UNDERSTANDING THE ROLE OF INFLUENCERS IN SOCIAL MEDIA: SELECT STUDIES USING BIG DATA ANALYTICS

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by

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CERTIFICATE

This is to certify that the thesis titled **Understanding the Role of Influencers in Social Media: Select Studies using Big Data Analytics**, submitted by **Purva Grover**, to the Indian Institute of Technology Delhi for the award of the degree of **Doctor of Philosophy**, is a bonafide record of the research work done by her under my supervision. The contents of this thesis, in full or in parts, have not been submitted to any other Institute or University for the award of any degree or diploma. Material wherever borrowed has been duly acknowledged.

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Purva Grover

ABSTRACT

In this era of digital economy, social media allows users to exchange and share their ideas and opinions in virtual communities without meeting physically. Social media is decentralized and deinstitutionalized and at the same time networked as well as interactive (Bechmann and Lomborg, 2013; Boynton and Richardson, 2016; Ellison and Boyd, 2013). Popular social media platforms, Facebook, LinkedIn, and Twitter had been used by millions of people around the globe (Kane et al., 2014). The motivation for this thesis is analysing the technology mediated social participation on social media platforms and to understand how social influence works within virtual communities. A person or an organization using social media to influence is called as influencer. A person or an organization getting influenced is called as influencee. For exploring this domain, four related studies have been undertaken through case studies. Firstly, we explore how social media usage by presidential candidates, Donald Trump and Hillary Clinton is influencing the electoral preferences (USA election 2016). Secondly we explore how the messages posted by corporate and political leaders influence knowledge on sustainability development goals (SDGs). Thirdly, we explore how tweeting on technology (health and blockchain) by corporates, bloggers, news agencies and technology adopters is influencing technology diffusion in the society from an awareness viewpoint. Lastly we explore how mobile wallet service providers posting on social media influence user retention and engagement. Based on the intensive systematic literature review study, four research gaps had been highlighted. These research gaps represents the area where more research is needed with respect to social media influence on individual, organisation and society. These gaps were: (a) cultural, national, and geographical setting; (b) social network analysis; (c) collective sense making; and (d) 360 degree analysis of social media campaigning. For investigating technology mediated social participation five theories had been combined as the theoretical foundation for the thesis, uses and gratification theory (Blumler and Katz, 1974), social capital theory (Putnam, 1993), social cognitive theory (Bandura, 1986), acculturation (Redfield, Linton and Herskovits, 1936) and diffusion of innovation theory (Rogers, 1995). The data for the studies had been extracted from Twitter on the basis of four parameters influencer, influencee, location and time. For data analysis, descriptive analysis, geo-spatial analysis, visual analytics, big data analytics, text analytics, social network analysis and statistical testing had been used. The social media influence can be of two types positive and negative, which can be further divided into active and passive. The positive and negative refers to intent adopted by influencee's and active and passive refers to the attempts made by influencer in influencing influencee. This thesis captures two

positive passive instances, these were, posting by Fortune corporates and political leaders on SDGs. Positive passive can be characterized by general favourability among their followers. Thesis captures three positive active instances, these were, (a) promotion of services by mobile service providers (Paytm) through campaigns, contests and cashbacks; (b) promotion of sustainability by social influencer corporates for raising reputation in society; and (c) Trump's activities on Twitter during US Election 2016. Positive active influence can be characterized on Twitter by more retweets and likes, and through echo chamber effects. Thesis captures one negative active instance, which was of Clinton activities (attacking style of communication) on Twitter during USA Election 2016. Negative active influence can be characterized through argumentation effect. Future researchers can use the thesis for extracting insights from social media platforms related to socio-technical perspective. This study contributes to different research stream such as the social media influence, technology mediated social participation, computer-mediated communication, cascading information in networks, marketing, social psychology of online users and information systems. The theoretical contribution and implication of the thesis had been highlighted along with limitation and future work.

