

Analysis and Intellectual Structure of the Multi-Factor Authentication in Information Security

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Abstract: This study presents the current state of research on multi-factor authentication. Authentication is one of the important traits in the security domain as it ensures that legitimate users have access to the secure resource. Attacks on authentication occur even before digital access is given, but it becomes quite challenging with remote access to secure resources. With increasing threats to single authentication schemes, 2Factor and later multi-factor authentication approaches came into practice. Several studies have been done in the multi-factor authentication discipline, and most of them proposed the best possible approaches, but there are very limited studies in the area that can comprehend all these innovative and effective approaches. Using Web of Science data of the research publications on the topic, the study adopted the bibliometric approach to find the evolution of authentication in the security domain, especially multi-factor authentication. This study finds the impact of the research in the selected domain using bibliometric analysis. This research also identifies the key research trends that most of the researchers are paying attention to. The highest number of publications on multi-factor authentication were published in 2019 while the highest number of citations were received in 2014. United States, India, and China are the leading countries publishing the most on multi-factor authentication.

Keywords: Multi-factor authentication; bibliometrics; scient metrics; authentication; information security

1 Introduction

The security domain is getting a lot of attention since the last decade due to the increased number of attacks, reliance on wireless and remote setup, and especially the movement of financial transactions to online mediums. A lot of efforts have been made in the area of security by the introduction of passwords, encryption, hashing, biometric authentication, and the list goes on. Still, lack of security awareness,



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