

Social Media Engagement and Chinese international student recruitment: Understanding how UK HEIs use Weibo and WeChat

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Abstract

Using a novel longitudinal methodological design, this is the first study to investigate how and to what extent UK higher education institutions (HEIs) use Chinese social media platforms to engage with users. The data was gathered from examining 163 UK HEIs' use of Weibo public accounts in 2012 and 2018 and WeChat in 2018, combined with student data and university ranking data from secondary sources. The analysis demonstrates a positive association between HEIs' social media engagement and increase in Chinese student numbers studying at those institutions, after taking into account of university reputation. This study identifies effective social media strategies to gain popularity with Chinese users. Interaction and public replies to followers may generate trust and electronic word-of-mouth to attract more users to follow HEIs' social media accounts. The findings contribute to the knowledge in the field of higher education research in relation to cross-cultural communication and social media marketing.

Introduction

Internationalisation is on the agenda of higher education (HE) providers worldwide and critical to the sustainability of HE (Maringe and Foskett, 2012). In the United Kingdom, international students contribute £20 billion to the UK economy, according to a report from the Higher Education Policy Institute (Coughlan, 2018a). However, there are also concerns that the UK may be 'missing out' on overseas students, as nations such as Australia have overtaken the UK as the second most popular destination for overseas students after the United States (Coughlan, 2018b). Since students are now seen and behave as 'customers' of HE products (Budd, 2017; Woodall, Hiller, & Resnick, 2014), HEIs worldwide have recognised that they must develop effective strategies to market themselves to prospective international students (María Cubillo, Sánchez, & Cerviño, 2006). The speed and spread of new communication technologies has enabled HEIs to target overseas students effectively. Increasingly, HEIs are engaging in online

branding activities to sustain a position in a highly competitive higher education market (Kuzma and Wright, 2013). HEIs may communicate their brands and engage with students through their official websites (Chapleo, Carrillo Durán, & Castillo Díaz, 2011) and social media sites (e.g. Facebook, Twitter and YouTube) that link to HEIs' official webpages (Clark, Fine, & Scheuer, 2017; Greenwood, 2012). Accordingly, there is a growing area of research on HEIs' social media interaction on Twitter and Facebook and its relation with recruitment performance (Rutter, Roper, & Lettice, 2016).

In the HE market, China is now the world's biggest source of foreign students (Li, 2017). In the UK, China contributes to almost one third of non-EU students and is the only country showing a significant increase in student numbers (UKCISA, 2018). However, popular social media tools such as Facebook, Twitter and YouTube are not accessible in mainland China due to its censorship policy. Although Chinese international students may use Facebook and Twitter while living abroad, their adoption of these popular western social media tools are less frequent compared with other international students (Saw, Abbott, Donaghey, & McDonald, 2013). Facebook and Twitter are therefore not useful marketing tools for prospective Chinese students. In China, Sina Weibo is the most popular microblogging site and WeChat has become the most popular social networking platform (Che and Ip, 2017). Sina Weibo started in 2009 and by 2012, many UK HEIs and their agents had used Sina Weibo to disseminate information and communicate with Chinese users (Pearce and Zhu, 2013). WeChat (Chinese name WeiXin) is the preferred social networking platform for Chinese students who study abroad (Park, 2016). Many HEIs in China, as well as foreign institutions are using public accounts on WeChat to promote library resources and provide services remotely (Pun, 2015; Xu, Kang, Song, & Clarke, 2015). However, little is known how and to what extent Weibo and WeChat are adopted by western HEIs to engage and interact with Chinese users, and whether social media engagement is associated with student recruitment. This is the first study to investigate the association between HEIs' social media engagement and recruitment of Chinese international students. It identifies effective social media strategies implemented by UK HEIs to gain popularity with Chinese users and provide implication beyond the UK HE market.

Literature Review and Context

Social media marketing for higher education

Social media marketing serves as an effective form of online advertising with interactive features (Tuten and Solomon, 2017). Brands can create a public brand page on social media and interact with followers directly, whilst followers can express their opinion (e.g. by clicking ‘like’ or a thumbs up/down emoji), comment and share brand posts as well as interacting with other users (De Vries, Gensler, & Leeflang, 2012). This has enabled consumers to stay informed of product information as well as sharing their reviews of brands and services, thus producing significant electronic word-of-mouth (eWOM) (Bughin, Doogan, & Vetvik, 2010). HEIs can act as a brand and create a public brand page on Facebook, for example, to disseminate information and engage with various users (e.g. prospective students, current students and alumni). Aside from having a main Facebook page, many HEIs have specific additional brand pages for their faculties, departments, alumni group and sports clubs (Brech, Messer, Vander Schee, Rauschnabel, & Ivens, 2017). Users of HEIs may follow the Facebook page, and interact with the brand by clicking ‘like’, commenting or sharing brand posts. Prospective students use social networking sites to obtain either information or impressions about different HEIs (Hesel, 2013). Faculties’ Facebook pages were found to be effective in sharing information and photos, interacting with students and building a more engaged learning community (Callaghan and Fribbance, 2016; Peruta and Shields, 2017). By 2012, most HEIs in the UK and US had a presence on social media platforms with Facebook, Twitter and YouTube being the most popular sites (Greenwood, 2012; Kelly, 2012).

