Contents lists available at ScienceDirect

Computer Networks

Cross-cultural gender differences in the adoption and usage of social media platforms – An exploratory study of *Last.FM*

CrossMark

Johannes Putzke [a,1], Kai Fischbach [b,*], Detlef Schoder [a,1], Peter A. Gloor [c,d,2]

[a] Department of Information Systems and Information Management, University of Cologne, Pohligstr. 1, 50969 Cologne, Germany
[b] Chair in Information Systems and Social Networks, University of Bamberg, An der Weberei 5, 96047 Bamberg, Germany
[c] MIT Center for Collective Intelligence, 5 Cambridge Center, Cambridge, MA 02142, USA
[d] University of Cologne, Germany

ARTICLE INFO

ABSTRACT

This paper examines cross-cultural gender differences in the adoption and usage of the social media platform *Last.FM*. From a large-scale empirical study of 3748 *Last.FM* users from Australia, Finland, Germany, and the United States of America, we find: (1) men listen to more pieces of music on social media platforms than do women; (2) women focus their listening on fewer musical genres and fewer tracks than do men; (3) women register on *Last.FM* later than do "early adopting" men (absolutely and in comparison to their friends), but at a younger age; (4) women maintain more virtual friendships on *Last.FM* than do men; and (5) women, when choosing music to listen to on social media platforms, are more likely than are men to choose tracks that correspond to mainstream tastes.

© 2014 Elsevier B.V. All rights reserved.

1. Introduction

Social media platforms (e.g., *YouTube*, *Flickr*, and *Last.FM*) are websites that allow users to create and exchange content using Web 2.0 technologies. Over the last few years, social media platforms have become increasingly popular. For example, statistics published by *YouTube* claim that more than 1 billion unique users visit *YouTube* each month. These users watch more than 6 billion hours of video each month, and upload 100 h of content every minute [1a]. The photograph-hosting platform *Flickr* provides access to more than 8 billion user-uploaded pictures, and there are more than 3.5 million new images uploaded daily [2a]. At $280 million, *Last.FM* was the largest-ever Web 2.0 acquisition in the United Kingdom when it was bought by CBS in 2007 [3a]. Today, *Last.FM* is estimated to have more than 40 million active user accounts; its users have created a database with more than 640 million music tracks, 54 million artists, and 200 million albums [4a].

Despite the high popularity and commercial relevance of social media platforms, there is surprisingly little research into their adoption and usage (e.g., [1]), exploring in particular:

Whether there are gender differences in the adoption and usage of social media platforms; and
Whether gender differences that may exist can be found in different cultures.

Answers to these two research questions are important for information systems researchers and practitioners alike. They address the current gap regarding gender issues

---

* Corresponding author. Tel.: +49 951 863 2890; fax: +49 951 863 2872.
E-mail addresses: putzke@wim.uni-koeln.de (J. Putzke), kai.fischbach@uni-bamberg.de (K. Fischbach), schoder@wim.uni-koeln.de (D. Schoder), pgloor@mit.edu (P.A. Gloor).
URLs: http://www.wim.uni-koeln.de/ (J. Putzke), http://www.uni-bamberg.de/sna (K. Fischbach), http://www.wim.uni-koeln.de/ (D. Schoder), http://cci.mit.edu/pgloor (P.A. Gloor).
[1] Tel.: +49 221 470 5325; fax: +49 221 470 5393.
[2] Tel.: +1 617 253 7018; fax: +1 617 253 4424.

in information systems research (e.g., [2–4]). The answers can support practitioners in their decisions when launching social media platforms and artists. Both questions address social phenomena and individual behavior in private settings, an area of increasing importance for information systems research. An understanding of Web users' motivations and influences is especially crucial for developing successful electronic communities and effective Web advertising [5]. Answers to both questions also contribute to our understanding of new phenomena that arise with online communities and social media.

