Microblogging and Authoritarian Governance Regimes: Results from a Survey on the use of Sina Weibo by Chinese Citizens

Qiaomei Yang, Vincent Homburg, Rebecca Moody and Victor Bekkers
Erasmus University Rotterdam, The Netherlands
Erasmus School of Social and Behavioral Sciences, Rotterdam, The Netherlands
Department of Public Administration and Sociology, Rotterdam, The Netherlands
yang@essb.eur.nl
bekkers@essb.eur.nl
homburg@essb.eur.nl
moody@essb.eur.nl

Abstract: Until now, explanations of citizens' online behaviors in the Western world have been scarce, with accounts of analyses of citizens' behaviors in authoritarian governance regimes in the East being even scarcer. This study contributes to the understanding of which factors contribute to citizens' use of social media in state-citizen communication patterns in authoritarian governance regimes, with a focus on Chinese citizens' use of Sina Weibo microblogs. Based on the analysis of 1572 questionnaires collected from citizens living in Hunan (People's Republic of China), the study quantifies the factors that impact (1) Chinese citizens' intentions to use Sina Weibo and (2) actual use of Sina Weibo in state-citizen communication patterns. Results indicate that peer pressure and trust in individual civil servants positively impacts use of Government Sina Weibo microblogs by citizens, anxiety negatively impacts citizens' use, whereas institutional trust does not explain citizens' use. Use intentions mediate the relations between respectively peer pressure and interpersonal trust in officials, and actual use. The study contributes to the literature on trust and anxiety (especially in the Chinese society) in relation to the use of microblogging by Chinese government, and adds to our understanding of the role of microblogging in state-citizen communication patterns in authoritarian governance regimes in general, and in the Chinese governance system in particular.

Keywords: social media, Sina Weibo, adoption, trust, social influence, e-government, China

1. Introduction

Microblogs like Twitter™, allow governments to redesign ways in which they communicate with citizens and businesses (Bertot, Jaeger and Grimes 2012, Mergel, Bretschneider 2013). Microblogs, or more generally social media, refer to online platforms allowing users to continuously update target audiences of activities, concerns and opinions, and responses to other users' updates. Perhaps to the surprise of Western observers, the government of the People's Republic of China, a state with the largest national social media user community, is a frontrunner in the use of microblogging (Ma 2014). Since 2011, Chinese government organizations have started communicating to citizens through hundreds of thousands of government microblogs (Schlæger, Jiang 2014, Chan et al. 2012). This new way of communicating to citizens is partly due to especially local governments' attempts to improve service quality and legitimacy and to respond to perceived pressure from the general public, and is arguably partly due to central government's attempts to have microblogs 'occupied' by local officials in order to monitor public opinion ('gauge the water') and, through trial and error, curtail grassroots initiatives such as anti-corruption movements and environmental pressure groups (Schlæger, Jiang 2014).

The international academic community has, in various ways, reported on the phenomenon of government uses of microblogs in China.

A first strand in the literature concerns itself with the study of an emerging online political discourse in China generally (Schlæger, Jiang 2014, Yang 2009) including but not limited to self-censorship by providers (Sullivan 2012) and Chinese regulatory authorities' practices to measure, shape and curtail public opinions (Yang 2009, Cairns, Carlson 2016, Guo, Jiang 2015, Xu 2015), especially during natural disasters (Deng et al. 2015, White, Fu 2012) or diplomatic incidents (Cairns, Carlson 2016, Jiang 2016). A second strand relates to the study of organizational and technological factors (such as intergovernmental competition, fiscal health, organizational IT capability) that explain the diffusion of microblogs among government organizations (Ma 2014, Zhang et al. 2017).

Little attention (arguably with the exception of Medaglia and Zhu, 2016) has been given to the citizen side of government social media uses in general (Welch, Fulla 2005), and in China in particular. The context of China is of special interest because of its huge potential and actual number of social media users, but also because studying social media uses in China might reveal how new forms of deliberation and communication fit into state-citizen communication patterns of authoritarian governance regimes. In sum, with this article, we attempt to fill this gap by answering the following research question: "to what extent do Chinese citizens use government-owned microblogs, and how can this 'use' be explained?". This study builds upon explanatory models of technology adoption by citizens (Carter, Bélanger 2005, Horst, Kuttschreuter and Gutteling 2007), and adds insights from the literature on trust and governance in China.