Social media marketing has become increasingly popular with HEIs to attract future students, to build institutional brands and to engage a diverse group of users. However, existing studies on social media marketing in HE are mainly focused on Facebook and Twitter use (e.g. Bélanger, Bali, & Longden, 2014; Rutter, et al., 2016) with a small number of studies also discussing Instagram, LinkedIn and YouTube (e.g. Clark, et al., 2017; Kuzma and Wright, 2013). While this focus may be appropriate when recruiting home students or those where these platforms are popular, this narrow focus misses out on students who come from places where other social media platforms dominate (Saw, et al., 2013). Countries such as Russia and China have their own localised popular social networking platforms (e.g. Vkontakte in Russia) (Motta and Barbosa, 2018). To date, very few studies have investigated how HEIs in western countries may have adopted localised social media tools of their international students’ country of origins

for marketing purposes that may enhance branding and engagement. Therefore this study addresses an important gap and has implications beyond the UK to HEIs around the globe.

International students and higher education market

In the UK, international students paid the same fees as home students until 1967 which were seen as a liability to the system (Williams, 1987). The cost of fees for all non-European Union (non-EU) students was raised from the 1980s and international students were then viewed as a benefit that contributed to the economy of the HEIs and the state (Bolsmann and Miller, 2008). A number of studies have investigated the factors that might have influenced international students' selection of destinations. The common factors identified to have influenced international students' study destination selection include knowledge and awareness of the host countries and institutions, word-of-mouth recommendations from friends and family, size and influence of alumni, cost of tuition fees and perceived high quality of education and employment prospects (Mazzarol, 1998; Naidoo, 2007). A more recent study found that university reputation is the most important factor for Chinese students' university choices when considering UK HEIs, whilst the cost of study and marketing strategies employed by the universities were not associated with the recruitment of Chinese students (Cebolla-Boado, Hu, & Soysal, 2018). However, marketing strategies investigated in their study were limited to the more traditional ones such as students having attended an open day or seen a useful and appealing university website, and did not consider whether and to what extent universities' social media campaigns were employed (Cebolla-Boado, et al., 2018).

Mainland China is the largest source country of international students across the world (Li, 2017). With sustained economic development in China, it has become more affordable for Chinese families to send their children to study in western countries (Bodycott, 2009). Educational markets also boost tourism markets as the families and friends of international students may visit the host countries for holidays and while attending graduations. It was reported that every 22 additional Chinese visitors create one additional job for UK tourism, and Chinese students alone spend an average of £2 billion in the UK every year, bringing net profits of £390 million to the UK (ChinaDaily, 2015). However, the competition is strong as countries and regions such as Australia and Hong Kong also compete for mainland Chinese HE students. Some European countries such as Finland and Norway offer scholarship or tuition waivers to non-EU/EEA students (Lungu, 2017). Germany has a long history of providing free higher

education. The international student population in German HEIs increased by about 30% between 2012 and 2016 (Matthews, 2017). After the UK referendum result of 23 June 2016, worries of losing EU research funding in the long term emerged across UK academia (Macpherson, 2017). Any reduction in research resource is likely to negatively impact leading and mid-level HEIs (Marginson, 2017). Moreover, post-Brexit, fees for EU students may increase to non-EU students' level. Thus EU students might turn to institutions in their own countries or those with free or lower tuition fees such as Germany and Denmark, which could disadvantage specifically lower-ranked UK HEIs (Marginson, 2017). With UK government and HEIs' China-focused strategies, visa policy changed as the Home Office announced in December 2017 that international students of 2018-19 cohorts from 23 selected UK universities could stay for six months after finishing their Masters course which enabled them to seek work opportunities, while gaining work experience in the UK. Such measures are seen as adding value to the CV of Chinese students (Liu, 2018). In March 2019, the Department for Education (DfE) announced plans that the post-study leave period would be six months for both Undergraduate and Master's students and a year for doctoral students, in order for overseas students to look for work in the UK after graduation (Adam, 2019). The changes of visa policy indicate that the UK government has realised the importance of a sustainable future for international students in the UK and has taken actions to boost recruitment of international students.

Cross-cultural communication with Chinese international students via social media

Many studies investigated the cross-cultural communication skills of international students. Some studies reveal that international students often face language barriers and cultural differences in writing style that could hinder their learning process (Holmes, 2004; Young and Schartner, 2014). Others suggest that international students prefer to stay in familiar cultural and language groups and one of the obstacles for cross-cultural contact is international students' English language ability (Dunne, 2009). Before the Internet age, HEIs were only able to communicate with prospective international students via letters or through open days and agents. In the recent years, the development of new technology has changed this dynamic and enabled a two-way communication between HEIs and international students via social media platforms.

