Abstract

Introduction

The Web is a distributed knowledge organization built up with millions of web pages interconnected at each other through the hyperlinks. This is an emerging research field in Library and Information Science because of the issues such as navigability and accessibility of information across vast document networks. The significance of the Web for social and economic life is well-accepted phenomenon and also its influence on higher education is no exception. Therefore, there is an urgent need to understand the web phenomenon at least from the information generation, information linkages, sources, targets and information retrieval perspectives. The objective of the thesis is to know the web presence, analyze the hyperlinks using webometric tools and techniques, to develop a conceptual framework and empirical methods concerning the identification and characterization of link structures in selected Indian academic web space in India. The main research questions are: (a) What is the status of the web presence of Indian universities? How can it be measured? (b) Is it possible to rank Indian universities at the national, regional and state levels by applying appropriate webometric indicators? (c) Is there any correlation amongst web ranking systems for Indian universities? If so, what is the degree of correlation? (d) Is it possible to identify link topology for selected Indian academic web space? What factors are associated with the formation of such link topologies? (e) What are the possible reasons for hyperlinking within the Indian academic web space?

Scope

The study covers the webometric study of all Indian universities, recognized by UGC India. More specifically, it covers universities belonging to the following categories: state university (SU), deemed university (DU), central university (CU) and institutes of national importance (INP). It does not cover private universities (PU) in India.

Methods

The selection of data set i.e. Indian universities is based on those listed in the UGC India website. The domain names for these universities have been verified and tested through search engines. Webometric data have been collected not only through commercial search engines but also through academic web crawlers to obtain more balanced result. Various tools and techniques were applied for hyperlink analysis, for designing and developing the ranking system for Indian universities, finding out
correlation with existing ranking systems, classification of hyperlinks for finding out the motivational factors, testing, validating and interpreting the results.

**Results**

The results show that 98% Indian universities are having valid domain names and websites. Only 10% Indian universities occupy 82% of total webpages and 39% of total inlinks; whereas remaining 90% universities occupy only 18% webpages but 61% inlinks. This means that the distribution of webpage is more skewed than the distribution of inlinks. There is a strong correlation between proposed ranking system namely Webometric Ranking of Indian Universities (WRIU) in comparison with other related and relevant international university ranking systems. Various link topologies have been identified for Deemed Universities (DU), Central Universities (CU), Institutes of National Importance (INP), Open Universities (OU) and Indian Institute of Technologies (IITs), National Institute of Technologies (NITs) and Agricultural universities but the depth of inter-connection among them varies quite a lot based on categories of universities.

**Keywords:** Webometrics; Web Presence; Webometric Ranking; Link Analysis; Link Topology; Indian Universities; Reasons for Hyperlink; Motivation for Hyperlink.