This article provides answers, and is structured as follows. The first section, *Literature Review and Research Hypotheses Development*, is an overview of the related literature, highlights gaps in the research, and proposes eight research hypotheses. The next section, *Dataset*, describes the data used for the analyses and has three subsections: *Sample* explains our reasons for choosing the four countries analyzed using Hofstede's cultural dimensions [6], and describes the data collection process as well as the sampling procedure; *Operationalization* highlights the variables employed for the hypotheses tests; and *Descriptive Statistics* explores these variables quantitatively. The next section, *Results*, highlights the findings for the total sample as well as for each country subsample. The *Discussion, Limitations, and Further Research* section examines the theoretical and managerial implications of our findings, notes their limitations, and provides some suggestions for further research. The paper closes with a brief *Conclusion* section.

2. Literature review and research hypotheses

Three related streams of thought are particularly relevant for our research. The first is technology acceptance research (e.g., [7–13]), in which several researchers have analyzed gender differences (e.g., [14,15]) and cross-cultural differences (e.g., [16–19]) in the adoption of new technologies using the technology acceptance model (for an extensive review, see [9]). Providing a complete literature review of all these studies is not feasible within the scope of this paper, so we refer the interested reader to a meta-analysis by Schepers and Wetzels [20] that explores the moderating effect of culture in 63 of these studies. The findings of these studies cannot be applied to the adoption of social media platforms because constructs such as "*Perceived Usefulness*" with items such as "*Using the system in my job would increase my productivity*" focus only on utilitarian goods and do not apply to systems used for hedonism (for an exception see, for example, [21,22]).

The second stream of thought is research into the adoption and diffusion of hedonic media (see [23] for an extensive literature review). While these researchers acknowledge that there are differences in the adoption and diffusion between utilitarian and hedonic goods (particularly hedonic media), they mainly model diffusion at an aggregated level (for studies examining the diffusion of music see, for example, [24–27]). Hence, these studies do not explicitly address differences in the adoption between genders or cultures.

The third related stream of thought is research into social media platforms. Kaplan and Haenlein [28] classify social media platforms along two dimensions: "media richness/social presence" and "self-disclosure/self-presentation" (see [28], for an extensive discussion of both dimensions). While numerous social media platforms studied by information systems researchers score either low (e.g., [29]) or high on both dimensions (e.g., [30]), less attention has been paid to social media platforms that score in the middle on one of these dimensions, such as content-sharing communities that include *YouTube*, *Flickr*, and *Last.FM* (for an exception see, for example, [31,32]). However, it is evident that findings from gender studies in virtual worlds (e.g., [30]) cannot be applied to content communities that do not score high on both dimensions. For example, virtual worlds allow for a higher level of social presence than content-sharing communities through synchronous communication, and in synchronous communication environments there are additional ways of perceiving gender than in asynchronous communication environments (e.g., interrupting the communication partner, which is generally seen as a behavior more typical of a male than a female). The findings across these three streams of thought regarding the influence of gender on the decision to adopt and use a new technology are either controversial or not addressed at all. We argue that the controversial results may be attributable to the fact that most studies do not distinguish between the different technologies under examination. Therefore, we restrict this study to a distinct type of social media platform, namely, those for sharing music. Specifically, we analyze the adoption and usage of the social media music-sharing platform *Last.FM* [4a].

In this paper, we take an essentialist perspective on gender, that is, we essentialize men and women as separate single groups [33]. The essentialist perspective of gender has two different streams of thought regarding the causes of gender differences. The first attributes gender differences to permanent, integral, and unchangeable differences between all males as a group and all females as a group, and assumes that such differences originate from underlying biological sources. The second stream of thought attributes gender differences to "social shaping" and "social construction" [33]. In this paper, we do not regard these two streams of thought to be mutually exclusive and conflicting, but rather assume that gender differences between men as a group and women as a group may stem from both biological sources and from social shaping and social construction. However, this essentialist approach that draws a dichotomy between men and women and equates "sex" with "gender" and "gender research" with "gender differences research" can be contrasted to an approach that attempts to theorize regarding the factors that influence gender relations; such an approach can be found, for example, in minority gender studies or gender intersectionality studies (compare [33]).

Last.FM combines the functionalities of a social network platform (compare [34]), an online radio station, and music management software. Artists and music labels provide streams of music tracks on *Last.FM*. Users can search for artists and songs or listen to music from an online radio