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**Title: Exploring the acceptance of social media: a set-theoretic analysis approach**

**Purpose** - This developmental paper aims to unravel the causal complexity associated with acceptance and non-acceptance of social media by Small-and-Medium Enterprise (SMEs) users.

**Design/methodology/approach** - The paper uses a quasi-experimental design logic based on the analysis of multiple cases with each case replicating prior findings either literally (literal replication) or theoretically (theoretical replication). The study uses some early survey data informed by an innovative, set-theoretic approach to distil commonalities within the same types of cases and differences across distinct types of cases.

**Findings** - The paper shows the causal asymmetry between acceptance and non-acceptance of social media. While customer attraction, raising the company's profile and learning to use social media effortlessly lead to the acceptance of social media, non-acceptance requires finding social media not easy to use in combination with a lack of improvement of customer relations and work not becoming easier to do.

**Research limitations** – The paper uses purposive sampling and self-reported measures which undermine the generalizability of its findings. Future research should use probability sampling and more objective measures drawing on prior exploratory research.

**Originality/value** - Theoretical, practical, and methodological implications are discussed by highlighting the commonalities across positive and negative configurations of acceptance and emphasizing the key role that being a learning organization plays in a context of continuous updates and burgeoning volumes of data.

**Key words** Social media, Qualitative comparative analysis; Fuzzy sets; Case study method; Technology acceptance

**Paper type** Research paper

**Introduction and key findings**

The acceptance of social media by British Small and Medium Enterprises (SMEs) is an underexplored area of research (Jussila et al., 2014; Michaelidou et al., 2011). Yet SMEs are the backbone of the British economy (Prowle, 2012) accounting for 99.3% of all private sector businesses, providing 60% of private sector employment, and achieving 52% of all private sector turnover in the UK (Federation of Small Businesses, 2018). In the modern business environment where organizations accumulate increasing volumes of data from a sprawling variety of sources and at fast speeds (Mills, 2012), limited research is currently devoted to the enablers and barriers to the acceptance of social media, such as "the motivation to accept or intention to use the technology for particular purposes" (von Krogh, 2012: 160). Notwithstanding this paucity of studies, some important lines of enquiry have recently emerged in the information systems field (Aral et al., 2013; Eze et al., 2014; Günther et al, 2009; Järvinen et al., 2012; Jussila et al., 2014; Kallinikos et al., 2013; Kane et al., 2014; Kim et al., 2013; Leonardi et al., 2013; Mandal and McQueen, 2012; Michaelidou et al., 2011; Schoendienst et al., 2011; Xiaojuan et al., 2013).

Some scholars, for instance, have argued that social media promote exploratory learning (Hu and Schlagwein, 2013), that is, the acquisition of new knowledge in the form of customer expertise by helping businesses patrol user-generated content more efficiently (Larson and Watson, 2011), take up marketplace information more quickly (Jansen et al., 2009) and make Business-to-Business (B2B) communications more effective (Michaelidou et al., 2011). Similarly, other scholars have argued that engaging customers and improving traffic flow to the SMEs' website are the primary routes towards realizing business value from the use of social media (Stockdale et al., 2012). Yet building enduring relationships and improving website traffic are time-consuming activities that require engagement with both existing and prospective customers (Ibid). Knowing why customers are online and managing the interaction

with them can put a strain on employees' attention as employees must attend to many information inputs which can translate into cognitive overload and, possibly, discontinued use of social media in the workplace (Bucher, et al., 2013; Borchardt, 2013; Järvinen et al., 2012; Leonardi et al., 2013). In addition, the embeddedness of social media within larger ecologies of search engines, recommendation engines, RSS feeds, web analytics tools and other web technologies (Hanna et al., 2011; Kallinikos et al., 2013; Kane et al., 2014) can create a further cognitive strain on SMEs because it entails constant adaptation to automatic updates in terms of new "features, policies, and applications" (Hogan and Quan-Haase, 2010: 309).

