

# Measuring Democracy on Web Interface Design

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## INTRODUCTION

Surveys are the traditional and most widely used research instrument for measuring democracy. It is often used to measure the progress and decline of freedom and democracy in political rights and civil liberties experienced by individuals. As the Internet has become one of the most important vehicles of communication, and websites one of the most popular channels for information dissemination, a question has often been asked: in what way, if any, does a website, especially its homepage, carry its country's cultural traits and represent its nation's democracy level?

Evidently, web interface design reflects not only the linguistic aspects of a nation, but also its cultural characteristics, such as values, norms, and ethics. When we examine a country's cultural and social attributes represented on the web, one of the most important areas to consider is a country's democracy level, since power and authority create a special social structure for a society's culture.

Hofstede (1980) defined five primary cultural dimensions for measuring cultural differences. *Power distance* became the first dimension. Subsequently, Marcus (2005) and Marcus and Gould (2000) extended Hofstede's cultural theory to web interface design by identifying online indicators for the five cultural dimensions. *Power distance* received seven cultural indicators. These seven indicators, as well as three others (Gould, Zakaria, & Yusof, 2000; Singh, Zhao, & Hu, 2003, 2005), were statistically analyzed and validated in Li's (2009) study. Li concluded that *special title*, *monumental building*, *authority figure*, *symbol of nationalism or religion*, *link to information about the leaders of the organization*, *information arranged according to management hierarchy*, and *symmetric layout* are valid indicators for measuring democracy on web interface design.

However, how exactly can web interface design be measured to detect a nation's democracy level with these seven indicators?

This article serves as an introduction to apply these seven indicators in examining democracy on web interface design. It introduces a new measuring instrument to assist in determining a nation's democracy level, so that democracy can be measured not only by traditional methods (surveys, case studies, questionnaires, interviews, and observations), but also through the study of web interface design. As a result, it extends cultural and political studies into the fields of human-computer interaction and user interface design.

## BACKGROUND

### Democracy and Its Measures

Over the years, the concept of democracy has been defined and redefined many times. For a long period of time, democracy has been associated with the demand of political and social equality (Laski, 1931). Some definitions for democracy place more emphasis on elections, examining voter participations and equal voting rights (Dahl, 1956; Lipset, 1963); others on the existence of political liberties (Lenski, 1966). Bollen (1980) defines democracy as "the extent to which the political power of the elite is minimized and that of the nonelite is maximized" (p.372). He argues that democracy should not be measured by voter participation, political stability, or multiparty political system, but by political rights and political liberties.

A growing number of studies concentrate on democracy measures and a variety of indices have been proposed and evaluated. First of all, whether democracy should be measured on a dichotomy ap-

proach (Lipset, 1959; Przeworski et al., 2000) or on a continuous scale (Bollen, 2009; Cutright, 1963) has been a major debate. Bollen (1990) believes democracy is continuous and should be evaluated in degrees. He defined democracy measures as freedom of broadcast media and civil liberties, freedom of group opposition and political rights, competitiveness of nomination process, and effectiveness of elected legislative body. Although Bollen provided democracy indices for more than 100 countries, his studies only cover the years of 1960, 1965, and 1980 (Bollen, 1980, 1993). The Polity IV Democracy Scale, however, covers the years from 1800 to 2010 and “examines concomitant qualities of democratic and autocratic authority in governing institutions” (Marshall & Jaggers, 2012). It places a country’s democratic values on a 21-point scale. Freedom House Index of Political Freedom also places a country’s democracy on an ordinal scale. Freedom is measured by the progress and decline of freedom and democracy in political rights and civil liberties experienced by individuals. Each country is classified by the status of Free (Level 1.0 to 2.5), Partly Free (Level 3.0 to 5.0), or Not Free (Level 5.5 to 7.0) (Freedom House, 2012). Since its publication in 1972, this freedom rating remains as the standard in trans-national democracy evaluations (McClintock & Lebovic, 2006). Together with Polity scheme, it has become one of the two most widely used measures for democracy across countries (Foweraker & Krznaric, 2002).

## Cultural Dimensions

In recent years, an increasing number of studies have focused on defining cultural dimensions. Hofstede’s (2001) five cultural dimensions have become the most quoted in cross-cultural studies and have been applied to a variety of research fields. After conducting two large surveys with 116,000 questionnaires, Hofstede concluded that four cultural dimensions (*power distance*, *collectivism vs. individualism*, *masculinity vs. femininity*, and *uncertainty avoidance*) can be used to measure cultural differences. The fifth cultural dimension, *long-term vs. short-term orientation*, was added in 1991. In 2010, based on Michael Minkov’s analysis of the World Values Survey data for 93 countries, the sixth cultural dimension, *indulgence vs. restraint*, was included.

For the past decade and two, the first five cultural dimensions have been used to examine information process (Steinwachs, 1999), the concept of the Internet as a virtual cultural region (Johnston & Johal, 1999), Internet portal (Zahir, Dobing, & Hunter, 2002), and e-gaming (Kale, 2006). Marcus’s study went further and made great contributions to cross-cultural study by applying Hofstede’s cultural dimension theory to web interface design (Marcus, 2005; Marcus & Gould, 2000). Marcus (2005) mapped Hofstede’s five cultural dimensions to user interface components and defined cultural indicators for each. Marcus and Gould (2000) also pointed out that power distance may influence several aspects of user-interface design, such as symmetric layout, information highly structured, hierarchies in mental model, nationalism or religion, focus on authority, official stamp, restricted security to access, and restricted managerial sections. At the same time, Gould, Zakaria, and Yusof (2000) examined three Malaysian and three US websites and concluded that prominent organizational charts, special title on members of the organization, and information arranged according to the management hierarchy are strong power distance indicators. Subsequently, Singh’s (Singh, Kumar, & Baack, 2005; Singh, Zhao, & Hu, 2003, 2005) studies also applied Hofstede’s cultural dimension theory to web content. They conducted considerable amount of scientific research to systematically validate Marcus and Gould’s framework in measuring cultural adaptation on the web. In their studies, six indicators were singled out as indicators for power distance.

Callahan (2007) examined cultural similarities and differences in terms of webpage organizations and graphic designs. Her study found that cultural differences exist across countries and significant statistical correlations were found for the dimensions of power distance and individualism/collectivism between Hofstede’s cultural dimension scores and the frequency counts of web indicators. Recently, while analyzing cultural elements in English-language and Chinese-language website designs, Chang (2011) found that cultural differences exist in power distance, uncertainty avoidance, individualism/collectivism, and long-term/short-term dimensions.

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