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# Leveraging Online Search Data as a Source of Marketing Insights

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# Leveraging Online Search Data as a Source of Marketing Insights

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## ABSTRACT

Every year billions of users around the world submit trillions of queries through online search engines such as Google, Bing, Baidu, and Yandex. Over the years, aggregated and anonymized search volume data on keywords contained in all these queries have formed an epic database of human intentions that continues to expand every day. Thanks to platforms such as Google Trends, Google Ads Keyword Planner, Microsoft Advertising Keyword Planner, Baidu Index, and Yandex Wordstat, advertisers can readily assess search engine users' collective interests over time and across geographic areas to optimize their search engine marketing efforts. In this monograph, we illustrate how online search volume data, indexed or otherwise, can be leveraged as a powerful source of marketing insights for purposes beyond search engine marketing. We do so by offering a brief tutorial on Google Trends and Google Ads Keyword Planner, two popular (and free) platforms for gathering online search trend and volume data, respectively. We review prior studies that have examined the use of aggregate online search data

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as (1) predictors for nowcasting and forecasting, (2) dependent variables in market response modeling, and (3) proxies for otherwise hard-to-measure constructs. In each of these three areas, we provide specific examples of applications to illustrate the power and versatility of online search data. We conclude by offering several ideas for future research where we see the full potential of online search data is still to be uncovered.

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**Keywords:** online search; marketing insights; marketing research; big data.

# 1

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## Introduction

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Online search has become an integral part of everyday life. From the mundane (e.g., the exact two-word phrase, “best toothbrush,” is on average searched by twenty-two thousand Google users in the U.S. each month), to the more cerebral (e.g., each month, on average one-hundred-and-ten thousand Google users in the U.S. type into the query box the exact same question, “what is the meaning of life”), consumers try to resolve their queries with online search engines via their computers, mobile devices, and smart speakers, hoping that they can get what they are looking for in the returned results. Such a reliance on online search engines (e.g., Google, Bing, Baidu, and Yandex) is nowadays a routinized daily behavior for consumers around the world. For example, 84% of consumers conduct three or more searches per day through Google’s search engine (Moz, 2022), which processes more than 8.5 billion queries every day (Internet Live Stats, 2022), amounting to more than 3.1 trillion searches a year.

As a byproduct of this process, aggregated and anonymized search volume data on keywords contained in all these queries have formed an epic database of human intentions that continues to expand every day. Thanks to platforms such as Google Trends, Google Ads Keyword

Planner, Microsoft Advertising Keyword Planner, Baidu Index, and Yandex Wordstat, advertisers can readily assess search engine users' collective interests over time and across geographic areas to optimize their search engine marketing efforts.

In this monograph, we draw on a growing literature that has illustrated how online search data, in indexes or volumes, can be leveraged as a powerful source of marketing insights for purposes beyond search engine marketing. For example, online search data has been used to investigate trends in consumer needs, wants, and preferences, or to assess consumer interests and concerns about different brands and products. As a source of marketing insights, online search data offers several advantages over survey and social media data.

First, what people type into search query boxes tends to be subject to less social disability biases, compared to how they respond to surveys or post on social media. Second, online search data, made available through platforms such as Google Trends, reflects the collective interests of the population by drawing on large and representative samples of the vast majority of online information seekers. As a result, online search data tends to be subject to less sample selection biases and sampling errors. Third, thanks again to platforms such as Google Trends, online search data can go as far back as 2004 and at the same time can be updated in near real time, providing an incredibly cost-effective way of gathering both historical and up-to-the-minute marketing insights, which can prove particularly valuable for marketers and researchers with limited resources. Consequently, we believe the availability of online search data has the potential of leveling the playing field when it comes to marketing intelligence.

Accordingly, our monograph is written with two main audiences in mind: practitioners seeking a supplemental data source for marketing insights and academics seeking an alternative data source for addressing their research questions. For practitioners, we aim to offer a guide on how best to utilize platforms such as Google Trends and extract actionable insights for a wide array of business decisions, illustrated with real-world example applications. For academics, we aim to provide a literature review and a framework that integrates the various avenues through which online search data can be leveraged in scientific research.

The rest of the monograph proceeds as follows. Section 2 offers a brief tutorial of Google Trends and Google Ads Keyword Planner, two popular platforms for gathering online search trends and volume data, respectively. We focus on lesser-known features and offer tips that we have found particularly useful in practice in order to get the most out of these platforms. We also briefly discuss Baidu Index as an alternative to Google Trends for insights about the Chinese market, where Baidu is the dominant search engine.

The next section offers a review of the literature that has utilized online search data. Section 3 surveys research that has treated aggregate online search interests as either concurrent or leading indicators of real-world phenomena (e.g., flu outbreaks, category demands, product sales, economic conditions). This stream of research focuses mainly on gauging the value of online search data as predictors in improving nowcasting or forecasting performances.

Section 4 examines research that has treated online search data as response variables that can help measure and improve marketing effectiveness in terms of both immediate and longer-term impacts.

Section 5 reviews research that has treated patterns of online searches as unvarnished reflections of the public psyche, uncovering what people really think, feel, and intend to do, insights that may otherwise be difficult to ascertain based on what people post on social media or tell market researchers in surveys.

Section 6 highlights several promising areas for future research where online search data can serve as a big-data supplement to traditional market research, e.g., integrating online search, social media, and survey data for better brand health tracking; using online search data to spot emergent trends in consumer needs and wants that can reshape market boundaries, while separating them from fleeting fads.

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