworthiness of research methods in general for substantiating the theories used by managers in their decision-making.

Keywords: Management Decisions; Business Research Methods; Risk of Faulty Management Theories; Wisdom in Management Decisions; Ambiguity in Management Decisions; Uncertainty in Management Decisions.

SABEDORIA, INCERTEZA, E AMBIGUIDADE EM DECISÕES GERENCIAIS BASEADAS EM TEORIAS ADQUIRIDAS DE EXPERIÊNCIAS E A FIABILIDADE DOS MÉTODOS DE PESQUISA PARA VERIFICAR ESSAS TEORIAS

RESUMO

Sabedoria, incerteza, e ambiguidade sempre existirão nas decisões de gestão. Um perigo para empresas são gestores tomando decisões baseadas em teorias falhas adquiridas através de experiências pessoais ou aprendidas de experiências de outros. Muitas vezes, estas decisões não geram os resultados esperado e podem até colocar em risco o futuro das empresas. Gestores, para evitar este risco, precisam ficar mais sábios, mais perspicazes, e apropriadamente mais cépticos para com teorias pessoais ou teorias aprendidas de gurus de gestão que propõem formulas simplistas e soluções rápidas. Neste artigo, o autor discute o risco de decisões baseadas em teorias pessoais ou aprendidas de outros, os métodos de pesquisa usados para verificar essas teorias, as premissas filosóficas da pesquisa de gestão, as forças e fraquezas dos métodos de pesquisa quantitativas e qualitativas, os benefícios da combinação dos dois métodos, e a fiabilidade dos métodos de pesquisa em geral para verificar as teorias gestores usam nas suas decisões.

Palavras chave: Decisões de Gestão; Métodos de Pesquisas de Gestão; Risco de Teorias de Gestão Falhas; Sabedoria em Decisões de Gestão; Ambiguidade em Decisões de Gestão; Incerteza em Decisões de Gestão.

SABIDURÍA, INCERTIDUMBRE Y AMBIGÜEDAD EN DECISIONES GERENCIALES BASADAS EN TEORÍAS ADQUIRIDAS DE EXPERIENCIAS Y LA FIABILIDAD DE LOS MÉTODOS DE INVESTIGACIÓN PARA COMPROBAR ESTAS TEORÍAS

RESUMEN

Sabiduría, incertidumbre y ambigüedad siempre existirán en las decisiones de gestión. Un peligro para las empresas son gestores que toman decisiones basadas en teorías fallas adquiridas a través de experiencias personales o aprendidas de experiencias de otros. Muchas veces, estas decisiones no generan los resultados esperados y pueden incluso poner en riesgo el futuro de las empresas. Gestores, para evitar este riesgo, necesitan estar más sabios, más perspicaces, y apropiadamente más escépticos para con teorías personales o teorías aprendidas de los gurús de gestión que proponen fórmulas simplistas y soluciones rápidas. En este artículo, el autor analiza el riesgo de tomar decisiones basadas en teorías personales o aprendidas de otros, los métodos de investigación utilizados para comprobar estas teorías, las premisas filosóficas de la investigación de gestión, las fuerzas y debilidades de los métodos de investigación cuantitativos y cualitativos, los beneficios de la combinación de los dos métodos, y la fiabilidad de los métodos de investigación en general para comprobar las teorías gestores utilizan en sus decisiones.

Palabras clave: Decisiones de Gestión, Métodos de Investigación de Gestión; Riesgo de Teorías de Gestión Fallas; Sabiduría en lasDecisiones de Gestión; Ambigüedad en las Decisiones de Gestión; Incertidumbre en las Decisiones de Gestión.

Ronald Jean Degen[1]

[1] PhD at the International School of Management - ISM, Paris - France. E-mail: **rjdegen@gmail.com**

1 INTRODUCTION

In this paper, I discusses the risk of managers making decisions to solve problems or explore opportunities that may affect the future of firms based on theories acquired from personal experiences or learned from experiences of others, and the research methods used to substantiate these theories. The trustworthiness of the research methods used to substantiate theories will determine the wisdom, uncertainty, and ambiguity of management decisions based on these theories. Wisdom, in the context of management, is the ability to make effective decisions that are based on proven experiences that allow accurate predictions of the outcomes and risks of the decisions; uncertainty occurs when limited experiences do not allow accurate predictions of the outcomes and risks of the decisions; and ambiguity occurs when the experiences are vague, and the decision alternatives are difficult to define, making the outcomes and risks unpredictable.

Managers acquire knowledge of theories they use to make decisions through both direct and indirect business experiences. Direct experiences managers obtain through participation in decisions and their outcomes and risks; whereas indirect experiences they learn by studying other people's experiences with decisions in books, literature, courses, case studies, and consultants. Both direct and indirect experiences with decisions that substantiate theories managers use to make decisions provide the empirical evidence that are essential for verifying these theories. This is important, as theories need to be verified to enable decision makers to predict the outcomes and risks of their decisions with some degree of accuracy: the degree of accuracy is determined by the research methods that were used to substantiate the theories.

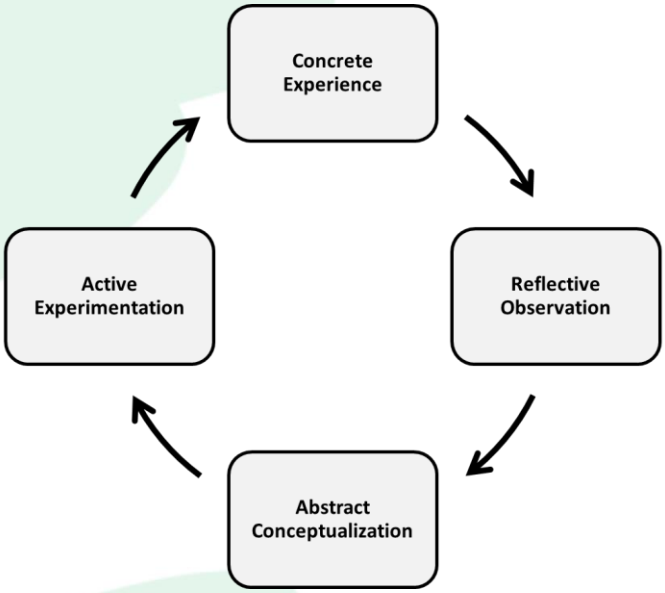
The use of theories by managers to make decisions that were not correctly substantiated, can constitute major business risks, and threaten the future of firms. Unfortunately, many managers incur in these decision-making risks by using their experience to create personal theories, or by accepting theories from management gurus or even academics without checking if they have been correctly substantiated. The consequences of the dissemination knowledge based on bad theories that have not been correctly substantiated constitute what Hayek (2008) called the *pretense of knowledge*.