2.   Context: e-government and social media in China

China is a unitary country with an authoritarian governance system, structured into various administrative tiers. Since 2011 (the starting point for Chinese government microblogging), upper-tier pressure in government has been put on lower-level governments and politicians to adopt microblogging in order to achieve a form of 'responsive authoritarianism' (Chen, Pan and Xu 2016). Schlæger and Jiang (Schlæger, Jiang 2014) and Ma (Ma 2014) identified three motivations for this change. A first one is simply competition between local governments and politicians fueled by politicians' and administrators' reputational, financial and career incentives (see also Homburg, Dijkshoorn and Thaens (2014) for a comparable account of technology diffusion in Western municipalities). A second one is an explicit motivation, especially held by line agencies and e-government centers, to deliver services tailored to citizens. A third one is a set of motivations associated with increasing political legitimacy and maintaining social stability during crises and incidents, especially held by propaganda departments and local police departments.

In practice, although microblogs are expected to result in two-way, transparent dialogues between governments and citizens, communication between Chinese government organizations and citizens is often unidirectional and not very interactive (Hao et al. 2016), a finding that is consistent with results from studies of government use of microblogging in Australia (Alam, Lucas 2011) and the United States (Waters, Williams 2011).

3.   Review of extant adoption models

3.1 UTAUT and its extensions for application to government services in China

In the literature on adoption of technologies by individual users, a frequently used starting point is the revised UTAUT (Unified Theory of Acceptance and Use of Technology) (Venkatesh et al. 2003, Venkatesh et al. 2016, Venkatesh, Thong and Xu 2016). UTAUT (Venkatesh, Thong and Xu 2016) integrates various user acceptance models into a model that features an individual's actual use of a specific technology as an outcome variable and a set of predictors like the user's expectancy, peer pressure, habit and availability of resources. UTAUT has been used to explain, among other things, consumers' use of e-banking (Zhang, Wang 2012, Wang, Cho and Denton 2017) and mobile commerce (Lu et al. 2017) in China as well as citizens' use of government websites in the United States (Carter, Bélanger 2005, Carter, Schaupp 2009, Carter et al. 2011), Pakistan (Azam, Qiang and Abdullah 2013), Turkey (Kurfali et al. 2017), Malaysia (Taiwo, Downe and Loke 2014), the Netherlands (Horst, Kuttschreuter and Gutteling 2007), India (Rana et al. 2016), China (Mensah 2017) and Hong Kong (Venkatesh et al. 2016).

Over time, studies in which UTAUT-like approaches are applied to government uses of ICTs have displayed a greater sensitivity towards more institutional characteristics of citizens' adoption decisions such as risk perception (Carter et al. 2011, Min, Ji and Qu 2008, Wang, Yang and Liu 2012), trust (Carter, Bélanger 2005, Lai, Shi 2015, Kurfali et al. 2017, Weerakkody et al. 2013, Venkatesh et al. 2011, Chong et al. 2012) and technology anxiety (Rana, Dwivedi and Williams 2013).

3.2 Peer pressure

Many studies that attempt to explain a specific technology by users pay attention to users' notions that stretch beyond strictly individual considerations, and give express attention to a potential user's conformation to the expectation of other people. In this study, we follow Venkatesh (Venkatesh et al. 2016) in hypothesizing that peer pressure, defined as the perceived importance of being recognized by others to use a novel technology, impacts an individual's decision to use technology. This leads to the formulation of hypothesis H1a: "Perceived

peer pressure is <u>positively</u> associated with Chinese citizens' use of microblogging to interact with Chinese government".

