Leadership Decision Making and the Use of Data

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Intelligence gathering, or data collection, is a preliminary and critical stage of decision making. Two key approaches to intelligence gathering are "discovery" and "idea imposition." The discovery approach allows us to learn about possibilities by gathering intelligence in order to identify and weigh options. The idea imposition approach limits intelligence gathering and focuses resources on promoting a solution. The purpose of this study is to explore the intelligence-gathering stage of organizational leaders during decision making from both of these perspectives and to begin to identify themes as they relate to the data considered, types of decisions and outcomes sought, and level of confidence in decision-making success.

A critical role of organizational leaders is decision making. With this role comes pressure and risk, and the greater the consequences, the greater the pressure and the higher the risk. Hence, decision makers may find themselves caught between "analysis paralysis" and a rush to judgment (Guerra-López & Norris-Thomas, 2011). Classical mathematical probability decision theories would have us analyze, assess, calculate, predict, and do all sorts of analytical, rational, deliberate machinations before making decisions. However, this ideal process can be quite impractical in a fast-paced, competitive business world. At the other extreme, decision makers may rely more on their own judgment of their intelligence, power, and confidence than on the realities of the situation. The outcomes of such overconfident, evidence-void, snap decisions can be disastrous (Anderson & Kilduff, 2009; Campbell, Goodie, & Foster, 2004; Guerra-López & Norris-Thomas, 2011).

As supported by a number of studies, the credibility of the information is also critical to decision making (See, 2009; Stewart, Billings, & Stasser, 1998; Stewart & Stasser, 1995). Popular assumption is that decisions driven by data are by default better and that the use of data is straightforward. Often, people fail to acknowledge the different ways in which practitioners use and make sense of data to inform decisions and actions (Ikemoto & Marsh, 2007), as well as the varying quality of given data sets. Indeed, Ikemoto and Marsh (2007) found that in two studies they conducted (Marsh et al., 2005), participants reported that their decisions were uniformly data-driven. However, with further probing, the researchers found that participants meant very different things and used very different approaches.

Effective leaders must make decisions based on relevant, reliable, valid, and complete data, gathered through a sound investigative process that is aligned with desired, long-term outcomes and consequences and avoids

PERFORMANCE IMPROVEMENT QUARTERLY, 24(2) PP. 89–104

Published online in Wiley Online Library (wileyonlinelibrary.com). DOI: 10.1002/piq.20113

premature solutions (Guerra-López, 2007; Guerra-López & Norris-Thomas, 2011). The data that leaders use as input can vary significantly from highly qualitative perceptions (of self and others) to highly quantitative financial and production data.

Indeed, decision-making is said to be a process that begins with data collection, or intelligence gathering, followed by direction setting, alternative identification, solution selection, and implementation (Eisenhardt & Zbaracki, 1992; Mintzberg, Raisinghani, & Theoret, 1976; Nutt, 2007). Moreover, decision-making procedures appear to influence the choices made and the resulting consequences (Nutt, 2008; Vroom, 2000). Based on the work of Mintzberg and Westley (2001) and Mintzberg et al. (1976), Nutt (2008) distinguishes between a *discovery* approach and an *idea imposition* approach. A discovery approach, based on logical and political rationality, is a process of learning about possibilities by gathering intelligence, specifying desired results, uncovering ideas, evaluating options, and implementing the most beneficial option. In an idea imposition approach, which stresses pragmatics and making sense, decision makers limit their intelligence-gathering activities and focus resources to promote their initial idea. Moreover, the limited intelligence-gathering activities could potentially focus on gathering data that supports their initial ideas.

In his 2008 study, Nutt set out to identify the frequency of use and the success rates of discovery and idea imposition. The researcher found that a discovery approach was adopted more often than the idea imposition approach, but more importantly, he found that the discovery approach was far more effective and efficient than the idea imposition approach, even in cases of high urgency. However, the intelligence-gathering stage was not explored in depth, and thus relatively little is still known about the data considered in each of these approaches. Gaining a better understanding of the data leaders use in their decision-making approaches could ultimately provide guidelines for more balanced and effective data collection and inclusion in decision making. To this end, better understanding of contextual factors such as the type of decisions faced and the consequences sought should be considered.