In this paper, I discuss how theories base on experiences should be formed and substantiated to predict the outcomes and risks of management decisions. The discussion has the purpose of assist managers with distinguishing between good and bad theories. Furthermore, I discuss the research methods that are used to substantiate theories, and their applications and shortcomings.

Personal Experience

Most managers use knowledge acquired from their personal experiences with decisions to build their theories about decisions and the outcomes of decisions. Dewey (1997) identified these experiences as being the most important sources of knowledge. Drawing heavily on the work of Dewey, Kolb (1984) described the principle of knowledge acquisition through experience as what he called an *experiential learning cycle* (Figure 1). The cycle starts with living a *concrete experience* of doing something, followed by *reflective observation* on the experience (stepping back from the task and reviewing what has been done and experienced), before moving into the *abstract conceptualization* of the experience (interpreting the events and understanding the relationships between them), and finally *active experimentation* (considering how to put the new knowledge into practice).

Figure 1 - Kolb's experiential learning cycle (Adapted from Kolb, 1984, p. 76).



Managers use knowledge and theories that they have acquired from their personal experiences to make predictions as to what will happen next or to determine the actions that should be taken to refine or revise the way a task is to be handled. However, due to the pressure of day-to-day events, many managers do not take the time required for reflective observation and abstract conceptualization of their experiences. Thus, they fail to validate their experiences by interpreting the events involved in the experiences and to understand all the nuances of the relationships between them. They easily transform their experiences into personal knowledge and theories that guide their decisions. In many cases, these theories become paradigms that are followed by the entire firm.

Personal knowledge and theories that are acquired by experience - like all management knowledge and theories - must be constantly updated to take into consideration the continuous changes in the business world. Change is ever-present in the universe, as was acknowledged by the Greek philosopher Heraclitus, as far in the past as 500BC with the famous saying: "You could not step twice into the same river; for other waters are ever flowing on to you" (Heraclitus, 2001). The use of theories on decision-making that have been constructed by managers using the knowledge that they have acquired by personal experience represents a major risk for firms if these theories are not properly substantiated and updated as the business environment changes. Unfortunately, there are many instances where key managers have built personal theories based on successful experiences that became paradigms in their firms, such that the firms did not see the changes that made these theories obsolete.

A classic example is the case of the managers of the Swiss watch industry. Swiss firms invented the electronic watch in the 1960s, and because of their success with mechanical watches (at the time they represented 65% of the world market) the managers decided that the technology was not worth pursuing. Japanese companies picked up on the changes to electronic watch technology and took most of the watch market from the Swiss during the 1970s (Tajeddini & Trueman, 2008). The playwright and essayist Bernard Shaw advocates this need to continuously review situations and theories because of change. He wrote: "The only man who behaved sensibly was my tailor; he took my measure anew every time he saw me, while all the rest went on with their old measures and expected them to fit me" (cited by Cooper & Pamela, 2011, p. 268).

The same precaution must be taken with decision-making theories learned by studying other people's experiences with decisions in books, literature, courses, case studies, and consultants - the case of most young manager fresh out business schools. There are only very few experiences from others used in the construct of theories that are not affected by the fast-changing business world. Most

of past experiences used to construct theories tend to lose some their predictive value of outcome and risk with the changes. Consequently, the use of these theories by managers without verifying how they were substantiated represents unpredictable risks for firms.

The basic purpose of substantiating theories about decisions as acquired by managers over time through personal experiences or through other people's experiences is to illustrate the risk of the outcome being worse than planned. Wisdom in management decisions is obtained by using this additional knowledge about the risk embedded in theories to plan for the eventuality that outcomes do not happen as expected.

Decision-Making in Business

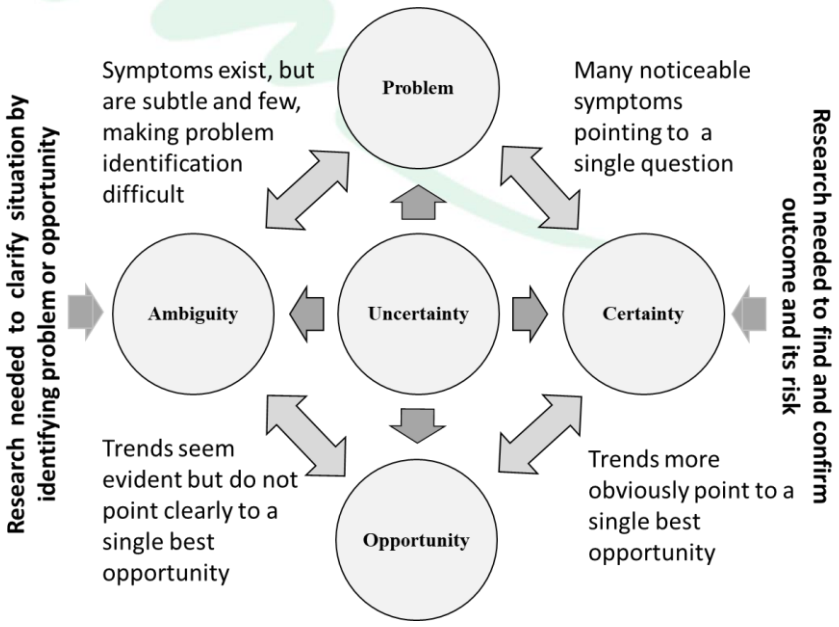
Drucker (2006), whose writings have contributed to the philosophical and practical foundations of the modern management, explained what it takes to make effective business decisions:

> Most books on decision-making tell the reader: "First find the facts." But executives who make effective decisions know that one starts with opinions. These are of course, nothing but untested hypotheses and as such worthless unless tested against reality. To determine what is a fact requires first a criterion of relevance, especially on the appropriate measurement. This is the hinge of the effective decision, and usually the most controversial aspect (p. 143).

