



Applying social bookmarking data to evaluate journal usage

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ABSTRACT

Web 2.0 technologies are finding their way into academics: specialized social bookmarking services allow researchers to store and share scientific literature online. By bookmarking and tagging articles, academic prosumers generate new information about resources, i.e. usage statistics and content description of scientific journals. Given the lack of global download statistics, the authors propose the application of social bookmarking data to journal evaluation. For a set of 45 physics journals all 13,608 bookmarks from CiteULike, Connotea and BibSonomy to documents published between 2004 and 2008 were analyzed. This article explores bookmarking data in STM and examines in how far it can be used to describe the perception of periodicals by the readership. Four basic indicators are defined, which analyze different aspects of usage: Usage Ratio, Usage Diffusion, Article Usage Intensity and Journal Usage Intensity. Tags are analyzed to describe a reader-specific view on journal content.

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1. Introduction

Informetric studies focusing on scientific journals have recently emphasized the importance of including the readers' perspectives (Bollen, de Sompel, Smith, & Luce, 2005; Darmoni, Roussel, & Benichou, 2002; Gorraiz & Gumpenberger, 2010; Rowlands & Nicholas, 2007). While citation analysis only captures readers, who publish and thus cite, it fails to measure their influence elsewhere (Duy & Vaughan, 2006; Roick, 2006; Scanlan, 1987; Schlögl & Stock, 2004). A journals' content can impact the development of new technology, teaching or everyday worklife, which is not measured by citations.

With the emergence of electronic publishing it became easier to evaluate the influence of periodicals on the whole readership. Click and download data of electronic articles can be analyzed to measure journal perception. Although quite a number of indicators have been introduced, which are based on usage statistics and calculated in analogy to citation measures, data aggregation is still problematic. Despite existing standards like COUNTER (2008), even local download statistics provided by the publishers are often incomparable and lack consistency (Baker & Read, 2008; Lorenz, 2010).

Global usage data are generally wrapped in mystery by the publishers. Attempts have been made to gather global data, but projects like MESUR and by the UK Serials Group compute and compare usage to citation indicators but do not make global usage data available (Bollen, Van de Sompel, & Rodriguez, 2008; Shepherd, 2007). SERUM is a new initiative, which aims to provide access to global usage data and create a Journal Citation Report based on download statistics. However,

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