The purpose of this study is to explore the intelligence-gathering stage of decision making from an idea imposition and discovery perspective, focusing on the data used to make decisions and leaders' confidence in the success of such decisions. The study's research questions are:

1. What type of decision-making approach do leaders adopt: idea imposition or discovery?
    a. What decisions do they face?
    b. What consequences do they seek?
2. What data are considered in the decision-making process?
    a. What data are considered in an idea imposition approach?
    b. What data are considered in a discovery approach?
3. How confident are leaders in the likely success of their decisions?
    a. How confident are leaders who used an idea imposition approach?
    b. How confident are leaders who used a discovery approach?

Method

This qualitative study consisted of semistructured telephone or in-person interviews with 22 organizational leaders, a sample admittedly drawn based on convenience, from various industries. Of the participants, 68% were male and 32% were female. Their leadership positions included president or chief executive officer (CEO), executive vice president, and chief financial officer (CFO), as well as owner, managing partner, and executive director. Basic demographic data for the interview participants are described in Table 1.

The interviews ranged from 30 to 45 minutes in duration. An interview protocol of six questions, based on a critical incident technique, was developed by the authors, who carefully reviewed and agreed on the meaning of each of the questions and the nature of the responses elicited by them. The interview protocol illustrating the specific questions asked is presented in Figure 1. Questions 1, 2, and 3 were designed to answer research question 1: What type of decision-making approach do leaders adopt? Question 4 was designed to answer research question 2: What data are considered in the decision-making process? Questions 5 and 6 of the protocol were intended to answer research question 3: How confident are leaders in the likely success of their decisions?

Validity and Reliability

While establishing validity in qualitative research can be problematic, Willig (2008) proposes that "reflexivity ensures that the research process as a whole is scrutinized throughout and that the researcher continuously reviews his or her role in the research. This discourages impositions of meaning by the researcher and thus promotes validity" (p. 16). This is in line with Lincoln and Guba's (1985) suggestion of establishing credibility through peer debriefing. The researchers engaged in careful reflection and discussion about their own biases, experiences, and beliefs throughout the research process, including the development of the research questions, the interviews, the analysis of the data, and the conclusions drawn.

Establishing reliability deals with accuracy of measurement. Shank (2006) recommends several methods for demonstrating reliability in qualitative research, such as asking for clarification and following up when unsure of certain facts. To ensure that data captured were accurate, data collection included follow-up questions and restatement of what the researchers heard. In some cases, the researchers asked follow-up questions when something was unclear; in other cases, when a response seemed contradictory, they restated what they previously heard to the respondent for confirmation. Moreover, the protocol included more than one question for both research questions 1 and 3, in efforts to better interpret, and to an extent triangulate, the responses provided.

Additionally, both researchers participated in the first two initial interviews, with one taking the lead and the other listening. The purpose of this approach was not only to standardize the interview process as much as

TABLE 1 PARTICIPANT DEMOGRAPHICS

GENDER		POSITION		INDUSTRY		SIZE	
Male	15	Owner	6	Health care	4	Small (0–199 employees)	17
Female	7	Managing partner	4	Professional and business services	4	Medium (200–700 employees)	4
		President	2	Manufacturing	2	Large (more than 700 employees)	1
		Executive vice president	2	Education	2		
		Chief financial officer	1	Law	1		
		Executive director	7	Nonprofit	3		
				Wholesale and retail trade	1		
				Information	1		
				Construction	1		
				Government	1		
				Other services	2		

possible (and thereby improving inter-rater reliability), but also to establish face-validity of the interview protocol and make any necessary adjustments to the questions. Questions appeared to be clear to respondents, and no clarification was sought by them. Their response directly addressed the purpose of the questions. The remainder of the sample was equally divided between the two researchers, who conducted the interviews individually.

Analysis

While the approach to data collection and the actual data collected were qualitative, the data were analyzed both qualitatively and quantitatively. Detailed notes were taken from each interview and were later reviewed and analyzed jointly by both researchers. A coding approach (Miles & Huberman, 1994) was taken to uncover key themes and trends, which were later counted and presented in data tables.

For the first research question, Nutt's (2008) decision-making approach was used as the basis for two pre-established themes: (1) discovery and (2) idea imposition. Decisions were classified as *discovery* if the decision maker started out with an objective or a need and their data collection was open to multiple courses of action. Decisions were classified as *idea imposition* if the participant started out with a potential course of action or plan and focused

Interview Protocol

Introduction

We are conducting a study about decision-making approaches and the data used to make decisions, with the purpose of better understanding leadership approaches to decision making and the data most commonly used.