The students who have entered the HE markets in the recent years are termed as the ‘Millennial Generation’ (those born between 1982- 2000) (Howe and Strauss, 2000) or ‘digital natives’ who have grown up with the ICTs (Palfrey and Gasser, 2011). The new generation of international students are able to use the Internet to seek information about their study destination, join alumni groups and form online communities with peers. A study of Chinese international students studying in the US found that those who used and received higher amount of online informational support and emotional support reported lower level of acculturative stress (Ye, 2006). Nevertheless, little is known to what extent HEIs use social media to engage international students, especially Chinese students, who are the biggest international student group in many western countries. Saw, et al. (2013) surveyed international students in an Australian university and found that Chinese students were more recent comers to Facebook and YouTube which suggested that Chinese students had limited access to Facebook and YouTube when they lived in mainland China. Their study also found that Chinese students used Facebook less frequently than other international students and the majority of Chinese students had personal accounts on a social networking site called Renren.

Saw et al.’s study was conducted before 2012 when Renren was popular for university students, while later on, Renren lost its popularity to Sina’s Weibo and Tencent’s WeChat (Che and Ip, 2017). According to iiMedia (2018), WeChat had over one billion active accounts (which accounts for over 70% of China’s population) and Sina Weibo had 317 million active accounts of October 2018. Sina Weibo started in 2009 and is a microblogging site that is ‘celebrity-centric’ with the so called big-V (meaning verified) accounts attracting millions of followers, which play a key role in disseminating breaking news, events and campaigns, and controversial debates on social issues (Wang, Lei, & Xu, 2015). By November 2011, Weibo had gained popularity with overseas users which account for 10% of the total members, whilst a growing number of foreign politicians and celebrities, in the areas such as sports and music industries, started using Weibo to reach out to Chinese audiences (J. Chen and She, 2012). Oversea HEIs’ China offices and their agents likely realised the need to create a public account for the HEIs they represented for promotional purposes. In 2012, Weibo allowed universities to get verified for free by submitting a stamped application—in contrast to the £1,080 fee it cost in 2018. After the verification, a ‘V’ sign is assigned next to the name of the account. In June 2013, the British council organised a one-day workshop that invited a number of experts from Sina Weibo to share their insights on social media marketing, and the attendees of this workshop

were mostly social media officers working for the marketing departments or international offices of various UK HEIs (Y Zhu, 2013).

WeChat was first released in 2011 and in recent years it has become the dominant social networking application for Chinese netizens to chat with friends, share photos, follow official accounts to receive news and information, pay for shopping and so on (Y. Chen, Mao, & Qiu, 2018). Since the magnificent success of WeChat being embedded in Chinese ordinary people's everyday life, a number of UK HEIs have created public accounts. A public account can be created by an individual person or an enterprise. Unlike Weibo, it is much more complicated for foreign universities to get verified as an enterprise on WeChat. To date, according to the author's observation, most UK HEIs on WeChat hold an account as an 'individual'. An individual public account may release maximum one article per day. The number of views of an article is visible to other users. Users can send a comment to the account holder after viewing an article. However, a public account may enable or disable the view of selective comments to other users. Based on the author's personal experience running a number of social media accounts for HEIs, the articles published on WeChat public account require much more work than posting a Facebook or Twitter message, as it is more like online newspaper articles which requires significant time and effort writing original content and editing and formatting texts with images and videos.

Research Questions and Hypotheses

Increasing numbers of HEIs have adopted social media platforms in order to sustain a position in a highly competitive HE market and to achieve their brand-building goals (Bélanger, et al., 2014). Since no previous research has systematically studied HEIs' engagement with Chinese international students on Chinese social media platforms, this study explores how and to what extent UK HEIs use Chinese social media platforms to engage with users. Furthermore, it investigates whether social media engagement is positively associated with student recruitment. Three related Research Questions (RQ) are as follows:

RQ1: To what extent do UK HEIs use public accounts on Chinese social media Weibo and WeChat?

RQ2: What factors might be related to the popularity of HEIs' Chinese social media accounts?

RQ3: Are there positive association between Chinese social media engagement and student recruitment of Chinese HE students?

Five hypotheses (H1, H2, H3, H4 and H5) are proposed and justified in this section. H1 and H5 are related to RQ2. H2, H3 and H4 are linked to RQ3.

