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USING GOOGLE TRENDS IN MANAGEMENT FASHION RESEARCH: A SHORT NOTE

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Abstract

Google Trends (GT) is an analytic tool for measuring and monitoring Internet search data. In recent years GT been utilized for research in fields as diverse as health care, political science and economics. This short paper looks at the possibilities of using GT in management fashion research. GT could have a natural application in the study of management fashion. After all, a key question of interest to management fashion researchers is how the popularity of management concepts and ideas evolves over time. The paper discusses the pros and cons of using GT in management fashion research. Using Internet search data can possibly reveal intentions and expectations in the management fashion market, provide indicators of future fashion demand, and as well as indicate “outbreaks” of contagious management concepts and ideas.

Keywords: *Google Trends; management fashion; management concepts; management ideas; Internet*

1. INTRODUCTION

1.1 Google Trends

Google Trends (GT) (www.google.com/trends/) is a free analytic tool for measuring and monitoring Internet search data (Choi & Varian, 2012). In the words of Choi and Varian (2012), GT can be used to “predict the present”. GT contains Google search data dating back to 2004, and can measure and monitor trends in web searches over time.

Several researchers have pointed out that GT provides early indicators of future behavior. GT has been applied in a variety of research fields, including health care (Nuti et al., 2014), software engineering (Rech, 2007) and political science (Mellon, 2013, 2014). In epidemiological research, GT has been used to predict disease infections (Pelat, Turbelin, Bar-Hen, Flahault, & Valleron, 2009; Seifter, Schwarzwald, Geis, & Aucott, 2010). For example, when a large number of people search for the term “flu” this indicates an outbreak. In economic research, GT can be used to predict economic behavior and future economic activities, e.g. housing prices (Wu & Brynjolfsson, 2009) or inflation expectations (Guzman, 2011).

1.2 Purpose

Against the brief background described above, this short paper explores how GT can be applied in research on “management fashions” (see e.g. Collins, 2012; Ten Bos & Heusinkveld, 2008). To the best of the author’s knowledge, GT has not previously been discussed in the context of management fashions, or more generally in management research, for that matter. In this paper, it is argued that GT could have a natural application in the study of management fashion. After all, a key question of interest to management fashion researchers is how the popularity of management concepts and ideas evolves over time. This paper points out the main pros and cons associated with using this tool. Moreover, the paper discusses the possibilities for using GT to reveal expectations in the management fashion market, provide indicators of future consumer demand, as well as indicate “outbreaks” of contagious management concepts and ideas.

1.3 Structure

The rest of the paper proceeds as follows. Section 2 looks at the use of GT in other academic research fields. Section 3 focuses on the use of GT in management fashion research and provides illustrative examples of how it can be used to study the evolution of different management concepts and ideas. Section 4 evaluates the pros and cons of using GT in management fashion research. In Section 5 discusses the broader implications for research on management fashions. Section 6 concludes the paper by discussing shortcomings and ideas for future research.

2. USE OF GOOGLE TRENDS IN DIFFERENT ACADEMIC RESEARCH FIELDS

2.1 Online and offline behavior

In recent years, there has been an increased recognition that online behavior, e.g. on social media platforms such as Twitter, can predict offline real-world behavior and outcomes (Asur & Huberman, 2010; DiGrazia, McKelvey, Bollen, & Rojas, 2013). There are number of tools available for monitoring social media activities (Laine & Frühwirth, 2010). In a similar vein, GT is an analytic tool which can be used to monitor Google search activity. The next section looks at research which shows that GT can be used to gain insight into many types of offline behavior.

2.2 GT in academic research

Using GT in academic research is not new. GT is widely used in a wide range of academic research fields, including health care research (Nutti et al., 2014), epidemiology (Pelat et al., 2009; Seifter et al., 2010), software engineering (Rech, 2007), political science (Mellon, 2013, 2014), and economic research (Guzman, 2011; Wu & Brynjolfsson, 2009).