To grapple with the perverse dynamics that underpin the acceptance of social media by British SMEs, we set out to select a purposive sample of B2B SMEs. The rationale for choosing B2B SMEs is twofold: first, B2B e-commerce is valued at three and half times more than Business-to-Consumer (B2C) e-commerce (Michaelidou et al., 2011). Yet the diffusion of social media among B2B organizations has been slow compared to their B2C counterparts (Ibid); second, our purposive sample encompasses early adopter SMEs that used a wide range of social media tools (e.g., Twitter, LinkedIn, Blogs, Facebook, YouTube, Forum Discussion and other tools) and perceived such tools as being relevant for their particular business sectors. Accordingly, the SMEs under investigation are perfectly comparable because they are all early social media adopters whose thresholds in terms of number of employees and turnover fall within the EU guidelines (DG Enterprise and Industry, 2005).

In what follows, we explore the causal factors that are relevant for B2B SMEs' acceptance and adaptation to social media with a particular focus on the way they combine to produce the outcome of interest. To achieve this goal, we deploy a two-pronged approach. First, we capture the perverse dynamics of B2B SMEs' acceptance of social media by adopting a new methodology that is based on set-theoretic methods and configuration theories (Merali et al., 2012: 132). This methodology removes the homogenizing assumption that causal variables

have the same effect on the outcome regardless of the values of other variables with which they combine (Ragin, 2008; Rivard and Lapointe, 2012; Schneider and Wagemann, 2012). Second, we implement this methodology on the back of extant scholarship that has studied issues of technology acceptance for over two decades (Davis, 1989; Davis et al., 1989). More specifically, we deploy a set-theoretic lens of a revised version of the technology acceptance model (TAM) (Mandal and McQueen, 2012) to study the dynamic use of social media in the workplace. Though this model has been tested from a statistical perspective (e.g., Gefen et al., 2000), scholars are yet to couch this model in set-theoretic terms to scrutinize issues of dynamic use rather than initial adoption. Hence, we aim to apply the revised TAM in a novel way to shed a new light on hitherto underexplored issues.

The Tables below highlight the causal asymmetry of our findings.

**Table I**

Solution formula for positive cases (* = Indicates logical AND, that is the conjunction or intersection of sets. Consistency necessity >0.95; consistency sufficiency:> 0.78; necessary conditions in bold) [†]

| | Raw Coverage | Unique Coverage | Consistency |
|---|---|---|---|

## Data presented at conference

Solution coverage > 0.90
Solution consistency >0.90

Similar solutions in terms of necessary and sufficient conditions and parameters of fit could be arrived at when setting a consistency threshold for sufficiency of 0.85 or 0.90. By similar we mean solutions that are in a clear subset/superset relation and parameters of fit that do not warrant different substantive interpretations (Cf. Schneider and Wagemann 2012: 285-286). However, only the 0.79 consistency sufficiency threshold warrants no untenable assumptions (i.e., consistency levels that meet our theoretical expectations about necessity and sufficiency).

**Table II**

Solution formula for negative cases (~ = indicates absence of the condition in question; * = Indicates logical AND, that is the conjunction or intersection of sets. Consistency necessity: 0.90; consistency sufficiency: 0.89; necessary conditions in bold) [†]

| | Raw Coverage | Unique Coverage | Consistency |
|---|---|---|---|

## Data presented at conference

Solution coverage: 0.83
Solution consistency: 0.89

Similar solutions in terms of necessary and sufficient conditions and parameters of fit could be arrived at when setting a consistency threshold for sufficiency of 0.85. By similar we mean solutions that are in a clear subset/superset relation and parameters of fit that do not warrant different substantive interpretations

(Cf. Schneider and Wagemann 2012: 285-286). However, only the 0.89 consistency sufficiency threshold warrants no untenable assumptions (i.e., consistency levels that meet our theoretical expectations about necessity and sufficiency).