3.3 Trust

In a more or less vertical relationship between a superior A (a government agency for instance) and a subordinate B (a citizen), trust is associated with B's perception of safety (Carter, Bélanger 2005), resulting from B's subjective belief that A refrains from exploiting B's vulnerabilities (in the presence of A's ability to harm B). When applied to the context of social media in China, trust has at least two meanings.

A first meaning is the belief that an individual citizen has in administrative, legal and societal institutions such as the Chinese Communist Party, government apparatus, councils, courts, associations, media and complaints bureaus (Yang, Tang 2010). We will use the term institutional trust to refer to this kind of trust.

A second meaning of trust is related to a cultural phenomenon that refers to the existence of relational network called *guanxi* (Yen, Barnes and Wang 2011). Guanxi consists of feelings of empathy and solidarity (*ganqing*), reliability and sincerity (*renqing*) and reliance and sincerity (*xinren*) and it can be developed in relations between citizens and government officials to protect citizens against administrative hurdles or unforeseen risks. Guanxi is cultural phenomenon that is developed in interpersonal relationships and it is referred to here as interpersonal trust.

This line of reasoning results in the formulation of hypothesis H1b: "A Chinese citizen's trust in government officials generally is <u>positively</u> associated with Chinese citizens' use of microblogging to interact with Chinese government" and hypothesis H1c: "A Chinese citizen's trust in government institutions generally is <u>positively</u> associated with Chinese citizens' use of microblogging to interact with Chinese government".

3.4 Anxiety and risk

A construct that is somewhat related to the vulnerability aspect of trust is a user's perception or belief in the fallibility of the specific technology he or she is using or is about to be using. In this study, it is assumed that this is closely related to technology anxiety, an individual's general emotion of unease or arousal in the way one deals with technology. Users or citizens can be afraid of repercussions of errors or incompetence in dealing with the system (Rana et al. 2016, Rana, Dwivedi and Williams 2013), in such a way that eventually, the technology is beyond the control of the user. Anxiety, therefore, is a negative affective reaction towards computer use, where repercussions in the case of use of social media in an authoritarian governance system like the Chinese regime may stretch well beyond the use of technology per se; prosecution may follow unappreciated social media activity (Li 2013). This leads to the formulation of hypothesis H1d: "A Chinese citizen's anxiety to use technology to interact with the government is <u>negatively</u> associated with Chinese citizens' use of microblogging to interact with Chinese government".

3.5 Intention to use and use

Venkatesh (Venkatesh et al. 2003, Venkatesh, Thong and Xu 2012) have proposed the Universal Theory of Use and Adoption of Technology (UTAUT) and a subsequent UTAUT2 model as a generic theoretical framework with which the adoption and diffusion of technologies in a specific target population can be explained. One notably characteristic of both UTAUT as well as UTAUT2 is that it is hypothesized that the relation between actual use of a technology and a set of variables indicating both institutional variables (think of trust, anxiety and peer pressure) as more or less utilitarian variables (think of expected benefits) is mediated by the variable 'use intentions'. We follow this line of reasoning and formulate hypothesis H2: "Chinese citizens' intention to use microblogging to interact with Chinese government mediated the relations between peer pressure, interpersonal trust, institutional trust and anxiety on the one hand and actual use of microblogging to interact with Chinese government on the other hand".

3.6 Model development and hypotheses

Based on the literature discussed above, we develop a model to explain Chinese citizens' use of microblogging to communicate with Chinese government. Based on unified models of technology, it is hypothesized that interpersonal trust, institutional trust, and peer pressure are positively related to use of microblogging, anxiety is negatively related to use of microblogging, and citizens' intentions to use mediate the relation between the above predictors and use of microblogging as an outcome.