The information you share with me is confidential and will not be used to identify you individually; rather, it will be analyzed along with the responses of others in order to identify major themes.

Participation is strictly voluntary and you may withdraw at any time.

Thank you in advance for your time and cooperation. Do you have any questions before we begin?

Questions

Please recall a recent organizational decision that stands out in your mind, and which had the potential for high impact on the organization (e.g., a group of people, a department, the future of the organization, etc.). Perhaps the anticipation of the decisions brought on stress, though the situation was not at crisis level. Please focus on this one particular situation to answer the six questions I will ask.

1. What decisions were you faced with and how did the decision point come about? That is, how did you realize a decision had to be made?
2. Did you have specific consequences you were seeking to get with this decision?
3. How did you go about making that decision? What specific steps did you take?
4. What specific data did you consider and why? How did you evaluate the merit of that data?
5. In hindsight, what other piece of data do you wish you would have also considered and why?
6. What do you believe to be the outcome of that decision? In your view, is that a positive outcome (for example, did you get the results you anticipated?)?

Closing

Thank you for sharing your time and your input.

FIGURE 1. INTERVIEW PROTOCOL

their data collection on this one course of action. Data were then reviewed for protocol questions 1, 2, and 3 and discussed by both researchers in the context of each of the two key themes. Complete consensus had to be reached in order to categorize a respondent's approach as either discovery or idea imposition. Complete consensus was reached for all 22 cases.

For the second research question, no themes were imposed on the data; rather, the researchers reviewed the data and looked for naturally occurring themes, which are presented in the findings section. Finally, to answer the third research question, responses to protocol questions 5 and 6 were reviewed carefully by the researchers to once again find natural occurring themes.

Limitations

This study has several inherent limitations. First, the sample was drawn based on convenience, which limits the ability of the researchers to determine the extent to which the results represent the target population. Second, the sample size is relatively small, and while this is not unusual for qualitative studies due to the time-consuming and labor intensive nature of this approach (Willig, 2008), it limits the ability to generalize the results to other leaders. However, since the researchers are attempting to primarily describe a particular group in an exploratory way, rather than to infer or claim generalizability at this stage of this particular line of research, the results can still provide insight into the intelligence gathering stage of the decision-making process and inform future research.

Findings

The following section presents the study findings, arranged by research question.

What Decision-Making Approach Do Leaders Adopt?

Of the 22 cases, 14 (64%) adopted an idea imposition approach—the starting points for these decisions were focused on a specific course of action, for example, "Should we implement a new design and sales process?" This fit into the idea imposition category because a new design and sales process constituted a solution to a problem or need that had not yet been clearly defined. Similarly, another respondent's decision consisted of whether to outsource to a third party, without much information about the core problem or need that was leading the respondent's company to select outsourcing as a solution. Not only did these respondents begin with a solution in mind, but no other alternatives were considered. This was typical of decisions categorized under the idea imposition approach.

The remaining 8 (36%) of the 22 cases adopted a discovery approach. Typical starting points for these decisions included "How do we meet revenue targets?", "What do we do about outgrowing our current facilities?" and "What do we do about our increasing costs?" These cases fit into a discovery approach because the decision maker started with a clear need or problem and sought to address it, rather than to implement a specific solution that had already been proposed.

Research Question 1a. What Decisions Do They Face? From protocol question 1, analysis revealed natural themes or types of decisions. Categories included (1) organizational, (2) financial, (3) personnel, and (4) infrastructure initiatives, which are further defined in the Specific Theme column in Table 2. This table also illustrates that the largest differences were found between organizational and financial themes, with 8 of the 14 (57%) idea-imposition cases and none of the discovery cases focusing on organizational initiatives. These findings seem to be consistent with the inherent definitions of each of the approaches, as an idea imposition decision-making approach is characterized by beginning with a specific solution in mind. Conversely, 5 of the 8 (63%) discovery cases and only 1 of 14 (7%) idea imposition cases focused on financial decisions. Once again, this seems consistent with the nature of these approaches, as the discovery cases conceptualized their decisions from the standpoint of specific needs. There were more equitable distributions among the personnel and infrastructure themes. Four out of fourteen (29%) idea imposition and two out of eight (25%) discovery cases focused on a personnel theme, while one out of seven (14%) idea imposition and one out of eight (12.5%) discovery cases focused on an infrastructure theme.