In epidemiological research (Pelat et al., 2009; Seifter et al., 2010), GT has been used to predict disease infections. For example, when lots of people search for the term “flu” this indicates an outbreak is about to occur. In political science GT has been used to measure issue salience (Mellon, 2013, 2014), which is a measure of how important an issue is to voters. Finally, in economics GT has been used to predict economic behavior and future economic activities. For example, search data can be used to make predictions about the housing market (Wu & Brynjolfsson, 2009) or inflation expectations (Guzman, 2011). In the words of Wu and Brynjolfsson (2009, p. 13) *“the abundance data from Google Trends allows researchers to study numerous topics”*.

2.3 GT and managerial/organizational behavior

This brief exploratory literature review has shown that GT is used to predict behavior in a wide range of research fields. However, the review did reveal any research employing GT in the context of managerial and organizational behavior. Given GT’s apparent relevance for understanding political and economic behavior, it seems plausible that GT could be employed by researchers in studies of managerial and organizational behavior as well. In the next section, the discussion turns to how Internet search engines such as Google may be used by managers in the management fashion consumption process, and in what ways management fashion researchers could apply GT as an analytic tool to monitor such search activity.

3. USING GOOGLE TRENDS IN MANAGEMENT FASHION RESEARCH

3.1 Management fashion research

Management fashion research is an important research area in management and organizational behavior (see e.g. Collins, 2012; Ten Bos & Heusinkveld, 2008). A key focus of management fashion research is on mapping trends in the popularity of different management concepts and ideas. The lifecycle of fashionable management concepts and ideas is typically illustrated using a bell-shaped curve. The assumption is that fashions are fleeting and transient phenomena, which after a take-off and growth phase, become widely popular before going out of fashion and waning away.

Over the course of the last decades a large number of management concepts and ideas have been introduced (see e.g. Hindle, 2008). Well-known examples of fashionable management concepts and ideas include Knowledge Management, Balanced Scorecard and Lean. However, not all management concepts and ideas succeed in becoming popular. To this point, Jung and Kieser (2012, p. 329) note that management fashions are those “management concepts that relatively speedily gain large shares in the public management discourse.”

Management fashion researchers tend to view the diffusion and popularization of management concepts and ideas as happening within a management fashion market shaped by supply and demand side forces (Abrahamson, 1996). A criticism of management fashion research is that it has focused heavily on the supply-side, and has largely taken supply-side discourse (e.g. citations in newspapers and professional magazines) as a proxy for take-up by organizations and managers on the demand side (Benders & Van Veen, 2001; Clark, 2004). To this point, research has shown that it is not always the case that supply-side activity and demand-side use “coevolve” (Nijholt & Benders, 2007). For example, there might be much “talk” on the supply-side without this being reflected in actual take-up by organizations and managers.

Studying the actual impact of management fashions can therefore prove to be a challenging task (Nijholt & Benders, 2007). Print-media indicators do not provide a complete picture of a fashion's impact (Benders, Nijholt, & Heusinkveld, 2007). Therefore, different research methods and data sources should be combined to provide a fuller picture of a fashion's impact (Madsen & Stenheim, 2013). However, to date, the possibility of using Internet search data has not been addressed in the management fashion literature. As will be discussed in the following, GT can possibly be used as one of the colors in a pallet used to "paint an overall picture" (cf. Nijholt & Benders, 2007, p. 638) of a management fashion's impact.

3.2 Google and the consumption of management fashions

Little is known about how managers use Internet search engines to gather information. However, we know from surveys that the Internet is heavily used in everyday life in countries such as the United States (e.g. Rainie, 2010). "Googling" for information has become part of our everyday vocabulary, which indicates that Google has become institutionalized as perhaps the single most important Internet search engine. Recent research also shows that the Internet and social media platforms are used not only in everyday life, but are also increasingly used by professionals in organizations (Skeels & Grudin, 2009).