H1a   Perceived peer pressure is <u>positively</u> associated with Chinese citizens' use of microblogging to interact with Chinese government;

H1b   A Chinese citizen's trust in government officials generally is <u>positively</u> associated with Chinese citizens' use of microblogging to interact with Chinese government;

H1c   A Chinese citizen's trust in government institutions generally is <u>positively</u> associated with Chinese citizens' use of microblogging to interact with Chinese government;

H1d   A Chinese citizen's anxiety to use technology to interact with the government is <u>negatively</u> associated with Chinese citizens' use of microblogging to interact with Chinese government;

H2   Chinese citizens' intention to use microblogging to interact with Chinese government mediated the relations between peer pressure, interpersonal trust, institutional trust and anxiety on the one hand and actual use of microblogging to interact with Chinese government on the other hand.
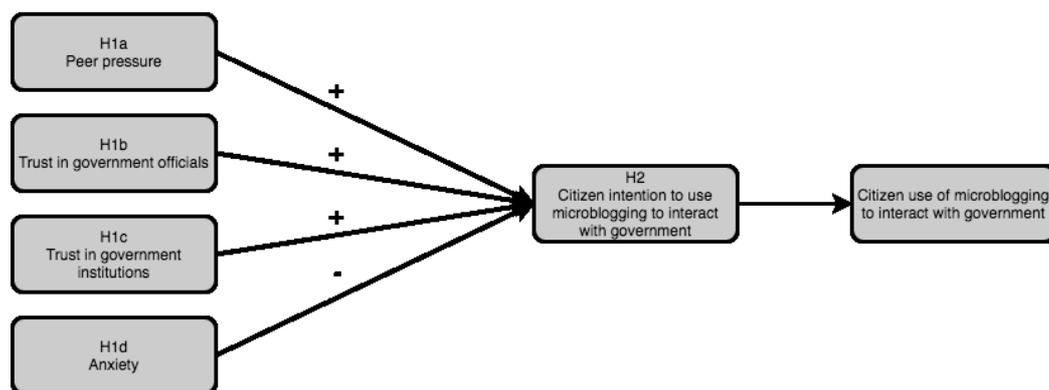

Figure 1: conceptual model based on literature review

The hypotheses are synthesized into a conceptual model that is depicted in Figure 1. Methodology and measurement. To test the hypotheses, the study was conducted through a survey of 71 questions among citizens in the Province of Hunan, located in the South Central part of the Chinese mainland. The focus in the survey was on respondents' use of a specific microblog, Sina Weibo, to communicate with Chinese government. To ensure as much as possible the validity of the measurements, this study adopted and slightly modified related-question items in prior studies for peer pressure (Venkatesh et al. 2003, Venkatesh et al. 2011), interpersonal trust (Poppo, Zhou and Li 2016, Reich-Graefe 2014), institutional trust (Yang, Tang 2010), anxiety (Venkatesh et al. 2011), use intention (Venkatesh et al. 2003, Venkatesh, Thong and Xu 2012) and use behavior (Burton-Jones, Straub 2006). The questionnaire was developed in the English language, translated into Mandarin Chinese by a member of the research team, and then translated back to English by an independent translator so that the quality of the translation could be checked. Furthermore, the questionnaire was piloted among various Chinese students living and working in the Netherlands. Subsequently, various companies specializing in marketing and opinion polling were contacted; perceived sensitivity of the subject matter turned out to be prohibitive for many companies to carry out the survey. Eventually, data were gathered between 13 February and 21 February 2017 by a Shanghai-based survey company using an online survey tool. Responses from 1572 citizens could be recorded. Data were scanned and screened for kurtosis and unengaged responses based on standard deviations of Likert items and time it took for respondents to complete the survey (M = 12.6 minutes, SD = 24.9 minutes). Data from five respondents were dropped because of distrustful characteristics (age). Ten unexpected missing values were replaced by the median of nearby data points, following general data screening guidelines (Gaskin 2017).

4.   Descriptive results

4.1 Demographics

Respondents were 914 men (58%) and 658 women aged 15 to 67 (men: M = 36.9, SD = 8.4; women: M = 34.6, SD = 7.0). the majority of the respondents (86%) reported to be living in an urban area. Professional activities included going to school (3%), working in the public sector (30%), working in the private sector (60%), keeping house (3%), and something else (2%). The highest level of completed education was junior high school and

below (2%), senior high school (8%), college (37%), university (49%) and postgraduate (3%). Monthly salary ranged from less than RMB 2000 (3%; equivalent to about €259, which is 36% of the 2017 monthly median income), 2001-5000 RMB (23%), 5001-8000 RMB (39%), 8001-12000 RMB (27%) and above 12000 RMB (6%; equivalent to about €1556). Table 1 shows the comparison of gender, education level and age compared to Weibo users and the Chinese population.