The popularity of a HEIs' Weibo account is measured by the follower numbers of that account. Follower numbers indicate to what extent a post can reach its audience. Larger follower numbers means each post gets a larger reach and there is more opportunity for engagement (Peruta and Shields, 2017). Posts containing photos and higher posting frequency also contribute to engagement (Peruta and Shields, 2017). In previous studies, engagement is quantified by the numbers of 'likes', 'comments' and 'shares'. However, in this current study, the author is more interested in engagement activities from a HEI's Weibo account rather than from the audience, because a follower can simply receive the information from a Weibo account they follow but not like, comment or share the post. Instead, *interaction* was investigated to examine whether engagement is one way (e.g. reposted and liked by users) or two ways (interaction and public replies to users from HEIs' accounts). This is because one of the main functions of Weibo for cross-cultural communication is for Chinese students to ask questions in Mandarin and get replies from the HEIs which could lift the language barriers (e.g. comparing to students emailing the university administrator in English). Although Weibo is a microblogging site like Twitter, the layout is more like Facebook which means the followers will receive a post by a Weibo account they follow with all the comments for this post from other users as well as replies to those comments from the host account. As many Chinese students find language barriers challenging and prefer to stay in familiar cultural and language environments (Young and Schartner, 2014), they might be more inclined to follow a HEI account if they see interactions between the public account and other users (e.g. HEIs answering users' enquires). HEIs using social media interactively were more likely to attract a larger group of followers (Rutter, et al., 2016). Research has also shown how being verified improves the source credentials and trustworthiness of the source (Gao, Tian, & Tu, 2015). Hence verified Weibo public accounts are more likely to attract followers. Increased numbers of followers are likely to be positively associated with university reputation (Brech, et al., 2017). Thus:

H1 HEIs' Weibo follower numbers is positively related to the (H1a) number of photos, (H1b) number of posts, (H1c) frequency of posts, (H1d) level of interaction, (H1e) having been verified and (H1f) university reputation.

Consumers would need exposure to the brand information to increase their confidence in the brand and this validation could be accomplished by actions such as following a brand's social media profile (Rapacz, Reilly, & Schultz, 2008). Prospective students are able to obtain more information by following HEIs' public social media accounts when they are in the process of choosing study destinations, thus, brand presence and interaction on Facebook and Twitter may help HEIs with student recruitment (Rutter, et al., 2016). This study explores whether the recruitment of Chinese students is associated with HEIs' Chinese social media use and the findings can be used to improve recruitment practices, as well as contributing to knowledge in the field of higher education research in relation to cross-cultural communication and social media marketing. Both Weibo and WeChat adoption will be examined with their association with student recruitment. As WeChat does not provide the total number of followers, WeChat readership (how many times certain posts have been seen by users) is used to represent the popularity of that WeChat account. Since that university reputation is one of the most important factors that contributes to Chinese students' choice of study destination (Cebolla-Boado, et al., 2018), the association between Chinese student recruitment and university reputation will be tested in the analysis. Reputation would also act as a control variable to examine the association between social media use and student recruitment after taking into account the prestige of individual HEIs. Thus:

H2 Chinese student recruitment is positively associated with university reputation.

H3 Chinese student recruitment is positively associated with HEIs' Weibo follower numbers after taking into account university reputation.

H4 Chinese student recruitment is positively associated with HEIs' WeChat readership after taking into account university reputation.

Cross-platform promotion was found to be an effective strategy for early adopters of social media to reach to larger audience and encourage engagement (Yimei Zhu and Procter, 2015). Hence HEIs who are successful with their Weibo adoption may have a more dedicated team managing Weibo, and they may also be more resourceful in their social media strategy and take up WeChat for cross-platform promotion. Thus:

H5 WeChat readership is positively related to Weibo follower numbers.

Research Design and Data Collection

Observational data of UK HEIs' accounts on Weibo were collected on two occasions, August 2012 and January 2018, and from WeChat on January 2018, as indicated in Table 1. Observational data from two other sources were captured to measure student recruitment and university reputation. Those two sources are HE student data (2011-2017) from the Higher Education Statistics Agency (HESA) and university ranking and overall score published by The Complete University Guide at 2017.

Weibo data were first captured in August 2012. A reference study was conducted by Kelly (2012) of UK HEIs' social media use which captured the presence of 164 UK HEIs on Facebook and Twitter. The author, who is a native Mandarin speaker and worked for a UK HEI maintaining their Weibo profile in 2012, searched in Weibo of those 164 UK HEIs. Firstly, the English name of a HEI was searched in Weibo search column. There could be more than one account with slightly different translation in Mandarin for the same HEI. Based on the author's experience, this may be due to multiple educational agents creating Weibo accounts for the same clients. In that case, the accounts that were verified, or those with more followers and more posts were selected and recorded accordingly. The final dataset included 163 UK HEIs with the information of whether they have a Weibo account, number of followers, posts and photos, frequency of posting behaviour, whether it was a verified account, to what extent the account interacted with users and so on. The data collection was repeated in January 2018 to capture HEIs' Weibo activities. Data, such as number of photos, number of posts and whether an account is verified can be identified on a Weibo profile. Frequency of posts was manually recorded based on how many posts were distributed in a week/month from no post at all, no post in 2017, 1 or less per month in 2017, 1 or less per week but 2 or more per month, 2-4 per week, 5 or more per week. Level of interaction was recorded as no interaction to anyone, one way (e.g. reposted and liked by users) or two ways (interaction and public replies to users).

