Chapter 7

# Enhanced Selling on Digital Space via Matching Buyer and Seller Preferences Using Fuzzy MCDM Method

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## ABSTRACT

*Usage of websites like Olx.in, Quikr.com is rapidly growing in India. One of the major difficulties faced by the users of such websites is the long-time taken to realize the search. This work proposes an integrated approach to searching, through matching in digital environment using fuzzy analytical hierarchy process considering multiple criteria. The objective of the study is to enable buyers to search the sellers effectively and efficiently. Efficient and effective search can help buyers narrow down to the desired matches and enhance seller's the chances of selling through online classified portal. Authors utilize a compatibility metric that enhances the probability of matchmaking with reduction in lead-time developed by Joshi and Kumar (2012). The study presents an illustration of matchmaking using a web portal, and demonstrates the MCDM methodology.*

## INTRODUCTION

Business to consumer (B2C) markets have made a significant contribution to the commercial development of the internet (Chu *et al., 2007;* Ellis-Chadwick *et al*, 2009*)*. Similarly, consumer-to-consumer (C2C) markets have emerged and are becoming popular in developing countries like India. With the advent of intermediaries like Olx.in, Quikr.com consumers get an access to a platform where they can be a buyer or seller of products or services. The players like OLX mainly focus on developing economies that have immense scope for growth in the next five years. This study helps buyers to search sellers effectively

and efficiently, narrow down to desired matches and enhance sellers' chances of selling through the online portal. This chapter proposes an integrated approach to searching through matching in a digital environment using fuzzy analytical hierarchy process using multiple criteria.

Subsequent sections describe scope of such online classifieds portals and relevant issues raised in the literature, proposed two-sided matching based model, an illustration and conclusion.

## ONLINE CLASSIFIEDS AND LITERATURE REVIEW

India is the third largest nation in internet penetration (almost 28%) in 2015 as per McKinsey's report on 'The Internet's Impact on India' (Gnanasambandam *et al.,* 2012). Internet penetration has also resulted in the spread of e-tailing. While e-tailing is a business to consumer approach online for selling products and services, the consumer to consumer selling that happens through classified advertisements in physical newspapers did not have a major presence online. E-tailing using online classifieds that began in 1990s in the USA have started gaining ground in India too. Traditional offline classifieds were significant sources of income for print publications around the world, before classifieds went online. As Internet usage increased worldwide, so did the appeal of the online classifieds industry. In India the key players in the online classified industry such as OLX, Quikr include posts from buyers and sellers in a wide range of categories (jobs, rentals, goods for sale, services, etc.).

Arora (2013) pointed out changing perception of consumer about shopping due to the introduction of internet media. She also suggests that e-retailing typically lacks personal touch, consumers are also concerned about cyber security. Other issues being that bargaining is not possible in e-retailing and there is enormous e-illiteracy among rural India. Due to illiteracy of internet and skepticism of users, e-tailing and online classifieds find it difficult to gain maximum exposure because of user perceptions of website.

Cebi (2013) applied Fuzzy set based the quality evaluation model for the most used shopping websites in Turkey. In this work, the perceived design quality of websites evaluated while considering the interactions among design characteristics. Burke *et al.* (2013) presented findings based on a case study that discover the implementation, use of a low-cost digital technology platform to collect, process, and disseminate information in business-to-consumer practices. Design quality of websites is known to have a positive impact on user attention. Fuzzy set theory is utilized to cope with ambiguity in the linguistic evaluation of the different design characteristics and supports the analysis of the collected data.

Cyr (2013) investigated user perceptions about website design based on Information Content, Information Design, Navigation Design, Visual Design, Website Trust, and Transaction Security across different eight countries. Zuo *et al.* (2013) examines B2C e-commerce services from quality perspective based on human factors engineering. The role of technology is crucial in partner relationship management in today's digital era. Obal and Lancioni (2013) emphasized on maximizing buyer–supplier relations in the Digital Era with possible extensions. Few studies emphasized customer relationship management in business to business context (B2B) (Stein *et al.*, 2013). Weltevreden and Rotem-Mindali (2009) studied effects of C2C portals versus B2C portals on mobility of consumers.

Even though there are few relevant research works published in the context of digital world like C2C, e-tailing, attempt to match requirements of both buyer and seller in online classifieds is in nascent stage. Harrington (2001) comments on searching cost in his paper with emphasizing that online search saves search coast of customer. Few studies delve on what mechanism enhances online search process on e-commerce websites. Joshi and Kumar (2012) attempted to integrate both sided preferences in one

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