Table 1: Comparison of characteristics of study sample, Weibo Users and total Chinese population of gender, education and age (see also Medaglia and Zhu 2016; de Wulf 2016; OECD 2014).

Variable	Study sample (n=1572)	Weibo Users	Total 2016 China population
Female	42%	49%	49%
Higher Education	52%	76%	10%
Age <24	2%	49%	29%
Age 24-33	40%	39%	16%
Age 34-45	44%	11%	15%
Age > 46	14%	2%	38%

4.2 Use of social media

With almost all respondents being registered Sina Weibo users (97%), and 72% of all respondents reported to use Weibo services about once a day or more. A logistic regression analysis indicated that gender did not predict frequency of Sina Weibo use ($p = .071$) whereas age ($p < 0,01$), income and education level did (chi square = 94.065, $p < .001$), with df = 10, Nagelkerke's $R^2 = .084$).

Government organizations' Sina Weibo accounts (that is, accounts used with reference to civil service law, excluding accounts opened by Party and organizational cadres) were used by 90% of respondents. Of all respondents, 57% answered they used Government Sina Weibo accounts at least once a week or more, with gender ($p < .001$), age ($p < .001$), income ($p < .001$) and education ($p < .001$) affecting Government Sina Weibo frequency of use (chi square = 213.164, $p<.001$, df = 10, Nagelkerke's $R^2 = .171$).

5. Data analysis and hypothesis testing

Structural equation modeling was used to assess the measurement model and structural model implied by the conceptual model and hypothesis. We tested for discriminant validity of the variables in the model by calculating simple correlations between peer pressure, institutional trust, interpersonal trust and anxiety and concluded on the basis of low correlations (largest $r = .685$ between interpersonal trust and institutional trust) that discriminant validity could be assumed. Then, using AMOS 22, we first constructed a measurement model with initially all items relevant to peer pressure, anxiety, interpersonal trust, institutional trust, intention to use microblogging and actual use of microblogging. We removed items with standardized loadings of less than .6, and constructed a measurement model of six factors with a satisfactory fit (CFI = .941, RMSEA = .034, NFI = .936). Reliability statistics are sported in Table 2. As all variables were recorded using a single survey questionnaire, the results are prone to common method bias. Following Podsakoff et al. (Podsakoff, MacKenzie and Podsakoff 2012) we conducted Herman's single factor test and modeled all items as indicators of a single factor, and we have found, based on the calculated largest variance explained by a single factor being 32.0% , that results were not affected by common method bias.

After having constructed a six-factor measurement model, we modeled the hypotheses into a path analysis structure to test the hypotheses by inspecting (1) overall global fit measures of the model and (2) structural coefficients of single paths using maximum likelihood estimation.

Table 2: Reliability statistics

Construct	Reliability (Cronbach's alpha)
Behavioral intention	.708
Peer pressure	.762
Anxiety	.895
Interpersonal trust	.854
Institutional trust	.891