Research Question 1b. What Consequences Do They Seek? While research question 1a focuses on decision themes, question 1b focuses on the consequences or expected results of such decisions. Analysis of the kinds

TABLE 2 DECISION THEMES

GENERAL THEME	SPECIFIC THEMES	IDEA IMPOSITION	DISCOVERY	TOTAL
Organizational Initiatives (8)	Diversification into a new business (3), Merger (1), Creation of new corporate culture (1), Outsourcing (1), Increasing customer base (1), Core process redesign (1)	8 (57%)	0	8 (36.5%)
Financial	Improving cash flow/revenue and/or decreasing costs (6)	1 (7%)	5 (62.5%)	6 (27%)
Personnel	Hiring/firing (6)	4 (29%)	2 (25%)	6 (27%)
Infrastructure	Moving/opening new locations (2)	1 (7%)	1 (12.5%)	2 (9.5%)
Total		14 (100%)	8 (100%)	22 (100%)

of consequences respondents were seeking or expecting revealed the following categories:

- *Financial:* Consequences related to specific financial ends (e.g., increasing revenue and profits/reducing costs; moving from one financial model to another; surviving hard financial times).
- *Personnel:* Consequences related to ensuring that the organization could count on competent employees (e.g., recruiting, retaining, training, motivating, dismissing).
- *Customers:* Consequences related to a customer focus (e.g., improving organizations' image among current/potential customers; improving customer service/value; increasing customer base).
- *Infrastructure:* Consequences related to enhancing the physical or cultural structure of the organization (e.g., systems, space, buildings, practices, procedures).

Half of the participants considered only one type of consequence, while the other half considered at least two and in some cases three types of consequences. None of the participants considered all four consequence themes. Financial consequences were the most common theme among both idea imposition cases (71%), and discovery approach cases (75%). Personnel consequences were more sought after by discovery approach cases (50%) than by idea imposition cases (36%). Consequences relating to customers were more frequently sought by idea imposition cases (36%) than discovery cases (13%). Finally, consequences relating to specific infrastructure issues were also more common among idea imposition cases (43%) than discovery cases (25%).

It does not seem surprising that most decision makers expect some financial consequences from their decisions, as fiscal responsibility is a reality in both private and public sectors. An interesting finding is the relatively low

TABLE 3 EXPECTED CONSEQUENCES

CONSEQUENCE THEMES	IDEA IMPOSITION	DISCOVERY	TOTAL
Financial	10 (71%)	6 (75%)	16 (73%)
Personnel	5 (36%)	4 (50%)	9 (41%)
Customers	5 (36%)	1 (13%)	6 (27%)
Infrastructure	6 (43%)	2 (25%)	8 (36%)
Total number of consequences	26	13	39

Leaders who used a discovery process were more satisfied with the data collection process and expressed more confidence in the likely success of their decisions.

expectation of customer-related consequences from the discovery approach cases. Meanwhile, almost half of idea imposition cases considered consequences related to infrastructure, which would seem to make sense in light of their relatively high focus on organizational initiatives.

Table 3 presents the number of participants who considered each consequence, further subdivided by decision-making approach. Since many participants expected more than one type of consequence, the columns are not cumulative.

Research Question 2. What Data Are Considered in the Decision-Making Process?

Analysis of this question revealed that the data considered by respondents fit into the following general categories:

- *Financial data:* These included data such as revenue, sales, variable and fixed costs, and cash flow.
- *Nonfinancial extant data:* These were quantifiable data not expressed in financial terms and included things such as: productivity figures, occupancy rates, achievement tests, performance ratings, and customer satisfaction scores.
- *Competitor/market trends:* These were data about competitor practices and market tendencies that included: business models, competitor policies, hours of operation, specific consumer behaviors, and market demographics.
- *Opinions:* These included opinions of trusted experts or authorities, colleagues, employees, and customers.
- *Observation/judgment of human factors/traits:* These data were not documented or quantified, but instead relied on the respondents' observation or judgment of others' behavior, attitudes, potential, and motives.
- *Gut instinct:* These were undocumented "hunches" of respondents, sometimes based on past experience and sometimes based purely on emotion.