Our findings also reveal that the conditions leading to the acceptance of social media are different from those leading to non-acceptance. A perfectly symmetric and short-hand recipe for the absence of the outcome of interest would reveal the absence of three causal ingredients, namely, 1) the lack of attraction of new customers, 2) the absence of an enhanced company's profile, 3) the presence of one of the necessary conditions for non-acceptance of technology (i.e., non-improved relations, non-ease of working, non-ease of learning, non-skillfulness or non-ease of interaction) or, alternatively, the lack of an enhanced business performance. Yet, as Table VIII shows, the combination of the necessary conditions for non-acceptance of social media can work in conjunction with either the absence of an enhanced business performance, or the lack of an improved company's profile, or the lack of attraction of new customers to determine non-acceptance of social media. Though all pathways lead to non-social media acceptance, the lack of attraction of new business customers is the only empirically non-redundant route to the outcome of interest thanks to its positive unique coverage (i.e., 0.04).

Therefore, the analysis of the negative cases reveals that: a) non-ease of use is a relevant pre-requisite for non-social media acceptance [3]; b) the lack of attraction of new customers plays a key empirical role in determining non-social media acceptance (see Table VIII). How do these findings compare with extant research?

Several scholars have called for a clear definition of acceptance (Benbasat and Barki, 2007; Schwarz and Chin, 2007; Straub and Burton-Jones, 2007). For example, in their commentary, Straub and Burton-Jones (2007: 224) have questioned whether TAM researchers really wish to explain system usage because "the acceptance construct itself has never been clearly delineated". Similarly, Schwarz and Chin (2007) have demurred at the use of metrics based on amount, extent, or frequency of use and encouraged a broader conceptualization of usage beyond initial adoption and throughout the entire lifecycle "where other forms of acceptance may predominate or other usage goals such as learning, adaptation, and optimization of IT

become the central thrust" (Ibid: 233). Likewise, Benbasat and Barki (2007: 215) have suggested that researchers should "broaden their perspective of system use from one that exclusively focuses on a "narrow" amount view of users' direct interaction with systems to one that also includes users' adaptation, learning, and reinvention behaviors around a system". Echoing earlier calls to include the notions of adaptation, reinvention, and learning (Agarwal, 2000), our findings show that acceptance conceived of as a process of dynamic use is closely influenced by the ease of learning to use social media. Indeed, the analysis of the negative cases corroborates this finding as it shows that non-ease of use in general and non-ease of learning in particular are relevant pre-requisites for non-acceptance.

But in which context can a technology which is intrinsically easy to use turn out to be non-easy to use? Social media are embedded within larger ecosystems (Hanna et al., 2011; Kallinikos et al., 2013; Kane et al., 2014), undergo constant change (Hu and Schlagwein, 2013; Wisniewski et al., 2014) and call for fluid managerial practices (Huang et al., 2013). As the underlying technical and social features change, it is likely that the cognitive effort associated with social media usage is bound to increase because of relentless updates in terms of new features, policies, and applications. Automatic and habitual behaviors are constantly being disrupted as the mandatory transition to the new Facebook interface reminds us only too well (Wisniewski et al., 2014). Furthermore, attracting new customers and raising the company's profile can put an additional strain on SMEs' attention because they are bound to produce a growing number of leads (Jussila et al., 2014). Given these perverse dynamics, if B2B SMEs' staffs are not trained or supported with appropriate tools, they will perceive social media as less easy to use. As social media become less easy to use, they simultaneously lead to impoverished relations with customers while making work more difficult to do. Given this cognitively-taxing context, if social media do not attract new customers, B2B SMEs will discontinue using them. This vicious cycle implies that social media may not be easy to use even though their intrinsic

features are such that they objectively have a clear, simple, intuitive, and easy to navigate interface. In the words of Ives' et al. (1983: 786): "a good information system perceived by its users as a poor system is still a poor system".

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