UK HEIs' presence on Facebook and Twitter were also checked manually and recorded as 'yes' or 'no' in 2012 and 2018, as well as their presence on WeChat in 2018. WeChat observational data include number of articles the account posted from 1 January to 31 January 2018 and how many times those articles have been read in total. Higher Education Statistics

Agency (HESA) provides open source data and the HE student data (2011-2017) contains student recruitment data including numbers of all students and Chinese students for each university each academic year. HE student data used in the analysis were numbers of all Chinese students of 2016-17 academic year and increase or decrease in Chinese student numbers 2016-17 compared to 2011-12.

A number of sources provide university ranking of UK HEIs. The Complete University Guide was selected as it provided an overall score as well as the ranking order and it evaluated the universities based on entry standards, student satisfaction, research quality and graduate prospects, which seemed overall more balanced than The Guardian university guide which emphasised students' experience and the Time Higher Education's university ranking which was more focused on the world ranking and did not include many of the lower-level UK HEIs. The year 2017 was selected for university ranking to match the data used to measure student recruitment (2016-17) and social media presence of January 2018. The most recent data available from HESA is for the year 2016-17 at the time of writing. The Complete University Guide usually publishes University rankings for the next academic year which means that the ranking for 2017 was published in April 2016 and could potentially influence the recruitment of the 2016-17 cohort.

The data from various sources were combined and analysed in SPSS. The final data contains 163 HEIs based in the UK. Data was available for 155 HEIs in terms of numbers of Chinese students for 2016-17 and 127 HEIs in terms of a ranking number and overall scores published by The Complete University Guide. The university overall scores will be used in the analysis to indicate university reputation.

Table 1 Datasets and key variables

Datasets	Time of data collection or data record	Key Variables
Weibo observation data	August 2012 & January 2018	number of followers, photos & posts, frequency of posts, level of interaction & verification
WeChat observation data	1-31 January 2018	total number of posts & total number of reading times for all posts
HESA student data	2011-12 and 2016-17	all Chinese students of 2016-17 academic year & increase/decrease in Chinese student numbers 2016-17 compared to 2011-12
The Complete University Guide	2017	university overall scores

Data Analysis and Findings

Basic descriptive analysis was conducted to answer RQ1. In August 2012, 58% (94/163) of UK HEIs had an account on Weibo while 44% (41/94) of these Weibo accounts were shown as having been verified. In January 2018, 73% (119/163) of UK HEIs had a Weibo account and 74% (88/119) of these Weibo accounts were verified. There were 5 HEIs (6%) who predominantly disseminated information in English on Weibo at 2012 whilst all others wrote in Mandarin. In 2018, all Weibo HEIs accounts wrote in Mandarin or a mixture of Mandarin and English. As of January 2018, just over half (82/163) of UK HEIs had a public account on WeChat. The mean number of posts by these WeChat accounts were 6.74 (SD=4.88) for the month of January 2018 and the mean total reading numbers were 4,101 (SD=6784) with the most popular account having articles being read 37,412 times for the month of January. With regards to other social media platforms, 90% (147/163) had a presence on Twitter and 87% (141/163) had a presence on Facebook in 2012, whilst 99% (162/163) had a Twitter account and 100% had a Facebook account in January 2018. On Weibo, some HEIs also had accounts for their alumni group, individual schools and centres, and created individual discussion groups for prospective incoming students who had received offers of a place, in order to make friends and build connections.

To test H1a, H1b, H1c, H1d and H1f, a two-tailed correlation was run for six variables—follower numbers, number of photos, number of posts, frequency of posts, level of interaction and university overall scores. Weibo data collected in January 2018 was included in this analysis. Spearman correlation was used because H1c and H1d contain ordinal data. Spearman correlation is more suitable when the relationship is not linear and can be used for ordinal data (Zou, Tuncali, & Silverman, 2003). Table 2 indicates that there was a strong positive correlation between follower numbers¹ (M=7,791, SD=14,174) and number of photos (M=1,224, SD=1,977) ($r=0.717$, $p<0.01$, $N=118$). A strong positive correlation was found between follower numbers and number of posts (M=1,161, SD=1,858) ($r=0.734$, $p<0.01$, $N=118$). Follower numbers had a modest positive correlation with more frequent posting activities ($r=0.529$, $p<0.01$, $N=118$) and interaction level ($r=0.463$, $p<0.01$, $N=118$). HEIs who employed two-way interaction and replied to students publicly would obtain higher number of

¹ Three HEIs (Universities of the Arts London, Kingston University and the University of Cambridge) had number of Weibo followers greater than three standard deviation of the mean.

followers than those with one way interaction. Follower numbers had a modest positive correlation with university overall score ($M=642$, $SD=148$) ($r=0.417$, $p<0.01$, $N=107$). By examining the data, the two top HEIs—The University of Cambridge and the University of Oxford were among the top five in terms of follower numbers at January 2018.