Search engines such as Google may shape the way we search for information. For example, in the marketing literature, it has been shown that Internet has shaped how consumers search for information when they are considering buying goods and services (Peterson & Merino, 2003; Ratchford, Lee, & Talukdar, 2003). It is conceivable that the Internet also shapes how consumers of management fashions (i.e. managers in organizations) search for and become aware of new management concepts and ideas. Traditional printed books and articles may not have as prominent a role as they had in the past due to the advent of search engines and various social media platforms which can be accessed at the press of a button (Madsen & Slåtten, 2015b).

However, currently little is known about what role Internet search engines, and Googling in particular, may be playing in the consumption of management concepts and ideas. How are managers using searching engines when learning about new concepts and ideas? What role do search engines play in the "awareness stage" where managers encounter, become aware of and learn about new management concepts and ideas (cf. Madsen, 2014; van Rossem & van Veen, 2011; van Veen, Bezemer, & Karsten, 2011)? Furthermore, we know little about how search activity changes over time, as a fashion progresses through its lifecycle. It could be that search engines are primarily used in the early phase of the management fashion lifecycle, when concepts and ideas are poorly understood and are perceived as novel and newsworthy.

3.3 Studying the trends in interest in management concepts and ideas

This section provides some examples of how researchers could use GT to study the evolution of management concepts and ideas. The examples of management concepts and ideas utilized in this section (e.g. Big Data, Balanced Scorecard) are often cited in Bain & Company's bi-annual survey of popular management tools and trends (e.g. Rigby & Bilodeau, 2015) or Gartner's annual hype cycle report for emerging technologies (e.g. Gartner, 2015).

GT allows researchers to search for terms such as "Big Data" or "Balanced Scorecard". Figure 1 shows the interest in "Big Data" over time. Figure 1 clearly indicates that there has been an "explosion" in the interest in Big Data, which took place around 2011-2012. Moreover, the interest has as of 2016 not yet peaked, even though the rate of increase has slowed down recently.

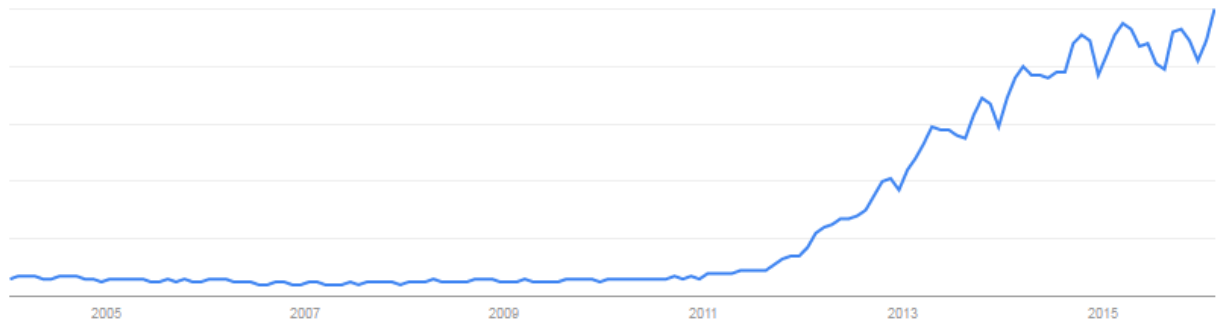


Figure 1: "Big Data"
 Data source: Google Trends (www.google.com/trends), 02/15/2016

Figure 2 shows the interest over time for the search term "Balanced Scorecard", another well-known management concept which was introduced in 1992 (Kaplan & Norton, 1992). In prior research it has been noted that there was a strong "hype" associated with this concept around the turn of the century (Ax & Bjørnenak, 2005; Madsen & Slåtten, 2015a). Figure 2 shows that the interest has been steadily falling for several years. However, at the same time, recent research shows that Balanced Scorecard is alive and well in organizational practice, more than two decades after it was introduced (Frigo, 2012; Hoque, 2014; Rigby & Bilodeau, 2015). In other words, a concept such the Balanced Scorecard may be widely used even though search activity has waned.