In the dynamic and continuously changing world of today, managers are constantly faced with the need to make Drucker's effective decisions. They are responsible for making the right choice for the firm from among alternative ways of solving problems, or between possible business opportunities. Every decision they make can fall on a continuum from absolute ambiguity to complete certainty (Zikmund et al., 2013). For this reason, managers need to research in order to clarify the situation of both problems and opportunities: to determine the best decision and to understand (and possibly measure) the risk of the decisions not obtaining the expected outcome.

The research needed to make management decisions usual focuses on two key aspects: reducing the ambiguity of problems or opportunities, and determining the risk of the decision not solving the problems or misjudging the opportunities (Figure 2). Ambiguity is the greatest risk in management decisions. Without clarity about the problems or opportunities, the decisions needed to solve or explore them could misguided, and this would represent a major business risk for the firm.

Figure 2 - Describing decision-making situations for business problems or opportunities, the research needed to reduce ambiguity and determine the best decision, and the risk of not obtaining the expected outcome (Adapted from Zikmund et al., 2013, p. 51).



The use of theories about decisions acquired from experiences that have not been correctly understood and analyzed may induce managers to apply them to the wrong problem or opportunity. For this reason, it is important that managers clearly understand the nature of the problem or opportunity for which the theory was created. This involves correctly interpreting and understanding the events that occurred and the relationships between them, accessing if the circumstances in which these events occurred have changed over time, and reviewing the research method used to substantiate and determine the uncertainty (or the risk of not obtaining the expected outcome) of the theory before applying the theory to any situation. In this context, it is important to remember that change is inevitable and that only in very special circumstances do the events that occurred to substantiate the solution of a business problem or the trends for a business opportunity fail to change over time.

An example of how circumstances that substantiate a solution to a problem and the trends for an opportunity changed is the case of the QWERTY keyboard that was built-in with the Blackberry. This was optimized for thumbing (the use of only the thumbs to type). Users responded well to this keyboard for writing emails: to the extent that in 2009 the Blackberry had a global market share in smartphones of 20% (Statista, 2016, November 16). With the introduction and adoption of many new applications writing emails lost its central importance. For these new applications users of smartphones preferred wider screens that did not leave space for built-in keyboards. With this change, the Blackberry lost some of its appeals. The managers of RIM (the company that manufactured the Blackberry) were, however, blinded by their successful solution with the keyboard and did not see the change in user's preferences in time. As a result, the global market share of the Blackberry was reduced to practically zero in 2016 (Statista, 2016, November 16).

Understanding Theory

Theories acquired by managers from experiences are - like all abstractions - used in many different ways to include almost all descriptive statements about management phenomena. The Anglo-Austrian philosopher Popper (2002) expressed this elegantly: "Theories are nets cast to catch what we call 'the world': to rationalize, to explain, and to master it. We endeavor to make the mesh ever finer and finer" (p. 59).

A simple way to think of theories is to consider them as models of reality or simplifications that enable a better understanding of the logic and relationships among different factors (Zikmund et al., 2013). Theories are therefore formal testable explanations of events and include explanations of how some aspects relate to others. Zikmund et al. (2013) describe the basic building blocks of theories as:

- *Concepts*, which express (in words) various events and objects.
- *Propositions*, which are logical formal statements that assert some universal connections between concepts.
- *Hypotheses*, which are formal statements of unproven propositions that explain some outcomes that are empirically testable.
- *Empirical data*, which are the data used in the examination of hypotheses against reality in empirical testing.
- *Variables*, which includes anything that may assume different numerical values representing the empirical assessment of concepts.

Concepts and propositions occur at the level of abstraction, while hypotheses and variables operate at the empirical level.

Any analysis and substantiation of theories about business decision must start from the abstract nature of concepts and propositions, before moving to the empirical of hypotheses, variables, testing, and substantiating of hypotheses that constitute theories. An understanding of the concepts, propositions, hypotheses, and variables that were tested and substantiated is fundamental for the analysis of theories. Only by deeply understanding how the theories were built, tested, and substantiated can a manager determine the ambiguity and uncertainty of the theory.

Types of Business Research

The research required to analyze and substantiate management theories, and so reduce ambiguity and uncertainty in decision-making, was classified into three types by Zikmund, et al. (2013), on the basis of purpose:

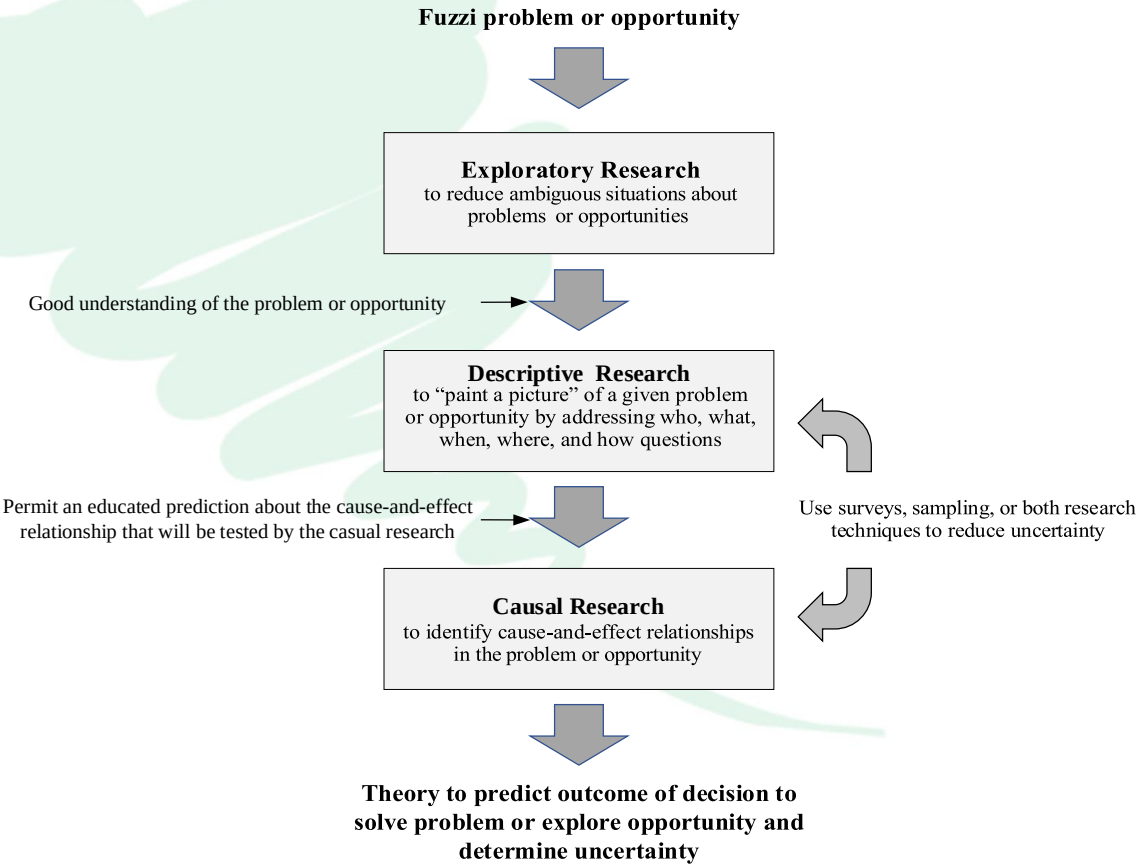
- *Exploratory research*, which is used to reduce ambiguous situations about business problems or opportunities.

- *Descriptive research*, which tries to "paint a picture" of a given problem or opportunity by addressing who, what, when, where, and how questions.
- *Causal research*, which tries to identify cause-and-effect relationships in problems or opportunities.

The process of matching of each type of research to the particular situation is important for obtaining useful results.

These different types of research often form the building blocks of research projects. For example, exploratory research reduces ambiguity about the problem or opportunity and builds the foundation for descriptive research, which usually establishes the basis for causal research (Figure 3). Thus, before starting causal research to establish how decisions about some things will affect other things that follow, it is important to start with exploratory research (to reduce ambiguity about the problem or opportunity being studied) and then use descriptive research to understand the problem or opportunity by painting a picture (or description) of the problem or opportunity by addressing the *who*, *what*, *when*, *where*, and *how* questions. The reduction of ambiguity (or rather, the clarification) obtained by exploratory research and the understanding of the problem or opportunity from descriptive research permits educated predictions about the cause-and-effect relationship, which will then be tested by the causal research.

Figure 3 - Types of business research to reduce ambiguity and uncertainty in theories about business decisions.



Both descriptive and causal research can be developed using one of or both of the following research techniques:

- *Survey*, which is the research technique in which a sample is interviewed in some form or the behavior of respondents is observed and described in some way.
- *Sampling*, which is the research technique that draws conclusions based on measurements of a portion of the population.

In business, the most common research technique is the survey, which is used by Gallup and other similar research organizations.