Table 2 Two-tailed Spearman Correlation between follower numbers, number of photos, number of posts, frequency of posts, level of interaction and university reputation as of January 2018

		Weibo Followers	Number of photos	Number of posts	Frequency	Interaction	University overall scores
Weibo	CC	1.000	0.717**	0.734**	0.529**	0.463**	0.417**
Followers	Sig.		0.000	0.000	0.000	0.000	0.000
Number of photos	CC		1.000	0.882**	0.637**	0.416**	0.173
	Sig.			0.000	0.000	0.000	0.074
Number of posts	CC			1.000	0.529**	0.426**	0.140
	Sig.				0.000	0.000	0.149
Frequency	CC				1.000	0.245**	0.318**
	Sig.					0.007	0.001
Interaction	CC					1.000	0.249**
	Sig.						0.009
University overall scores	CC						1.000
	Sig.						

CC: Correlation Coefficient Significance level ** $p<0.01$

Multiple regression analysis was used to test H1e (Model 1) since it contained a binary variable which was not suitable for correlation test. Follower numbers was the dependent variable and whether an account had been verified (0, 1) was the independent variable. University reputation (overall scores) was used as a control variable. Before the regression analysis, the data were explored to identify outliers and it was notable that University of the Arts London had the highest number of followers (97,296) but was not verified as for January 2018. However, this university had a verified account that represented the university's Beijing office as for data collected in 2012 and this account was still very active in 2018. This university had high quality photos of art work on both Weibo profiles which might attract a large number of audience such as artists and art lovers. Hence the case of University of the Arts London was removed as the outlier in Model 1. Table 3 indicates that being verified ($p<0.01$) was significantly related to higher number of followers after taking into account the reputation of individual HEIs ($p<0.05$). Verified Weibo accounts had on average 7,960 more followers than unverified accounts, controlling for university reputation scores ($R^2=14.7\%$). Hence H1a, H1b, H1c, H1d, H1e and H1f were all supported.

Table 3 Regression model results

		Model 1	Model 2	Model 3	Model 4	Model 5
Independent/Dependent		Weibo followers 2018	Total number of Chinese students 2016- 17	Change in Chinese student numbers 2016-17 compared to 2011-12	Total number of Chinese students 2016- 17	WeChat readership January 2018
Verification (reference: no)	B	7960.01**				
	SE	2636.41				
Weibo followers 2018	B		0.01*			0.14*
	SE		0.01			0.07
Change in Weibo follower numbers 2018 compared to 2012	B			0.01*		
	SE			0.00		
WeChat readership January 2018	B				0.05**	
	SE				0.01	
University overall scores	B	18.66*	3.47**	1.395**	3.42**	
	SE	7.24	0.53	0.43	0.71	
Constant		-11124.40	-1521.01	-826.97	-1601.45	3181.99
Explained variance (R ²)		14.7%	34.8%	19.4%	39.1%	5.1%
N		106	105	86	74	77
Significance level *p< 0.05 **p< 0.01						

Multiple regression analyses were applied to test H2-5 and the results were reported in Table 3. First, Model 2 tested the effects of brand follower numbers and university reputation on Chinese student recruitment. The dependent variable was the total number of Chinese students for 2016-17 (M=636, SD=903) and the independent variable was the follower numbers on Weibo at January 2018 and university overall scores. Chinese student numbers are positively related to university overall scores ($p<0.01$) which indicate that HEIs with higher reputation recruit larger number of Chinese students. Hence H2 was supported. There was a significant positive association between follower numbers ($p<0.05$) and total number of Chinese students. An additional 100 Weibo followers in 2018 is associated with a higher student recruitment of 1 student on average after controlling for university reputation ($R^2=34.8\%$).

Model 3 tested the association between the change in Chinese student numbers and change in social media follower numbers over the past five years. The variables were computed with the dependent variable being the change in the number of all Chinese students from 2011-12 to 2016-17 (M=118, SD=503) and the independent variable being the change in the number of

Weibo followers from 2012 to 2018 ($M=7,364$, $SD=14,648$). University reputation was included as a control variable. The regression analysis results indicated that there was a significant positive relation between change in Weibo followers ($p<0.05$) and that of Chinese students. An additional increase of 100 Weibo followers from 2012 to 2018 is associated with increase of recruitment of 1 Chinese student on average after controlling for university reputation ($R^2=19.4\%$). This suggests that HEIs using Weibo to gain followers had increased their Chinese student recruitment. Therefore, H3 was supported.

Model 4 tested the association between the readership of WeChat articles and recruitment of Chinese students. The dependent variable was the number of all Chinese students 2016-17 and the independent variable was the total number of readership for articles published in January 2018, with university overall scores as a control variable. The result indicates that Chinese student numbers were positively related to WeChat readership ($p<0.01$). An additional 100 reading times of WeChat articles in 2018 is associated with a higher student recruitment of 5 students on average after taking account of university reputation ($R^2=39.1\%$). Hence H4 was supported.

Model 5 tested the association between WeChat readership and Weibo follower number. The result indicates that WeChat readership was positively associated with Weibo follower numbers ($p<0.01$). An additional 100 Weibo followers in 2018 is associated with 10 more WeChat readership on average ($R^2=5.1\%$). Hence H5 was supported.

