Trust, Organizational Decision-Making, and Data Analytics:
An Exploratory Study

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ABSTRACT

The use of data analytics of all kinds is making inroads into almost all industries. There are many studies that explore the usefulness and organizational benefits of these tools. However, there has been relatively little attention paid to the other issues that accompany the implementation of these tools, namely the level of trust felt by the consumers of the information products of these tools and the changes in decision-making caused by the introduction of data analytics. It is important that the level of trust these decision-makers have in their analytics tools be understood as that will have great impact on how these tools will be used and how the firm will use them to build value. This study examines the level of trust organizations have in their analytics tools and how these tools have changed their decision-making processes. This study will add to the broad understanding of how and where data analytics tools fit into the data-driven organization.

KEYWORDS

INTRODUCTION

The use of some form of data analytics has become commonplace in a growing list of industries around the world. While the manner of application, the specific tool used, and the very definition of data analytics varies widely across firms, industries, and countries, there are a few common themes that deserve investigation. Within some tolerance for individual interpretation, the underlying reason for employing these tools is to help the organization make better, faster, and less expensive decisions (Davenport, 2013). However, even though these decisions are supported by sophisticated technology, the underlying core ingredients of decision-making must still be in place: suitable information and appropriate knowledge. The information being made available by analytics tools is increasing in sophistication, relevance, and depth very rapidly. Likewise, the knowledge to make decisions is becoming more abundant in both the human decision-makers and, in an increasing number of cases, in the software being implemented to take over the decision-making task. Disruptive changes such as these will likely be met with concomitant organizational reactions, and it is these reactions that this paper seeks to understand.

One of the most important, but somewhat understudied, characteristics of the information used by decision-makers is that it be trusted (Söllner, Hoffman, & Leimeister, 2016; Bruneel, Spithoven, & Clarysse, 2017). Trust can be defined as "the subjective expression of one actor's expectations regarding the behavior of another actor" (Baba, 1999). The evaluation of information as a trustee (with the organization as trustor) might refer to its accuracy, its validity, its provenance, or any other

aspect of the information or its creation that an information consumer might find important. Up until the recent past, information was provided through a relatively easy to understand process that was, if not completely transparent, understandable to the typical manager or decision-maker. This basic understanding of how the data were collected, processed into information, and presented for use is what enabled the information consumers to trust the data enough to use in making decisions. However, the increasing use of externally sourced data, remote or contract information systems (IS) support, and other factors that muddy the provenance of the information has served to reduce the trust placed in the information available. The introduction of tools like predictive and prescriptive analytics and the proliferation of data analysts who create the models have created even more distance between the information and its user. This study explores the impact this changing information environment has on the trust that managers place in the information they consume.

Just as there is no single definition of data analytics, there is no single definition of a data analytics tool. In this study, the concept of a data analytics tool is necessarily broad because the variety of data analytics tools used by the firms in this study is very broad. Some are using very advanced prescriptive decision-support and decision-making tools, as in the case of the financial services firm, and some are using only entry-level data visualization tools, such as the university. And, some are using a broad mix of tools across the analytics spectrum, such as the insurance firm and healthcare organization. Therefore, the term "data analytics tools" will be used to represent the spectrum of tools in use at a specific organization. It will be left to further research to make an analysis of the issue of trust in terms of specific classes of analytics tools.

Some authors consider trusted information to be an essential input to the decision-making process (Browne, 1993). As such, the level of trust given to analytics-derived information leads into the second goal of this research, to determine if the implementation of analytics tools has changed the manner in which organizations make decisions. This is very broad, since the concept of changes in the decision-making processes might include the actual analyses performed, the location in the organization in which the decisions are made, or even the type of decision being addressed. In fact, it could encompass a combination of all three characteristics, or more. As this is an exploratory study, part of the results will be to determine which of these decision-making characteristics are affected by analytics and in what manner.

LITERATURE REVIEW

There is a large body of literature surrounding both the issue of trust (Pirson, Martin, & Parmar, 2017; Huang & Wilkinson, 2013) and how trust relates to the use of information (Ebrahim-Khanjari, Hopp, & Iravani, 2012; Denize & Young, 2007). This literature review will focus on the latter in the first subsection as that is a more relevant topic. Likewise, there exists a very large body of work surrounding the act, and art, of making decisions, and a somewhat smaller body surrounding the part played by analytical tools in making decisions (Verhoef, Kooge, & Walk, 2016; Hardoon & Shmeuli, 2013). The second sub section will focus on the role of analytics in making decisions as a more fruitful path toward locating the present study.

Trust and Information

The literature describing the linkage between trust and information falls into a few categories. Sacha et al (2016) suggest that the trust placed in the data being provided by an information system is a factor of the type of user consuming the information. Whereas a subject matter expert might accept a relatively large amount of variation and unexpected results from an analysis, novice users are more likely to be thrown off by unexpected activities within the system, thus damaging whatever trust had already been built. Muir (1987) points out that this trust, once lost, is very difficult to rekindle. Sacha et al (2016) also deal with the situations in which the user is aware of uncertainties in the system. The existence of uncertainty leads to a reduced level of trust by the user. Only when the user

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