A further categorization scheme could be used to define *quantitative data* as the combination of financial data, nonfinancial extant data, and competitor/market trends, and *qualitative data* as the combination of opinions, observations/judgments, and gut instinct. In most instances (86%), respondents considered more than one category of data.

Research Question 2a. What Data Are Considered in an Idea Imposition Approach? Leaders who used an idea imposition approach relied most on financial data, nonfinancial extant data, and the opinions of various advisors while making decisions. Financial data were used by 79% of idea imposition decision makers to make their decision. Nonfinancial extant data were used by 50% of the idea imposition decision makers, and 43% relied on the opinions of advisors. Idea imposition decision makers also relied on observation and the judgment of human factors (36%) and on competitor and market trend data (29%). Three of the fourteen idea imposition decision makers (21%) relied on their own gut instinct.

Research Question 2b. What Data Are Considered in a Discovery Approach? Like the idea imposition group, leaders who used the discovery approach to decision making also relied heavily on financial data, nonfinancial extant data, and the opinions of trusted advisors. However, they used data about competitor and market trends more than the idea imposition group. Financial data were considered by 75% of the discovery group; 63% considered nonfinancial extant data, as well as the opinions of advisors. Competitors and market trends were examined by 50% of the discovery decision makers. Three of the eight discovery approach decision makers (28%) considered observation/judgment of human factors. Only one discovery decision maker considered his or her own gut instinct.

In sum, the most common type of data used by decision makers was financial (77%). Next, 55% of participants used nonfinancial extant data while 50% counted on the opinions of a variety of advisors. Of the total participants, 36% used competitor/market trends and the observation/judgment of human factors/traits. Overall, 18% of decision makers reported using gut instinct to make decisions. Table 4 provides a side-by-side comparison of the data considered by idea imposition decision makers and discovery-oriented decision makers.

Research Question 3. How Confident Are Leaders in the Likely Success of Their Decisions?

To answer this research question, responses for protocol questions 5 and 6 were analyzed. While question 5 asked "In hindsight, what other piece of data do you wish you would have considered?", participants also took the opportunity to indicate what they would change about the decision-making process in general.

Analysis revealed participants' reflections on the quantity and quality of data that they considered. Half of the participants (50%) indicated that they would change something about the data collection process, including: seeking additional data, analyzing the existing data differently, changing

TABLE 4 TYPES OF DATA BY DECISION-MAKING APPROACH

TYPE OF DATA CONSIDERED	IDEA IMPOSITION *N* = 14	DISCOVERY *N* = 8	TOTAL *N* = 22
Financial data	11 (79%)	6 (75%)	17 (77%)
Nonfinancial extant data	7 (50%)	5 (63%)	12 (55%)
Competitor/market trends	4 (29%)	4 (50%)	8 (36%)
Opinions	6 (43%)	5 (63%)	11 (50%)
Observation/judgment of human factors/traits	5 (36%)	3 (28%)	8 (36%)
Gut instinct	3 (21%)	1 (13%)	4 (18%)

TABLE 5 DECISION-MAKING PROCESS CHANGES IN HINDSIGHT

CHANGES	IDEA IMPOSITION	DISCOVERY	TOTAL
Would seek more personal expertise	1 (7%)	0	1 (7%)
Would seek additional data	4 (29%)	2 (25%)	6 (26%)
Would attempt to forecast future business climate	2 (14%)	0	2 (9%)
Would analyze data differently	2 (14%)	0	2 (9%)
Would not change data collection in any way	3 (22%)	5 (62.5%)	8 (36%)
No response	2 (14%)	1 (12.5%)	3 (14%)
Total	14	8	22 (100%)

their own level of expertise, and making an attempt to forecast the future business climate. Thirty-six percent of respondents indicated that they felt that they had considered all of the relevant data before making a decision. Table 5 illustrates participants' reflections in hindsight.

