Proximity and Matthew Effect in Co-authorship Pattern of Iranian Top Universities
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ABSTRACT
Co-authorship is used to measure scholarly collaborations of countries, institutions, and individuals. It refers to the process in which two or more authors or researchers collaborate with each other to create a joint work through collaboration methods and channels. Although many studies have been conducted to analyze the individual or field co-authorships in Iran, a little have concerned the organisational co-authorships in this country. This study aims to analyze organisational co-authorships among Iranian top universities based on proximity rule and Matthew effect. Data were limited to published articles affiliated to top universities in Iran and extracted from the Web of Science (WoS) database. The co-authorship matrix of these universities was shaped and their relationships were mapped. The “National Co-Authorship Index”, which is the rate of scholarly co-authorships among universities of a country, was calculated. Results show that geographic proximity has important and strong role in co-authorships of Iranian top universities. Top universities tend to collaborate with universities of similar ranking and probably this result confirms the Matthew effect in the collaborations of Iranian top universities. Also, the role of collocation or proximity has been drawn on Iran map. Finally, some suggestions were made to improve the co-authorship system of Iranian universities.

Keywords: Collaboration pattern; Matthew effect; Proximity; Collocation, Co-authorship index.

INTRODUCTION
Scientific community is a combination of information resources, creators, and users of these resources. The community is the foundation of acquiring knowledge and scientific communication and its survival and continuity requires a stable relationship among the elements of a scientific community and these relationships are formed formally and informally in local, national and global levels (Hart 2000). Scholarly collaboration and particularly co-authorship that began with Price and Beaver’s (1966) study, have been studied by many scientometricians (Merton 1973; Melin 2000; Zitt, Bassecoulard and Okubo 2000; Garg and Fathi 2001; Liang et al. 2003; Wagner-Dokler 2001; Glänzel and de Lange 2002; Meyer and Bhattacharya 2004; Bozeman and Corley 2004; Wagner and Leydesdorff 2005; Bookstein, Moed and Yitzhaki 2006; Yamashita and Okubo 2006; Fry 2006; Persson, Glänzel and Danell 2004; He 2009; Zimmermann, Glänzel and Bar-Ilan 2009). Because of the participation of different people or organisations in a collaborative work

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