Discussion

This is the first study to investigate western HEIs' use of Chinese social media platforms and the association between social media engagement and student recruitment. It generates new knowledge in the field of higher education research in relation to cross-cultural communication and social media marketing.

This study indicates that many UK HEIs have paid attention to engage with Chinese audience on Chinese social media platforms. A study conducted in August/September 2018 reported that among six top ranked UK HEIs of the 2017 Academic Ranking of World Universities (ARWU), only two had a Weibo presence (Motta and Barbosa, 2018). This current study however demonstrates that this data is inaccurate, as all top six UK HEIs in the 2017 ARWU

had Weibo accounts by January 2018. Weibo has been adopted by most UK HEIs (73%) together with their China offices and agents in the past six years, whilst half of UK HEIs use public WeChat accounts to distribute articles. While prospective HE students and their parents in mainland China may face language barriers, cultural barriers and technological barriers with the more commonly used social media platforms in the west, they are able to browse HEIs' social media profiles on Weibo and WeChat in a language and cultural environment that they are familiar with, to gain impressions and improve their understanding of those institutions. Since international students feel more comfortable with familiar cultural and language environments (Dunne, 2009), using social media platforms that are commonly used by Chinese people would facilitate a better cross-cultural communication between overseas HEIs and individuals from mainland China. The findings suggest that all HEIs used Mandarin as the main language in 2018 for their public Weibo accounts compared to a small group using English only in 2012. It indicates that rather than copying messages in English which HEIs publish on their Twitter or Facebook accounts, the strategy to use Chinese language as the main language for the information disseminated on their Weibo profiles has now become a norm.

The findings suggest that number of photos was positively related to number of followers for HEIs' Weibo accounts. Posting photos on social media are important for brand building and are related to gaining popularity with consumers because photos enable prospective consumers to visualise themselves at this destination (Fatanti and Suyadnya, 2015). For HEIs, photos on their public social media accounts may demonstrate campus life, the city, student activities and events and accommodation which are all important elements in helping prospective students gain impression of a study destination. This study indicates that number of posts and more frequent posts are related to the popularity of follower numbers, which are in line with findings from a similar study by Peruta and Shields (2017), although Brech, et al. (2017) suggested that the best strategy is to post frequently about four times per week, but not too frequent or infrequent. Interaction in this study was measured differently from other studies (counting numbers of 'like', 'comments' and 'shares'). Instead this study measures how HEIs react to comments and posts by other users and whether this interaction is one way (e.g. reposted and liked by users) or two ways (interaction and public replies to users). The result suggests that HEIs who reply to other users have a higher number of followers compared to those with one-way interaction and those without any interaction. This suggests that Weibo users are more likely to follow a public HEI account that actively interacts with other users (rather than passive dissemination). When an HEI account reposts or replies to users publicly, other users are able

to see this interaction on Weibo which could act as a way of eWOM which is becoming very powerful (Duan and Dholakia, 2015). The public conversation between an HEI and a prospective student on Weibo can be seen by other users to potentially increase their trust for the HEI and may also encourage them to ask questions and interact with the HEI Weibo account. The finding suggests that follower numbers is positively related to an account having been verified. The trustworthiness of an HEI public account can be accomplished by getting verified with Weibo, as this may increase the source credentials (Gao, et al., 2015).

The two top HEIs in the UK—the University of Cambridge and the University of Oxford, are among the top five in terms of follower numbers at January 2018. This is in line with findings of Brech, et al. (2017), that reputation is a significant factor that drives connection with a university in social media. However, it is notable that some of the lower ranked HEIs such as Kingston University (ranked 109 at 2017 by the Complete University Guide) had the second largest number of Weibo followers (73,377) among all HEIs in January 2018. Kingston University was also one of the early adopters of Weibo as they already gained 16,025 followers in August 2012 and had used outsourced professional services to maintain their Weibo account. This indicates that lower-ranked or less-established HEIs may use social media to build up a brand for international market.

This study found that HEIs with better reputations recruit larger numbers of students from mainland China perhaps because university reputation is a key factor for Chinese HE students in decision making of their study destination (Bodycott, 2009; Cebolla-Boado, et al., 2018). HEIs with higher numbers of followers on Weibo and higher readership of WeChat articles had a larger Chinese student population after taking account of university reputation. Although we cannot prove a causal link between recruitment of Chinese students and social media use, it is clear that HE consumers are able to validate a brand by following it on social media to increase their confidence in the HE brand (Rutter, et al., 2016). WeChat readership was found to be related to Weibo follower numbers, as Weibo can be used to promote a WeChat article. This suggests that cross-platform promotion is a strategy for multiple social media platforms of the same HE brand.

A novel design of this study is using longitudinal data that were collected at two occasions in 2012 and 2018, which enables the comparison of Weibo follower numbers over the years. Combined with HESA's data of change in the number of all Chinese students from 2011-12 to

2016-17, the result suggests that HEIs that used Weibo effectively and gained followers over the years have increased their Chinese student recruitment. This makes an original contribution to knowledge about Chinese social media use and student recruitment through empirical data collection.