The overall fit of the model proved to be good (CFI = 1.000, RMSEA = .010, NFI = .999). In order to test the hypothesis, individual paths between variables were inspected and results are depicted graphically in Figure 2. Implications of the estimation of the standardized regression weights for the hypothesis is that hypotheses 1A and 1D receive support, and hypothesis 2 receives support with respect to the mediation of intention between actual use on the one hand and peer pressure and interpersonal trust respectively on the other hand. Hypotheses 1B and 1C do not receive support; also, there is no mediation of intention to use between actual use on the one hand and anxiety and institutional trust respectively on the other hand. In fact, institutional trust does not have an impact on either of the other variables in the model.
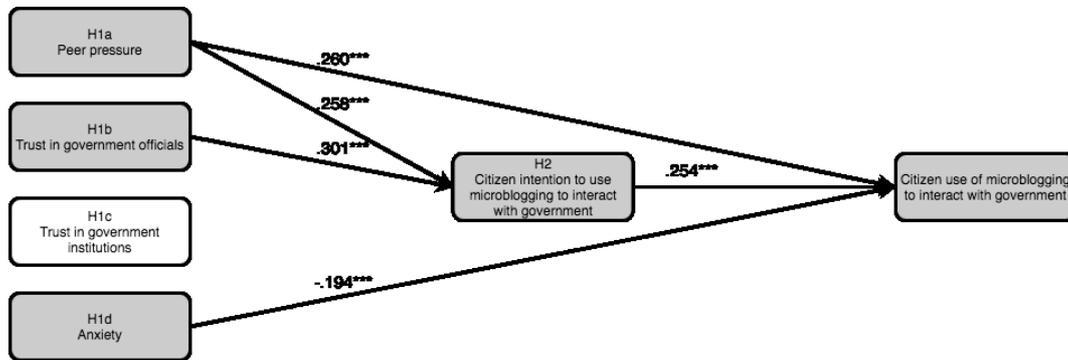

Figure 2: structural model with standardized regression weights (* p<.05; ** p<.01; *** p<.001)

6. Conclusion and discussion

The results reported in this paper show that citizens' use of microblogging (in relation to government) is explained by peer pressure, interpersonal trust in officials and anxiety.

These findings can be interpreted as being in contrast with findings from studies explaining uses of information and communication technologies in general, and of e-government technologies in particular and a relevant question is how to interpret these findings.

One answer could lie in characteristics of 'technology use' being studied. Microblogging, both in a passive (merely following accounts and reading messages) as well as in an active (reacting to and commenting upon other messages) mode of operation, is not targeted at achieving very specific outcomes – buying goods and services online, or getting a license from government. Rather, citizens may follow government-initiated microblogs because of civic responsibility, a sometimes deeply rooted belief of societal participation, and not so much out of a wish to receive an individualized service or to have a specific request fulfilled.

Another possible answer has to do with the societal context in which this study was executed, the province of Hunan in the People's Republic of China, being an authoritarian governance system with a relatively high power-distance score. Citizens in authoritarian governance systems might be intending to use government-initiated microblogging because they perceive they are obliged to do so by officials and fellow-citizens. It should be noted that the analysis showed that trust in institutions did not explain use intentions and use behaviors, but trust in officials did, as well as anxiety that erroneous actions backfired against oneself.

The above findings and subsequent discussions give rise to a number of directions for future research.

The first one is to critically review the use of overly functional, rational technology acceptance frameworks when studying technologies that serve to allow for dialogue between state and citizen. A dialogue between state and citizen might not have a very delineated objective, and therefore these kinds of frameworks might not be the best candidate theoretical framework to explain citizens' uses of those technologies. Additionally, more attention could be paid to why, i.e. towards which goal, citizens use technology, distinguishing between different goals or purposes for use might explain behavior more elaborately. Normative considerations such as citizenship and civic responsibility should be taken into account in order to explain and predict citizens' intentions and behaviors.

The second one is to more precisely conceptualize the multidimensional construct of trust. From the review of the extant literature, it was concluded that trust is a construct that is notoriously difficult to define and measure. In many studies, the construct of 'trust in government' is used; in the context of the current study, the notion of trust in government was divided into (1) trust in officials working inside government and (2) trust in the institutions of government. Trust in officials might be especially relevant for Chinese culture with its emphasis on pervasive interpersonal networks (guanxi). Obviously, greater sensitivity towards diversity in explaining adoption of technologies in realistic contexts is urgently needed.

The third direction is a plea for comparative research of the use of microblogging in various political governance systems. This study has demonstrated the validity of constructs like peer pressure, interpersonal trust and anxiety in an authoritarian governance system like China. The conclusions from this study urge for replication in other contexts, such as Western liberal democracies, or in for instance transitional states in Eastern Europe, in order to come up with more robust, informative and realistic theories about how and why citizens use microblogging and other forms of social media to interact with government – and visa versa.

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