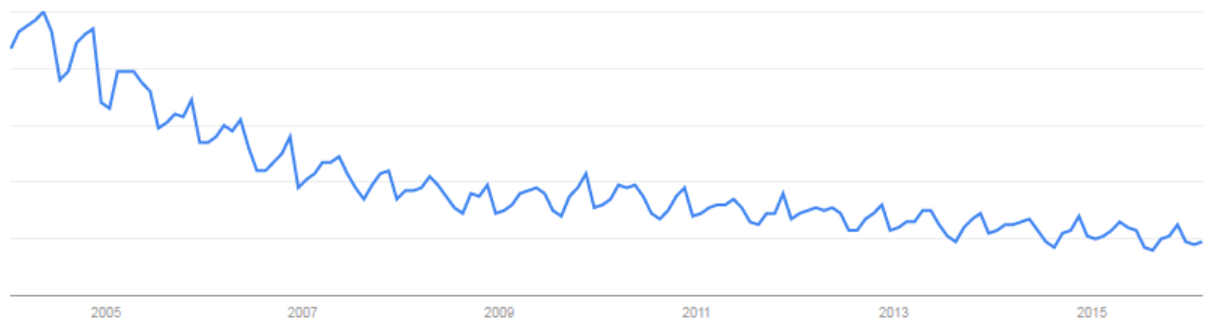


Figure 2: Search term "Balanced Scorecard"
 Data source: Google Trends (www.google.com/trends), 02/15/2016

3.4 Comparisons

Another possibility offered by GT is do side-by-side comparisons of management concepts and ideas. In Figure 3, the search terms "Data Mining" and "Big Data" are compared. As Figure 3 clearly shows, Big Data has overtaken Data Mining in terms of relative level of interest. One possible explanation of this development is that Big Data in some ways is a relabeling and repackaging of Data Mining.

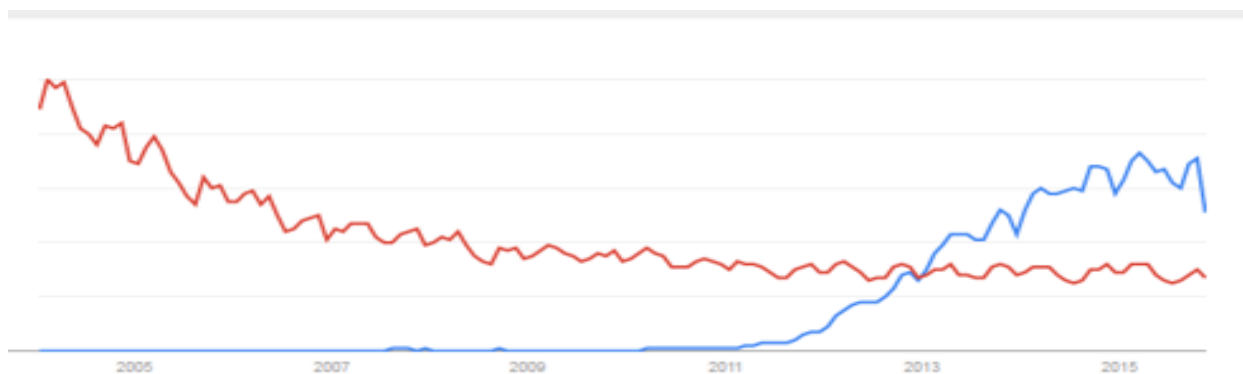


Figure 3: Search terms "Data Mining" vs. "Big Data"
 Data source: Google Trends (www.google.com/trends), 02/15/2016

3.5 Regional differences

GT could also shed light on differences across regions and markets. Figure 4 shows that the interest in “Big Data” is currently highest in India and countries in East Asia.