Implication for HEIs

This study suggests that students around the world may use different social media platforms and HEIs need to be aware of this when recruiting. Localised social media platforms may be more effective as marketing tools for engaging students from a different cultural background. Young people have learnt to research products on the Internet and assess reviews before purchasing (Fogel and Zachariah, 2017). Similarly, prospective students from mainland China may search on the Internet and social media when choosing of study destinations. The availability of a well-maintained public account on Weibo and WeChat provides the platform that Chinese people are familiar with that can improve their knowledge of an HEI and the host city, and to gain confidence in the HEI as a brand. Weibo users are more likely to follow HEIs' accounts if they are well-maintained and post photos and articles frequently. Followers also favour accounts that actively comment on other users and reply to users' enquiries as this creates eWOM influence and fosters trust. HEIs that hope to maintain a competitive position in securing Chinese international students should invest money and resources in Chinese social media marketing.

Weibo provides a public space for discussion whilst WeChat has the convergence of social networking and news consumption. Since WeChat is currently the most favoured social media platform in main China and WeChat active users are three times more numerous than Weibo active users, WeChat articles might reach larger audience. However, it is easier to use Weibo to disseminate photos and messages, whilst it requires skills and effort to edit a WeChat article. Hence Weibo might be more useful for disseminating certain type of information (e.g. photos of ongoing events on campus) and more useful for building trust as Weibo users can see the conversation between HEI account and other users via comments of a post. A professional team that speaks Chinese and understands Chinese culture is more suitable to manage Weibo and WeChat accounts and facilitate cross-platform promotion linking various social media platforms and university websites.

Getting verified may increase the source credentials and hence HEIs might consider verifying their Weibo accounts. It can be extremely useful for small institutions or a new start-up Weibo account in order to gain trust from prospective students. HEIs should also work with partners and agents to promote their Weibo and WeChat accounts to reach larger audiences. For lower-ranked institutions, some early adopters of Weibo perform well in the recruitment of Chinese students. For example, the University of Huddersfield who was ranked at 81 in the UK, had the highest number of Weibo followers in 2012 and their Weibo account actively replied to other users. In January 2018, they were No. 7 in terms of follower numbers and No. 38 in terms of numbers of Chinese students. The University of Huddersfield was No. 46 in terms of the percentage of Chinese students out of all student population as the ratio takes into account small institutions with limited capacity. This provides some indication of how middle and lower-ranked and less-established institutions might strategize for competing in the international student market. Since the cost of study is no longer a key factor in the selection of HE study destination for Chinese students (Cebolla-Boado, et al., 2018), lower tuition fees might not be an effective strategy to attract Chinese international students in the long term for those lower-ranked HEIs. The improvement of social media marketing, especially effort on building a brand on WeChat and Weibo, could be a strategy for lower-ranked, less-established and small institutions, and also for HEIs in other countries that intend to attract HE students from mainland China.

Contribution, Limitations and Future Research

This study offers both empirical and methodological contribution to the knowledge in the field of higher education research in relation to cross-cultural communication and social media marketing. This is the first study of this scale that examines western HEIs' use of Chinese social media and its relation to student recruitment of Chinese international HE students. The novel longitudinal methodological design enabled the capture of the difference between 2012 and 2018 in follower numbers for UK HEIs' Weibo accounts. Taken together, the results reveal that Chinese students' increase in UK HEIs are related to the increase of follower numbers on the universities' Weibo accounts, after taking into account of university reputation. Other scholars working in similar areas might adopt this longitudinal methodological approach on studies of other social media tools for marketing and cross-cultural communication. This study also suggested novel findings in terms of which strategies might be effective for university accounts to interact with users in order to generate trust and eWOM. The findings offer

important implication for HEIs around the world in relation to international student engagement and recruitment.

This study has a number of limitations. Firstly, data collection of social media activities at a second time was conducted at January 2018. However, the latest publicly available data of UK HEI student numbers were for 2016-17 at the time of writing. There could be human errors as the data were captured and coded manually. Future research could use a professional service provided for harvesting Weibo data. Secondly, data of university rankings were selected from the report provided by the Complete University Guide. University ranking is always subject to criticism because different sources use different measures. Moreover, university ranking and scores provided by the 2017 Complete University Guide were only available for 127 HEIs whilst there were 163 HEIs in our initial data that captured social media activities. Thirdly, this current study did not count for the numbers of likes, shares and comments as commonly used in many other studies, hence could not compare the findings in terms of ‘interaction’ with other studies that examined interaction from followers’ perspective. However, this provides an opportunity for future research to study from followers’ perspective of interaction. A final limitation is the limitation in methodology that no causal link could be proved for social media use and student recruitment. Future studies could adopt qualitative content analysis of Weibo posts and WeChat articles to explain why some HEIs have extremely large followers or WeChat article readership. Moreover, in-depth interviews with Chinese international students could be employed to explore insights from the consumers’ point of views and provide suggestions for HEIs as a brand to meet consumers’ needs.

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