Philosophical Assumptions in Business Research

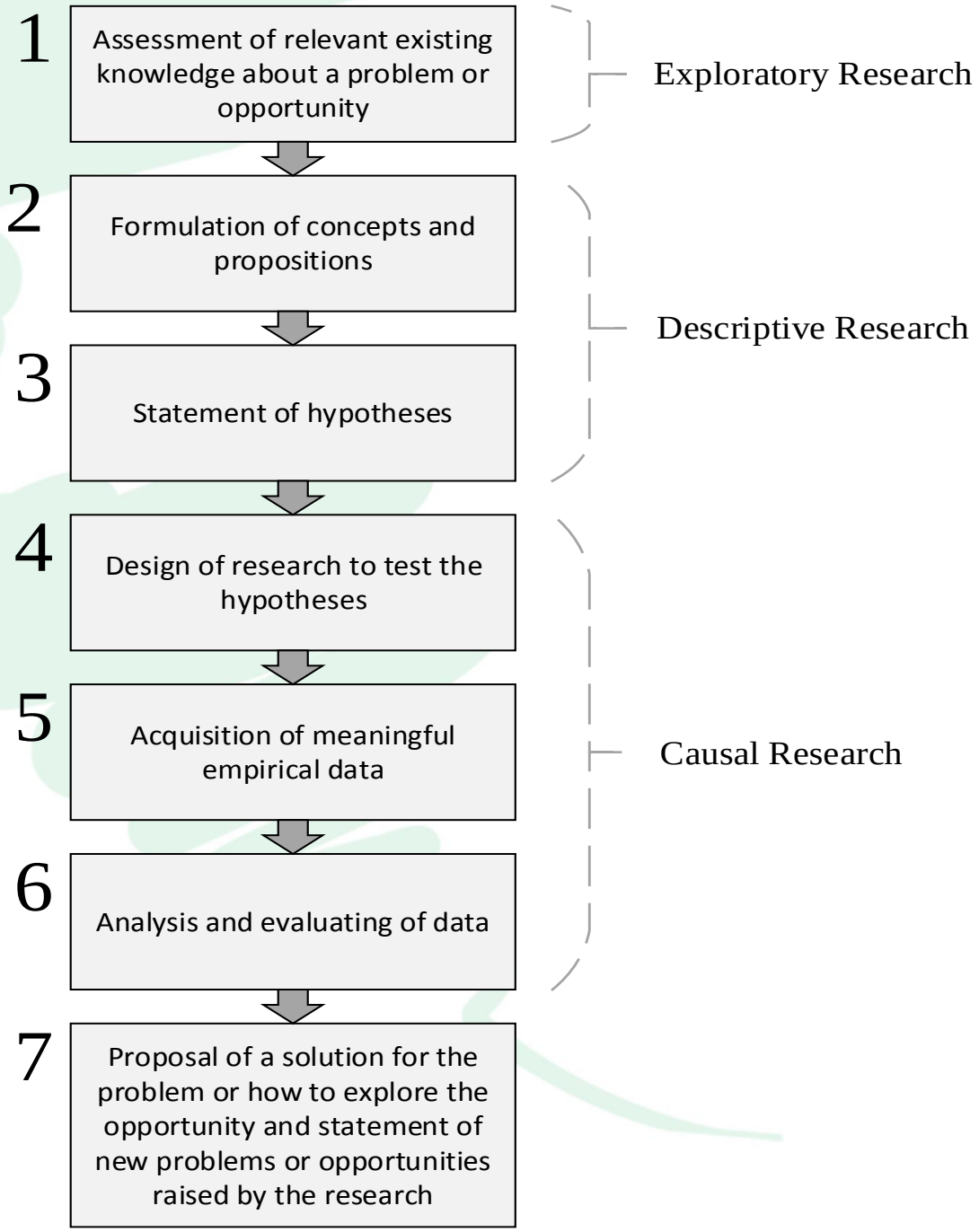
Before we describe the advantages and shortcomings of each method that is used in business research to substantiate decision theories, it is important to understand the basic philosophical assumptions as these are implied in their use. Creswell (2009) described two predominant philosophical assumptions used in business research. He called these worldviews:

1. *Post-positivism* is the deterministic philosophy in which causes will probably determine effects or outcomes. The term post-positivism represents the modern thinking that challenged the traditional positivist notion of absolute truth knowledge, by recognizing that there cannot be such absolute truth when studying the behavior and actions of humans. Thus, decision-making theories substantiated under the assumptions of post-positivism objectively analyze the causation of the outcomes of decisions. The causations are reduced into small discrete sets of ideas or variables that comprise the hypotheses. These are then tested to substantiate the decision-making theories.

2. *Social constructivism* is the philosophy that seeks to understand the world in which people live, work, interact, and develop subjective meanings of their experiences with certain objects and things. Thus, decision- making theories substantiated under the assumptions of social constructivism subjectively analyze the causation of outcomes. The analysis of causations must consider that people develop subjective meanings of their experiences. These meanings are varied and multiple: leading to a complex interaction of views. These have to be recorded and analyzed by interacting with the people directly, in to subjectively substantiate the decision-making theories.

The post-positivist assumption is also called the *scientific method*, and this incorporates the traditional form of research (Figure 4). On the other hand, the social constructivism assumptions incorporate the search for meanings and understandings that are constructed by researchers as they engage with the people they are interpreting.

Figure 4 - The seven steps for the scientific method and the appropriate research methods (Adapted from Zikmund et al., 2013, p. 44).



Cooper and Schindler (2012) explained that correct adherence to the procedures of the scientific method generates dependable research to support theories that can be used reliably for business decision-making. In contrast, poor research (research that is carelessly planned and/or conducted) will result in theories that cannot be used to reduce decision-making risk. They define nine characteristics of the scientific method that guarantee good research:

1. The purpose of the research is clearly defined to avoid ambiguity.
2. The research process is detailed so that other researchers can replicate it.
3. The research design is thoroughly planned to yield results that are as objective as possible by eliminating all biases of the researcher.
4. High ethical standards are applied.
5. Any limitations are frankly revealed, so that the decision-makers understand the uncertainties of the conclusions of the research.
6. Adequate analysis of the needs of decision-makers is included.
7. The findings that are presented should be unambiguous, comprehensive, reasonably presented, and easily understood by the decision- makers.
8. Any conclusions are justified for the conditions under which conditions they seem to be valid.
9. The researcher's experience is reflected on, to give confidence to decision-makers about the quality of the research and conclusions.

Research to substantiate theories that have correctly followed the scientific method and that was based on surveys, sampling, or both techniques will use quantitative, qualitative, or mixed methods (a combination or association of quantitative and qualitative methods). Each method has its advantages and shortcomings, and these must be considered when decision theories are substantiated. These advantages and shortcomings determine the degree of uncertainty about the theory and the outcome and risk it postulates.

Research conducted under the social constructivism assumption according to Creswell (2009) relies as much as possible on the participants' views on the situation being studied. The qualitative research questions become broad and general so that participants can construct the meaning of situations, typically forget in discussions and interaction with other persons (e.g., focus groups). The purpose is to understand what people say or do in their life settings. Often these subjective meanings are negotiated socially and historically. They are not simple imprinted on individuals but formed through interaction with others (hence social constructivism) and through historical and cultural norms that operate in individuals' lives. Researchers that conduct this type of research recognize that their own background shapes their interpretations, and they position themselves in the research to acknowledge how their interpretations flow from their personal, cultural, and historical experiences (Creswell, 2009).

Quantitative Research

The quantitative research attempts precise measurement of a particular phenomenon. For this approach, research objectives are addressed through an empirical assessment that involves numerical measurement and analysis. The most common applications of this approach in business - according to Cooper and Schindler (2012) - are the measurement of consumer behavior, knowledge, opinions, or attitudes to answer questions related to *how much*, *how often*, *how many*, *when*, and *who*. The predominant applications of quantitative research involve causal research to identify cause-and-effect relationships in problems and opportunities.