Figure 4: Regional interest in "big data"
 Data source: Google Trends (www.google.com/trends), 02/15/2016

3.6 Related searches

GT also provides useful information about related topics and queries. Figure 5 shows topics and queries related to the search term “CRM”, which is the acronym used for the Customer Relationship Management concept. Figure 5 shows that typical related topics and queries include software vendors such as Microsoft, SAP and Salesforce.com. This type of information underscores these actors’ important positions in the CRM management fashion market.

More generally, this function in GT could provide an indication of the interest in complementary products and services related to management fashions. Previous management fashion research has shown that there is a wide range of complementary products and services for fashions such as Knowledge Management (Klincewicz, 2006) and the Balanced Scorecard (Madsen & Slåtten, 2015a).

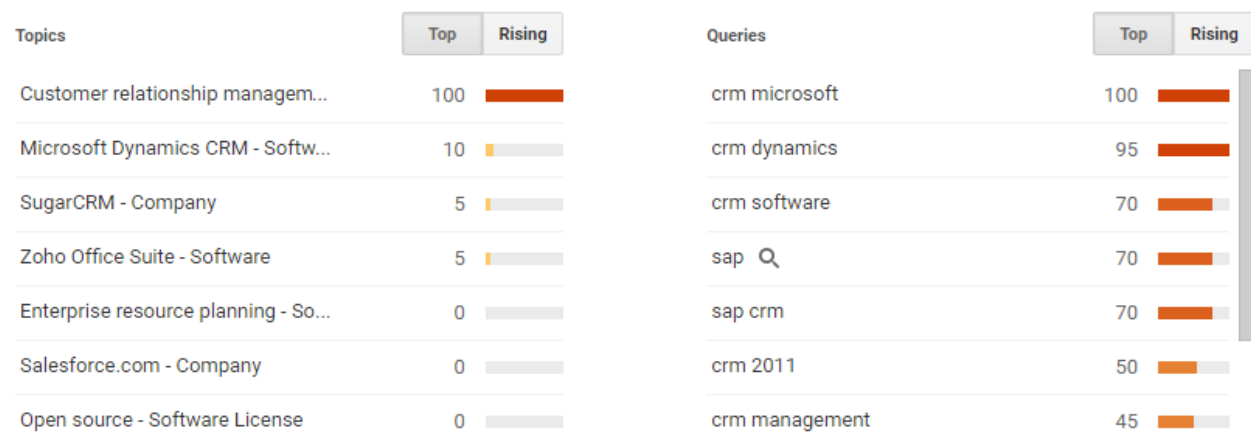


Figure 5: Related searches to "CRM"
 Data source: Google Trends (www.google.com/trends), 02/15/2016

4. PROS AND CONS OF USING GOOGLE TRENDS IN MANAGEMENT FASHION RESEARCH

This section takes a closer look at the pros and cons of using Google Trends in management fashion research. As will be discussed in greater detail, the pros are generally related to GT’s user-friendliness and availability, while the cons are related to limited possibilities for in-depth analysis.

4.1 Pros

Perhaps the most obvious benefits of using GT is that it is fast and free. Using GT, it becomes very easy for researchers, students and journalists alike to monitor developments more or less in real time. As shown in the previous section, GT allows researchers to not only look at the interest in individual search terms, but also compare different search terms, differences across countries/regions, as well as explore related topics and queries.

Another benefit is that GT provides data which can possibly be used to provide a window into the decision-making of management fashion consumers (i.e. managers). As Wu and Brynjolfsson (2009, p. 13) point out: *“Rather than rely on painstaking surveys and census data, predefined metrics and backwardlooking financial reports, social science researchers can use query data to learn the intentions of buyers, sellers, employers, gamers, gardeners, lovers, travelers and all manner of other decision-makers even before they execute their decisions.”* GT could provide a macro-level view of managers’ interest in management concept and ideas, which is not easily captured by other research methods such as surveys.

