

Causal Modelling and Analysis Evaluation of Online Reputation Management Using Fuzzy Delphi and DEMATEL

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ABSTRACT

Online reputation management (ORM) is a significant and proactive tool that can reinforce the credibility of the service provider. Literature existing today on this topic has rarely reported on the causal modeling analysis from an ORM perspective. Therefore, the objective of this paper is to build a factor structure of ORM and to build the inter-relationship map amongst the criteria of each factor. To allow for vague human judgment, a fuzzy concept is employed in a form of Fuzzy Delphi. The DEMATEL technique has been used to develop a Network Relationship Map (NRM) among the criteria of each factor. Data has been gathered through a structured questionnaire conducted with a survey of experts. The study divided the criteria of each factor into cause-effect criteria. Findings of the study show that criteria such as distributed reputation system, trust, online competitive branding, website management, customer relationship, search engine optimization, corporate social responsibility, users' reach, competition/page views, purchase discounted products and cash back or money back fall under the cause group of ORM's factors. The results of this study can not only help service providers to enhance their reputation but can also guide them towards targeting their customers in an online platform.

KEYWORDS

DEMATEL, Fuzzy Delphi, Influential Network Relation Map (INRM), Online Reputation Management (ORM)

1. INTRODUCTION

In today's competitive commercial world, all types of businesses which are either online portal based or in the form of physical stores, opt for online marketing techniques to increase their sales as well as to keep a track of their perceived reputation in the market. Therefore, with the advancement of technology and availability of the internet, many companies today track their business progress through an online platform by focusing on online reputation management (ORM). It is a proactive technique that enhances a company's integrity. Nowadays, ORM involves all kind of enterprises from instituting, upholding, restoring and observing the available online information about an individual or organization. Most marketing plans include important tools, such as reputation management, which

includes effective and efficient listening and feedback systems. According to the feedback received, firms can respond to various points raised by their customers online. This is managed by considering social platforms as an important and trustworthy channel for customers to gain information about the stores and products via the internet. Pertinent issues such as “How do service providers manage their reputation in the online platform?” have rarely been discussed in current literature. In the online marketing domain, very little discussion is available related to ORM and how this impacts on business; further investigation is needed.

Online reputation management is evolving as an industry and entering a new era (Hung et al., 2012). Communication and feedback systems monitor the reputation of the business and provide organizations with essential information. There has been a gradual increase in the trend of sharing information online, by both individuals and organizations. The most popular social media portals are those which are scalable and effective to use. This increases the interaction between the producers and consumers allowing them both to spread information online. One of the important features of this way of working is that the multiple opinions expressed on blogs, social network and other websites can be easily accessed and monitored.

In comparison with established features, the variables coming from fuzzy logic direct different memberships to different classes (Zadeh, 1965). The implementation of fuzzy sets is carried out in such a way that the membership of a variable to the class is measured by degree. In this study, we identify the factors associated with online reputation management by using a fuzzy Delphi method. By using fuzzy theory, it is easy to capture the unclear sentiments, and also easy to imitate the upper classes of cognitive perceptions and thinking from the data. The fuzzy theory allows creating a fuzzy membership degree that automatically captures knowledge from inexplicit information.

In 2012, Hung et al. made a division between technical and intellectual models for online reputation and its application in management. The technical model comes mainly from human factors and is specifically restricted to the purpose based search approach. Due to the powerful visualization techniques, this technique is most widely used nowadays. However, the cognitive models rely on these human factors for the collection and analysis of data. Some researchers (Pedrycz, 1998; Arotaritei and Mitra, 2004) attempted to combine the strength of both models to create a generally automated but human-centred online reputation analysis. In this field, there have been limited attempts to unravel the causal nature of ORM. Therefore, this study makes an attempt to find not only the factor structure of online reputation management, but also to find the inter-relationships within criteria of each factor and develop a network relation mapping amongst them.

The study is divided into five sections. The first section is an introduction with basic preliminaries for analysis described in section 2. In section 3, the construction of online reputation management factors has been carried out through a fuzzy Delphi method. In section 4, analysis and development of a network relation map for each criterion is framed. Finally, in section 5, managerial implications and conclusions are given.

2. BASIC PRELIMINARIES

To conduct this study the basic preliminaries of fuzzy theory need to be understood. Therefore, some important definitions of fuzzy sets are mentioned below:

Definition 1: Let U be a universe set. A fuzzy set of U is defined by the membership function $\mu_A(x) \rightarrow [0,1]$, where $\mu_A(x), \forall x \in U$, indicates the degree of x in A .

Definition 2: The α -cut of fuzzy set A is a crisp set $A_\alpha = \{x \mid \mu_A(x) > \alpha\}$. The support A is crisp set $\text{sup}(A) = \{x \mid \mu_A(x) > 0\}$. A is normal if $\sup_{x \in U} \mu_A(x) = 1$, where U is the universe set.

Definition 3: A is a fuzzy number if A is normal and convex fuzzy set of U .

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