Theories substantiated under the post-positivist assumptions that follow the procedures of the scientific methods use predominantly quantitative research to measure the underlying concepts and propositions of the theories. This approach uses scales that either directly or indirectly provide numerical values. These values are then used in the mathematical and statistical analysis to test and validate the hypotheses that substantiate the theories.

Creswell (2009) explained that quantitative approaches dominated research in social sciences from the late 19th century up until the mid-20th century, and that the interest in qualitative research only increased during the late half of the 20th century, along with the development of mixed methods.

The excessive reliance of quantitative approaches on post-positivist assumptions, the procedures of the scientific method, and use of qualitative research to substantiate management decisions theories was strongly criticized by Ghostal (2005). He stated that this excessive reliance generated bad theories that formed what Hayek (2008) called the *pretense of knowledge*: that are ideas that destroy good management

practices. The basic building block in management - as in all social sciences - is an individual decision that is guided by some *intention* (Ghostal, 2005). The intention is a mental state of a particular individual making a decision and has no causal or functional explanation. Mental states (like ethics and morality) that influence decisions are excluded from theories that are substantiated by the scientific method, as this relies exclusively on qualitative research.

Hambrick (2005) agreed with Ghostal (2005) that the adoption of the scientific method by researchers to substantiate management theories in recent decades has led to what he called the *partialization of analysis* and the exclusion of any role for human intention. However, he disagreed with Ghostal that the pursuit of scientism has squeezed out any role of human choice: suggesting, for example, that decision-making biases deal expressly with choices.

Bennis and O'Toole (2005) were also strong critics of the excessive reliance on the scientific method in business schools. They suggested that business schools have adopted a model of science that uses abstract financial and economic analysis, statistical multiple regressions, and laboratory psychology. Although they conceded that some of the research produced is excellent; they noted because so little of it is grounded in actual business practices, the focus of graduate business education has become increasingly circumscribed and less and less relevant to practitioners. In their opinion, this scientific approach is predicated on the faulty assumption that business is an academic discipline like chemistry or geology. They argued that business is a profession, akin to medicine and the law, and business schools are professional schools (or should be). Like other professions, business calls upon the work of many academic disciplines. For medicine, those disciplines include biology, chemistry, and psychology; for business, they include mathematics, economics, psychology, philosophy, and sociology. The distinction between a profession and an academic discipline is crucial. In their view, no curricular reforms will work until the scientific model is replaced by a more appropriate model: one that is founded in the special requirements of a profession.

Hambrick (2007) similarly criticized the excessive devotion by academics in the management field to theory. He wrote:

> Many nice things can be said about theory. Theories help us organize our thoughts, generate coherent explanations, and improve our predictions. In short, theories help us achieve understanding. But theories are not ends in themselves, and members of the academic field of management should keep in mind that a blanket insistence on theory, or the requirement of an articulation of theory in everything we write, actually retards our ability to achieve our end: understanding. Our field's theory fetish, for instance, prevents the reporting of rich detail about interesting phenomena for which no theory yet exists. And it bans the reporting of facts - no matter how important or competently generated - that lack explanation, but that, once reported, might stimulate the search for an explanation.

Corley and Gioia (2011) extended the criticisms made by Hambrick to include reviewers of top-tier academic management journals for favoring pure theoretical contributions over more pragmatic and useful contributions.

Diamond (1999) complained that the image of science is often based on physics and a few other fields that use similar quantitative research methodologies. Scientists in those fields arguably tend to be ignorantly disdainful of fields in which these methodologies are inappropriate and which must, therefore, seek other methodologies like qualitative research. He noted that the word science means "knowledge" (from the Latin *scire*, "to know", and *scientia*, "knowledge"): the knowledge that can be obtained by whatever methods most appropriate to the particular field.

Qualitative Research

Cooper and Schindler (2012) suggested that qualitative research is used in attempts to understand how and why phenomena happen. Toward this end, users of this approach seek to describe, decode, translate, and otherwise come to terms with the meaning - not the frequency - of certain more or less naturally occurring phenomena in the social world. Quantitative research is suitable if the research objective is only to know what happened, or how often things happened. However, if the research objective is to determine the different meanings that people place on their experiences, this requires qualitative research. Qualitative research can delve more deeply into people's hidden interpretations, feelings, emotions, understandings, and motivations. Some examples of appropriate use of qualitative research for management decisions are presented in Figure 5.

Figure 5 - Some examples of appropriate use of qualitative research for management decisions (Cooper and Schindler, 2012. p. 162).

Decision Arena	Questions to be Answered
Job Analysis	· Does the current assignment of tasks generate the most productivity? · Does the advancement through different job levels incorporate the necessary training to foster the strongest performance?
Advertising Concept Development	· What image should we use to connect our target customers' motivations?
Productivity Enhancement	· What actions could we take to boost worker productivity without generating worker discontent?
New Product Development	· What would our current market think of a proposed product idea? · We need new products, but what should they be to take advantage of our existing customer perceived strengths? · Which product will create the greatest synergy with our existing products in terms of ROI and distribution partner growth?
Benefits Management	· Should our compensation plan be more flexible and customized? · How do employees perceive wellness prevention programs as compared to corrective health programs in terms of value?
Retail Design	· How do customers prefer to shop in our store? Do they shop with a defined purpose, or are they affected by other motives?
Process Understanding	· What steps are involved in clearing a wood floor? How is our product perceived or involved in this process?
Market Segmentation	· Why does one demographic or lifestyle group use our product more than another? · Who are our customers and how do they use our product to support their lifestyle? · What is the influence of culture on product choice?
Union Representation	· How do various departments perceive the current effort to unionize our plant? Where and what are the elements of discontent?
Sales Analysis	· Why have once-loyal customers stopped buying our service?