Furthermore, Wu and Brynjolfsson (2009, p. 13) point out that search data reveal the intentions of managers and is not strategic: *“It distills the collective intelligence and unfiltered intentions of millions of people and businesses at a point in their decision-making process that precedes actual transactions. Because search is generally not strategic, it provides honest signals of decision-makers intentions.”*

In a similar vein, Guzman (2011) points out that a key benefit of GT data is that reveals expectations in the market. This is because people search for things they would like to learn about, issues that they care or perhaps worry about. In the context of management fashion, GT data may provide insight about what management issues managers are interested in and would like to learn more about, and what aspects of business they are interesting in improving (e.g. areas where managers perceive performance gaps).

4.2 Cons

Despite these pros, there are also several cons. One limitation of GT is that the data is adjusted and normalized¹, which makes it difficult to conduct in-depth analysis of GT data. GT can only shed light on relative popularity of search terms across regions. The analysis is also limited to Google search data, and does not cover other search engines such as Yahoo etc.

Another problem is related to the fact that GT data only dates back to 2004. This could be a problem when researching management fashion, as several contemporary management concepts and ideas date back to the 1990s or even earlier, e.g. the Total Quality Management movement (see e.g. Dahlgard-Park, 2011; Jung & Lee, 2016) or Knowledge Management (see e.g. Klinecicz, 2006). Over time, this will problem will diminish in importance. For never management concepts and ideas such as Big Data Analytics, Cloud Computing etc. this will be of minimal or no importance, as these concepts did not really take off until the mid-2000s or later.

Finally, another limitation of GT is that it does not take into account linguistic differences or local variations of management concepts and ideas. For example, management concepts and ideas are often translated to local circumstances (Røvik, 2007). For instance, this has been seen in the case of the Balanced Scorecard where local Scandinavian variations of the term are commonly used (Madsen & Slåtten, 2015a). As of today, GT is unable to capture such linguistic translations and variations.

Table 1: Pros and cons of using GT

Pros	Cons
<ul style="list-style-type: none"> • Fast and free • Can compare different search terms • Can compare different countries/regions • Reveals intentions • Reveals expectations 	<ul style="list-style-type: none"> • Data normalized and adjusted • Only Google search data, not Yahoo etc. • Only dates back to 2004 • Linguistic translations and variations of management concepts/idea

5. DISCUSSION

¹ <https://support.google.com/trends/answer/4365533?hl=en>

This section discusses the findings of the paper in the context of research on management fashions. The discussion is centered around three topics: (1) search behavior and managerial behavior, (2) virality, outbreaks and management fashions, and (3) supply-demand dynamics.

5.1 Search behavior and managerial behavior

The research reviewed in Section 2 of this paper has shown that online search behavior can predict economic behavior and outcomes such as house prices and inflation expectations (Choi & Varian, 2012; Guzman, 2011; Wu & Brynjolfsson, 2009). It is conceivable that GT could shed light on managerial and organizational behavior as well. In the context of the management fashion market, increases in search activity may predict increased interest in certain managerial issues and problems, and may be used to “forecast” future adoption behavior.

In the brief literature review in this paper it was noted that in a political science context GT has been used to measure how important an issue is to voters (Mellon, 2013, 2014). Translated to a management fashion context, GT could potentially be a measure of how important a management problem or issue is to managers. For example, if there is a general increase in searches for “analytics” this could signal that managers are looking for tools and solutions which could help with analyzing large amounts of data.

5.2 Virality, outbreaks and management fashions

As shown in Section 2, GT has been applied in epidemiological research (Pelat et al., 2009; Seifter et al., 2010) where it has been used to predicting disease outbreaks (Carneiro & Mylonakis, 2009). The notion of an “outbreak” has also been used in the context of contagious management concepts and ideas. A recent theoretical perspective on the “spread” of management concepts and ideas is Røvik’s virus theory (Røvik, 2011). The virus theory offers a way of think about what causes concepts and ideas to reach epidemic proportions. Therefore, it is possible to GT could be used to predict outbreaks in the context of management concepts and ideas. When many managers search for the same idea this indicates that an outbreak is about to occur and that a concept/idea is highly infectious. For example, the sudden spike in search for the term “Big Data” in 2011-2012 may have been an early signal that an outbreak was about to occur.