KEYWORDS: Social media; Twitter; Computer mediated communication; Technology mediated social participation; Social technical perspective

सार

डिजिटल अर्थव्यवस्था के इस युग में, सोशल मीडिया उपयोगकर्ताओं को आभासी समुदायों में अपने विचारों का आदान-प्रदान करने और साझा करने की सुविधा देता है। सोशल मीडिया विकेंद्रीकृत है, संवैधानिक और एक ही समय में नेटवर्क के साथ-साथ इंटरैक्टिव है (बेचमन और लोम्बॉर्ग, 2013; बॉयटन और रिचर्डसन, 2016; एलिसन और बॉयड, 2013)। लोकप्रिय सामाजिक मीडिया प्लेटफॉर्म, फेसबुक, लिंक्डइन और ट्विटर का उपयोग लाखों लोग करते हैं (केन एट अल, 2014)। इस थीसिस के लिए प्रेरणा सोशल मीडिया प्लेटफॉर्म पर प्रौद्योगिकी की मध्यस्थता वाली सामाजिक भागीदारी को समझना है और यह समझने के लिए कि सामाजिक प्रभाव आभासी समुदायों में कैसे काम करता है। किसी व्यक्ति या संगठन को प्रभावित करने के लिए सोशल मीडिया का उपयोग करने वाले को प्रभावितकर्ता कहा जाता है। एक व्यक्ति या एक संगठन जो प्रभावित हो रहा है, उसे प्रभावकारक कहा जाता है। इस डोमेन की खोज के लिए, केस स्टडी के माध्यम से चार संबंधित अध्ययन किए गए हैं। सबसे पहले, हम पता लगाते हैं कि राष्ट्रपति पद के उम्मीदवारों, डोनाल्ड ट्रम्प और हिलेरी क्लिंटन द्वारा सोशल मीडिया का उपयोग चुनावी प्राथमिकताओं (यूएसए चुनाव 2016) को कैसे प्रभावित कर रहा है। दूसरे हम यह पता लगाते हैं कि कॉर्पोरेट और राजनीतिक नेताओं द्वारा पोस्ट किए गए संदेश स्थिरता विकास लक्ष्यों (एसडीजी) पर जानकारी को कैसे प्रभावित करते हैं। तीसरा, हम यह पता लगाते हैं कि कॉरपोरेट्स, ब्लॉगर्स, समाचार एजेंसियों द्वारा प्रौद्योगिकी (स्वास्थ्य और ब्लॉकचेन) पर ट्वीट करना समाज में एक जागरूकता के दृष्टिकोण से प्रौद्योगिकी के प्रसार को कैसे प्रभावित कर रहा है। अंत में हम यह पता लगाते हैं कि मोबाइल वॉलेट सेवा प्रदाता सोशल मीडिया पर पोस्ट करने वाले उपयोगकर्ता के प्रतिधारण और जुड़ाव को कैसे प्रभावित करते हैं। गहन व्यवस्थित साहित्य समीक्षा अध्ययन के आधार पर, चार शोध अंतरालों पर प्रकाश डाला गया है। ये शोध अंतराल उस क्षेत्र का प्रतिनिधित्व करते हैं जहां व्यक्तिगत, संगठन और समाज पर सोशल मीडिया के प्रभाव के संबंध में अधिक शोध की आवश्यकता है। ये अंतर हैं: (ए) सांस्कृतिक, राष्ट्रीय और भौगोलिक सेटिंग; (बी) सामाजिक नेटवर्क विश्लेषण; (सी) सामूहिक अर्थ बनाना; और (डी) सोशल मीडिया कैंपेनिंग के 360 डिग्री विश्लेषण। सामाजिक मध्यस्थता में प्रौद्योगिकी की जांच के लिए, पांच सिद्धांतों को थीसिस के लिए सैद्धांतिक आधार के रूप में जोड़ा गया है, उपयोग और संतुष्टि सिद्धांत (ब्लमलर और काट्ज़, 1974), सामाजिक पूंजी सिद्धांत (पुत्नाम, 1993), सामाजिक संज्ञानात्मक सिद्धांत (बंडुरा, 1986), उच्चारण (रेडफील्ड, लिंटन और हर्शकोविट्स, 1936), और नवाचार सिद्धांत का प्रसार (रोजर्स, 1995)। प्रभावितों, प्रभाव, स्थान और समय जैसे मापदंडों का उपयोग करते हुए, अध्ययन के लिए डेटा ट्विटर से लिया गया है। डेटा विश्लेषण के लिए, विवरणात्मक विश्लेषण, भू-स्थानिक विश्लेषण, दृश्य विश्लेषण, बिग डेटा एनालिटिक्स, पाठ विश्लेषण, सामाजिक नेटवर्क विश्लेषण, और सांख्यिकीय परीक्षण का उपयोग किया गया है। सोशल मीडिया का प्रभाव दो प्रकार का हो सकता है: सकारात्मक और नकारात्मक; जिसे आगे सक्रिय और निष्क्रिय में विभाजित किया जा सकता है। सकारात्मक और नकारात्मक का तात्पर्य इन्फ्लुएंसी द्वारा अपनाए गए इरादे से है और सक्रिय और निष्क्रिय इन्फ्लुएंसी को प्रभावित करने में प्रभावित द्वारा किए गए प्रयासों को संदर्भित करता है। यह थीसिस दो सकारात्मक निष्क्रिय उदाहरणों को पकड़ती है: ये फॉर्च्यून कॉर्पोरेट्स और राजनीतिक नेताओं द्वारा पोस्टिंग हैं SDGs पर। उनके अनुयायियों के बीच सामान्य फ़ेवरबेलिटी सकारात्मक निष्क्रिय की विशेषता है। थीसिस तीन सकारात्मक सक्रिय उदाहरणों को पकड़ती है, (ए) अभियान, प्रतियोगिता और कैशबैक के माध्यम से मोबाइल सेवा प्रदाताओं (पेटीएम) द्वारा सेवाओं का प्रचार; (बी) समाज में प्रतिष्ठा बढ़ाने के लिए सामाजिक प्रभावकार कंपनियों द्वारा स्थिरता को बढ़ावा देना; और (सी) अमेरिकी चुनाव 2016 के दौरान ट्विटर पर ट्रम्प की गतिविधियाँ। सकारात्मक सक्रिय प्रभाव को ट्विटर पर अधिक रीट्वीट और लाइक द्वारा देखा जा सकता है, और इको चैम्बर प्रभावों के माध्यम से। थीसिस एक नकारात्मक सक्रिय उदाहरण को कैप्चर करता है, जो यूएसए इलेक्शन 2016 के दौरान ट्विटर पर क्लिंटन की गतिविधियों (संचार की हमलावर शैली) का था। नकारात्मक सक्रिय प्रभाव को तर्कों के प्रभाव से देखा जा सकता है। भविष्य के शोधकर्ता सामाजिक-तकनीकी परिप्रेक्ष्य से संबंधित सोशल मीडिया प्लेटफार्मों से अंतर्दृष्टि निकालने के लिए थीसिस का उपयोग कर सकते हैं। यह अध्ययन विभिन्न अनुसंधान स्ट्रीम में योगदान देता है जैसे, सोशल मीडिया का प्रभाव, प्रौद्योगिकी मध्यस्थता सामाजिक भागीदारी, कंप्यूटर के