Protocol question 6 addressed participants' perceived outcomes, and analysis revealed the following categories:

- *Positive financial outcomes:* The implementation of the decision led to: increased revenue, increased profit, positive cash flow, positive growth, and more efficient use of financial resources.
- *Positive employee outcomes:* The implementation of the decision led to: hiring the right person for the job, the ability to get more done with fewer resources, and an improved work climate. In addition, it demonstrated leadership's commitment to employees, got people to feel like they were part of a team, allowed an organization to hire talented personnel, and improved morale.
- *Positive customer outcomes:* The implementation of the decision led to: improved customer service, better understanding of services on the part of customers, and an increase in the number of clients.
- *Negative employee outcomes:* The implementation of the decision led to: a deterioration in employee relationships, the need to get staff development assistance, laying off the wrong people, or loss of morale.

- *Neutral outcomes:* The decision was "net neutral" or caused the organization to continue business-as-usual.

Overall, 50% of the participants indicated that they experienced positive financial outcomes as a result of the decision. None of the participants experienced negative financial consequences. Positive employee outcomes were reported by 36% of the participants, while only 8% experienced positive customer outcomes. Table 6 presents a summary of the perceived outcomes. Some participants experienced both positive and negative outcomes from the same decision. For example, one participant expressed the negative outcome of a loss of morale after the firing of a well-liked employee; however, the participant also identified the opportunity to hire a more talented employee as a positive outcome.

Based on the responses that participants gave to the questions regarding their perception of the data in hindsight and their perception of the outcome of the decision, an assessment was made of the decision maker's overall confidence in the likely success of his or her decision.

Researchers devised a confidence scale that ranged from +2 to −2. If, for example, a participant said "this is the best thing we've ever done" or "one person is delivering results with more efficiency than two people did before" they received a +2 rating. If a participant expressed mild optimism, such as "it seems to have provided some relief from our problem," then they were assigned a +1 rating. If the outcome was still to be determined, or considered "net neutral," they were assigned a 0 rating. If participants expressed mild pessimism about the outcome, such as "this may end up costing us more than we expected," they were assigned a −1 rating. Finally, if a participant expressed extreme pessimism about a decision, such as "I never dreamed that this decision would turn out this badly," they received a −2 rating.

Fifty-nine percent of participants were very or somewhat confident that the decision was successful. Only one participant felt that the decision had been a big mistake. The remaining 36% of participants felt that the outcome of the decision was either neutral or slightly negative. Table 7 summarizes these results.

TABLE 6 PERCEIVED OUTCOMES

PERCEIVED OUTCOME	IDEA IMPOSITION	DISCOVERY	PARTICIPANTS
Positive financial outcomes	5 (36%)	6 (75%)	11 (50%)
Positive employee outcomes	4 (18%)	4 (50%)	8 (36%)
Positive customer outcomes	1 (7%)	1 (13%)	2 (8%)
Negative employee outcomes	4 (29%)	0	4 (18%)
Neutral outcomes	2 (14%)	0	2 (8%)
Outcome still to be determined	3 (21%)	1 (13%)	4 (18%)

Research Question 3a. How Confident Are Leaders Who Used an Idea Imposition Approach? Decision makers who used an idea imposition approach were evenly divided across the confidence spectrum regarding the likely success of their decision. All of the people in the study who expressed mild to definite pessimism about the success of their decision used an idea imposition approach.

While some might hold the idea that being decisive is a hallmark of success, research supports the idea that careful consideration of needs and desired results as the guiding force of a search will lead to better results.

Research Question 3b. How Confident Are Leaders Who Used a Discovery Approach? Decision makers who used a discovery approach ranged from very confident to neutral about their decision. Of the participants who used the discovery approach, 63% expressed a very high level of confidence in the likely success of the decision. None of the participants who used a discovery approach were mildly or very pessimistic about the likely outcome. Table 7 summarizes these findings.

Discussion

The results of this study provide several valuable insights for leadership decision makers and for performance improvement practitioners. Nutt (2008) found that a discovery approach to decision making was more effective and efficient than an idea imposition approach. This study suggests that leaders who used a discovery process were more satisfied with the data collection process and expressed more confidence in the likely success of their decisions. While similar percentages of respondents indicated that they should have sought additional data, the idea imposition decision makers expressed other forms of dissatisfaction about the data collection process, including a desire for more personal expertise, a need to try to forecast the future business climate, and a desire to analyze the collected data differently. None of the discovery decision makers were pessimistic about the outcome

TABLE 7 CONFIDENCE LEVEL

CONFIDENCE LEVEL	IDEA IMPOSITION	DISCOVERY	TOTAL
Very confident	3 (21%)	5 (63%)	8 (36%)
Somewhat confident	3 (21%)	2 (25%)	5 (23%)
Neutral	4 (29%)	1 (13%)	5 (23%)
Somewhat pessimistic	3 (21%)	0	3 (14%)
Very pessimistic	1 (7%)	0	1 (5%)
Total	14	8	22 (100%)

of the decision, while almost 30% of the idea imposition decision makers expressed some level of pessimism.