Techniques used in qualitative research at the data collection stage include focus groups, individual depth interviews, case studies, ethnography, grounded theory action research, and observation. The techniques used in the data analysis stage include content analysis of written or recorded materials dram from personal expressions by participants, behavioral observations, and debriefing of observers, as well as the study of artifacts and trace evidence from the physical environment. Generally, when the research objectives are not specific, the qualitative research technique will be more appropriate than quantitative research techniques.

Zikmund, et al. (2013) pointed out that data collection and data analysis is less structured and more researched dependent on qualitative research than it is in quantitative research. In qualitative research, the researcher must extract meaning from unstructured responses. These may include text from a recorded interview or a collage representing the meaning of some experience, such as skateboarding or using a smartphone. The researcher interprets the data to extract its meaning and converts it to information. For this reason, qualitative research is subjective: the results are researcher-dependent. Different researchers may reach different conclusions from the same experience. This means that qualitative research lacks intersubjective *certifiability* (the ability of different researchers following the seam research procedure produce the same results).

Tracy (2013) argued that the knowledge and background of researchers could literally serve as an instrument by absorbing, sifting through, and interpreting the world through observation, participation, and interviewing. This requires *self-reflexivity*, which is the careful consideration by the researcher of the ways in which past experiences, points of view, and roles impact his interactions

with the research. She explained that qualitative research is concerned with trying to make sense immersion in a context, whether at a management meeting, a consumer experience, or during an interview. Directly related to the idea of context is a *thick description*, wherein the researcher immerses in a culture, investigates the particular circumstances of the experiment, and only then moves toward grander statements and theories. As a result of this process, meaning cannot be divorced from the thick contextual description.

Criticism of the excessive reliance on the scientific method and quantitative research methods by academics prompted academic journals to encourage the submission of more qualitative research papers. One example is the prestigious *Academy of Management Journal*. Pratt (2009) wrote in an editorial for this periodical stating:

> Qualitative research is only one of the methods that are appropriate for our journal, but over the past several years we at AMJ have worked diligently to increase the number and quality of the qualitative research papers we review and publish (p. 817).

Other authors - including Savin-Baden and Mojor (2010), Migiro and Oseko (2010), Bluhm, et al. (2011), Hunt (2011), Bansal and Corley (2012), Sinkovics and Alfoldi (2012), and Tracy (2013) - encourage academic researchers to rely more on qualitative research methods by outlining its advantages and trustworthiness for academic research.

Combining Qualitative and Quantitative Research

The description of the key characteristic of qualitative and quantitative research methods by Zikmund, et al. (2013) and illustrated in Figure 6 explain the most common uses of each method in research projects to validate theories about business decisions. Most exploratory research that aims to reduce ambiguity about business problems and opportunities uses qualitative methods; most confirmatory research (this can either descriptively paint a picture of problems and opportunities or determine the cause-and-effect relationship in the problems and opportunities) uses quantitative methods.

Figure 6 - Use of qualitative and quantitative research (Zikmund, et al., 2013, p. 135)

Qualitative Research	Research Aspect	Quantitative Research
Discover ideas, used in exploratory research with general research objects	Common purpose	**Test hypotheses** of specific research questions
Observe and interpret	Approach	Measure and test
Unstructured, free-form	Data collection approach	Structured response categories provided
Researcher is intimately involved. **Results are subjective**	Researcher independence	Researcher uninvolved observer. **Results are objective**
Small samples – often in natural settings	Samples	Large samples to produce generalizable results (results that apply to other situations
Exploratory research design	Most often used	Descriptive and causal research designs

Zikmund, et al. (2013) suggested that a combination of qualitative and quantitative research methods is often used when researchers have limited experience or knowledge about research issues. When this occurs, exploratory research using qualitative methods is needed to develop a deeper understanding and develop the ideas that lead to the research hypotheses. Confirmatory research is then used to test these hypotheses with quantitative methods.

Strengths and Weaknesses of the Research Methods

Quantitative and qualitative research methods that are used to substantiate management decision theories are based on different philosophical assumptions about any research objective. Firestone (1987) identified that these philosophical assumptions can simultaneously represent their strengths and weaknesses,

depending on the significance of causation in the research objective.

Quantitative research under the assumptions of post-positivism follows the procedures of the scientific method. This accordingly portrays research objectives through an empirical assessment of numerical variables, which are used to measure and analyze objectively the causation. This is analysis is used to answer questions related to *how much*, *how often*, *how many*, *when*, and *who*. The strengths of quantitative research are its objective results, use of uninvolved researchers, and *intersubjective certifiability* (the ability of different researchers following the same research procedure produce the same results). The main weakness of this method is the partial analysis of the causation in the research objectives by excluding *verstehen* (any human intention or choice).

By contrast, qualitative research under the assumptions of social constructivism portrays research objectives through describing, decoding, translating, finding the meaning of or understanding (or *verstehen*) causation. This method is used to answer questions related *how* and *why* some phenomena happen. The strength of qualitative research lies in its ability to probe more deeply into people's hidden motivations, feelings, emotions, understanding, and interpretations. However, this strength is also the primary weakness of the method: the researcher extracts the meaning and interprets the causation based on his or her past experiences, points of view, and roles in the research. For this reason, the findings of the causation of phenomena by qualitative research are subjective, researcher dependent, and lack *intersubjective certifiability*.

Cusumano (2010) identified another weakness as the necessary limitation of the sample size due to the effort required by the researcher to probe deeply into each sample or case they are researching. As a result of this limitation, the specific cases may be unusual, and random chance may influence what the researcher sees. He explained that studies of cases have great value to generate ideas if selected carefully, but ultimately, they are only exploratory and illustrative. Small samples or cases studies do not bring certainty - at least, not statistical certainty - about what might represent an enduring principle or a best practice in management. With limited information, researchers often make assumptions about how an organization might have made decisions or behaved, and this can produce wrong conclusions about underlying causes.