मध्यस्थता द्वारा संचार, नेटवर्क में कैस्केडिंग इनफार्मेशन ,विपणन, ऑनलाइन उपयोगकर्ताओं और सूचना प्रणालियों का सामाजिक मनोविज्ञान। थीसिस के सैद्धांतिक योगदान और निहितार्थ पर प्रकाश डाला गया है और परिसीमन और भविष्य के काम का उल्लेख किया गया है।

कीवर्ड: सोशल मीडिया; ट्विटर; कंप्यूटर के मध्यस्थता द्वारा संचार; प्रौद्योगिकी की मध्यस्थता की सामाजिक भागीदारी; सामाजिक तकनीकी परिप्रेक्ष्य

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ABBREVIATIONS

CEOs	Chief Executive Officers
SDGs	Sustainable development goals
CSR	Corporate social responsibility
CR	Corporate reputation
UN	United Nations
NOPO	No poverty
ZERO	Zero hunger
GOOD	Good health and well-being
QUAL	Quality education
GEND	Gender equality
CLEA	Clearwater and sanitation
AFFO	affordable and clean energy
DECE	Decent work and economic growth
INDU	Industry, innovation and infrastructure
REDU	Reduced inequalities
SUST	Sustainable cities and communities
RESP	Responsible consumption and production
CLIM	climate action
LIFW	Life below water
LIFL	Life on land
PEAC	Peace justice and strong institutions
PART	Partnerships for the goals
RO	Research objective