5.3 Supply-demand dynamics

GT could also potentially influence the dynamics between suppliers and consumers in the management fashion market. Today it can be observed that consulting firms and software solution vendors are advertising on search engines such as Google. This is an indication that suppliers of fashions are realizing the importance of search engines in reaching potential fashion consumers.

On the supply side, actors such as consultants could use GT to “reveal expectations” (cf. Guzman, 2011) in the management fashion market. Suppliers can possibly use GT data to tailor their repertoire of management solutions, or adjust how they present their knowledge products to consumers in the management fashion market. For example, when many managers search for and show interest in “Big Data” or “Analytics” this indicates that these things are seen issues of concern in the business community.

Insights from GT data can also possibly be used by suppliers (e.g. consultants) in the fashion-setting process. For example, GT data may reveal what types of buzzwords work when communicating with fashion consumers. In other words, GT can help suppliers connect with the zeitgeist. Furthermore, suppliers can use agenda-setting processes (Kosicki, 1993) to try and influence the type of issues managers think about and how they think about them (Weaver, 1991). In turn, this may trigger interest and searches by curious management fashion consumers.

6. CONCLUSION

6.1 Contributions

This short paper has explored the potential of using GT as an analytic tool in management fashion research. The paper has shown that GT has both pros and cons when used in the context of management fashions. Furthermore, the use of Internet search data has implications for debates in the literature on management fashions. In this paper, it is argued that using Internet search data such as GT could possibly reveal intentions and expectations in the management fashion market, provide

early indicators of future fashion consumer demand, and as well as indicate outbreaks of contagious management concepts and ideas.

6.2 Limitations

This paper should be seen as an early attempt aimed at investigating whether GT can be used in management fashion research. Being speculative in nature, the paper has several limitations which should be considered carefully. For example, the paper has only looked at GT. In the future, researchers could also look at other similar analytic tools, e.g. for other search engines such as Yahoo or social media platforms such as Twitter. GT only captures one part of the activity around management fashions and does not offer a full picture of the impact of a fashionable management idea. To use the painting metaphor, search data is only one color in the palette used to paint a picture of the impact of management fashions.

6.3 Future research

With these limitations in mind, there are several possible extensions of this paper. One possible extension is to study how search activity coevolves with print-media discourse (Benders et al., 2007) and social media discourse (Madsen & Slåtten, 2015b). Another possible area would be to investigate the relationship between search behavior and the adoption of management fashions. In the context of the Balanced Scorecard, this paper has shown that even though search activity has tapered off, recent surveys indicate that Balanced Scorecard usage remains high (e.g. Rigby & Bilodeau, 2015). It would also be interesting to investigate how search behavior changes over the course of the management fashion lifecycle. It is possible that search behavior is most intense in the early stages when the level of awareness and knowledge is low, and that, as the average knowledge level in the business community rises, search activity tapers off.

Qualitative approaches could also provide useful insights into how managers search for knowledge online, e.g. what are their intentions and expectations (Guzman, 2011; Wu & Brynjolfsson, 2009). For example, interviews with managers could shed light on how and why they utilize Internet search engines to learn about new management concepts and ideas. In addition, such investigations could provide a window into managers' decision-making process and motivations for seeking out new management knowledge.

Finally, Wu and Brynjolfsson (2009, p. 13) have noted that "*the abundance data from Google Trends allows researchers to study numerous topics*". There are possibly numerous other applications in the field of managerial and organizational behavior. This paper should be seen as an enticement for further research on GT in the context of organizations and management.

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