Cusumano (2010) also pointed out that some best-selling management books, like *In Search of Excellence* (Peters & Waterman, 1982) and *Good to Great* (Collins, 2001) appear more rigorous than they really are: the findings are compromised because of problems in their samples, questions asked, and in lack of statistical control. This evaluation was shared by Rosenzweig (2007). Both authors also noted that the firms highlighted by these books to demonstrate their respective small set of management principles that were deemed fundamental to maintain superior performance did not do so well after the publication of the books. One common characteristic of the sets of principles in both books is that they are subjective, even both Peters and Waterman (1982), as well as Collins (2001), used a specific process to obtain their group of firms.

Cusumano (2010) suggested that the solution for future research is to extend beyond the ideas of these bestsellers through the use of more rigorous methods. He argued for a combination of qualitative and quantitative methods. Qualitative methods would first be used to improve the basic understanding of a problem, and based on this understanding metrics could be devised and data collected quantitatively. This data can be used to statistically analyze hypotheses that were based on theory or careful observation and then drill down through detailed case studies and intensive fieldwork to probe the phenomena in depth. The drawbacks of this type of approach are that it is time-consuming, and the researchers have to master the two very different skill sets of qualitative and quantitative approaches.

Trustworthiness of Research Methods

Much of the research that has been used to build and validated theories about management decisions raised as many questions as it answered. Cusumano (2010) identified a significant concern that what seems to work for one firm in one-time, industry, or national setting often does not work for other firms in different circumstances, or even for the same firm in another time period or a different industry. For this reason, managers need to form their own assessment as to which theories are potentially enduring for and applicable to their particular case and so are trustworthy; and which are tinted by particular circumstances or are simply just management fads.

Cusumano (2010) identified another problem wherein many different styles of research exist. Variations that include a selection of the research methods can lead to different insights and conclusions. Each style and research method has its strengths and weaknesses, but usually produces an incomplete picture of a given phenomenon.

Sometimes, the academic lens of one philosophical assumption used in business research - as criticized by Diamond (1999), Ghostal (2005), and Bennis and O'Toole (2005) - acts like a "silo" and obscures a broader view of what is really happening. This is not unlike the story of blind men touching and describing different parts of an elephant without realizing the entirety of what is before them.

Rosenzweig (2007) went further than Cusumano (2010) by pointing out that a common error in business research is to infer causality from statistical correlation. He illustrated his point by taking something as basic as the relationship between employee satisfaction and company performance. He noted that conventional logic suggests that satisfied employees ought to lead to high performance and that one possible measure of employee satisfaction is the rate of employee turnover. He then posited a circumstance wherein the researcher found a high correlation between the rate of turnover and firm performance. In this situation, the challenge is to untangle the direction of causality. Does lower employee turnover lead to higher performance? Perhaps, since a firm with a stable workforce might be able to provide more dependable customer service, spend less on hiring and training, and so forth. Or does higher performance lead to lower employee turnover? That could also be true since a profitable and growing firm might offer a more stimulating and rewarding environment as well as greater opportunity for advancement. Knowledge of the causal connection is essential if managers want to decide how much they should invest in greater levels of satisfaction versus other objectives.

Rosenzweig (2007) also identified what he called the *halo effect*. He described this as the tendency to make inferences about specific traits on the basis of a general impression. This is based on the fact that most people find it difficult to measure independently separate features, and that the common tendency is to blend them together in one general predominant impression. The best examples of the halo effect, according to Rosenzweig, is the relevant and tangible information about the financial performance of firms and the attribution people make about other things like leadership style, customer orientation or even organization effectiveness of firms that are less tangible and objective depending on the performance data. To corroborate this, he cited the case of Percy Barnevik of ABB and John Chambers of Cisco. When the financial performance of the firms was good, both CEOs and their companies were acclaimed by both the business press and academics as examples of outstanding leadership and efficient organizations; a few years later, when the financial performance of the firms declined, they became examples of bad leadership and inefficient organizations.

Rosenzweig (2010) considered that the bestsellers *In Search of Excellence* (Peters & Waterman, 1982) and *Good to Great* (Collins, 2001) represented nothing more than the descriptions of basic principles of good management and certainly did not represent - as both authors inferred - the secrets of business successes. He explained that the research conducted by the authors simply measured the halo effect of the firms inferred from their good financial performance. Many of the firms that were lauded in the two bestsellers for their management principles, declined, and a few even went out of business after the publication of the books. This indicates that there was no real cause and effect link between the management principles presented in the books and the outstanding financial performance of these firms. Instead, other factors, like those cited by Cusumano (2010) and presented at the beginning of this section, had a greater influence on the financial performance of these firms.

CONCLUSION

Wisdom, uncertainty, and ambiguity will always exist in management decisions. The danger for firms lies in the possibility for managers to make decisions based on faulty theories that were acquired through personal experience or learned from the experience of others, and that don't generate the expected outcome. These decisions may sometimes put the future of the firm at risk. For this reason, I have presented and discussed the types of business research, the philosophical assumption in business research, the strength and weaknesses of qualitative and quantitative research methods, the benefits of combining both methods, and the trustworthiness of research methods in general in substantiating management theories used by managers in decision making.

My purpose was to alert managers of the risk of making decisions that are based on theories that have not been substantiated or incorrectly substantiated. To avoid this risk, it is important that managers become wiser, more discerning, and more appropriately skeptical to simplistic formulas and quick- fix remedies (Rosenzweig, 2010).

In today's business world managers are constantly exposed to a multitude of business books and an overwhelming influx of articles from management gurus, journalists, and academics who describe the latest prescriptions of management principles for business success. These all claim that if managers follow their advice and implement

these principles the firms they manage will be enduringly successful. Managers must understand that there are no "magic silver bullets" to business success and learn to see through some of these delusions. Much of what appears in the business press, in academic research, and in recent bestsellers does not pass any serious validation test. The best approach managers can take is to follow the advice of Rosenzweig (2010) and focus on the basic elements that drive the performance of firms, while recognizing the fundamental uncertainty at the heart of the business world.

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