One key purpose of this study was an examination of the types of data that decision makers used during the decision-making process. Since decision makers who use an idea imposition approach examine a solution in order to make sense of their needs (Nutt, 2008), it might be expected that they would consider less data than leaders who use a discovery approach. However, this study indicated that they relied on different, rather than less, data than their discovery decision-maker counterparts. Both groups relied heavily on financial data to help in the decision-making process. It is interesting to note that while almost 80% of idea imposition decision makers relied on financial data to make their decisions, only one of the idea imposition decisions was actually a decision about a financial issue. The idea imposition leaders relied less on nonfinancial extant data, competitor/market trends, and the opinions of advisors than their discovery counterparts. However, they relied more on their own observation of human factors/traits and on their gut instincts than discovery decision makers. This suggests that idea imposition decision makers tend to narrow their scope to hard numbers and their own judgment, while discovery decision makers tend to consider a variety of sources perceived as reliable. By refraining from making a decision until these sources have been examined, they rely less on their own judgment and gut instinct.

Relying on less gut instinct would appear to be beneficial to decision making, based on Nutt's (2007) findings that decisions made based on gut instinct are less effective than those made based on documented performance gaps. Decisions made based on documented performance gaps were also found to be superior to decisions made by asking for others' opinions. It is important to clarify that Nutt's (2007) findings were not suggesting that opinions were not important as a source of data, rather the point is that opinions alone were perhaps insufficient, and certainly less effective, than documented performance data, which might include perceptions or opinions in addition to other quantifiable performance data.

This study suggests several guidelines for decision makers. While some might hold the idea that being decisive is a hallmark of success, research supports the idea that careful consideration of needs and desired results as the guiding force of a search will lead to better results. The discovery process uses the basic tenets of the performance improvement field by being systemic and systematic. With a discovery approach, performance gaps can be identified as part of the decision-making process rather than after a solution has been identified, as is often the case when a decision maker is using an idea imposition approach.

Performance improvement practitioners can learn to recognize the decision making approach favored by their clients. If the client begins with a solution in mind, it is likely that they will adopt an idea imposition approach. In this case, the practitioner should be prepared to educate the client about the relative merits and risks of each approach, as well as the benefits of considering a variety of data, including nonfinancial extant data, competitors, market trends, and trusted advisor opinions in addition to financial data,

personal judgment, and gut instinct. The use of a discovery approach in conjunction with a wide variety of relevant data is likely to increase decisions success, as well as the decision maker's confidence in the outcome of the decision.

This qualitative study was preliminary and exploratory in nature. It leads to several opportunities for future research. The study should be replicated with a larger sample to confirm and expand the findings. With higher confidence in the found patterns, research could integrate quantitative and inferential approaches that would allow for generalizablity to the wider populations. These researchers would like to conduct a follow-up study with the current participants to determine actual decision-making success, based on pre-established criteria. The pre-established criteria would standardize the definition of decisions success and reduce the inherent bias in participant beliefs about the success of their decisions. In addition, it would be useful to consider a range of supporting data and data sources beyond participant perceptions.

Conclusion

Organizational leaders are expected to make sound decisions in a variety of settings and under varying degrees of conditions. This qualitative study was intended to provide insight into the intelligence-gathering stage taken by organizational leaders during decision making from both a discovery and an idea-imposition approach, and to begin to identify themes as they relate to data considered, types of decisions and outcomes sought, and level of confidence in decision-making success. The researchers found that leaders who used a discovery approach to decision making relied more often on a wider variety of data than leaders who used an idea imposition approach. While both decision-making approaches used financial data most often as part of the decision-making process, regardless of the theme of the decision itself, the study showed that leaders who used the idea imposition approach were more likely to use their own judgment, observation, and gut instinct than those who used a discovery approach. Discovery decision makers tended to consider nonfinancial extant data, market trends, information about competitors, and the opinions of advisors and experts to make their decisions.

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