Original Article

Measuring the effects of dating websites' investments in user self-presentation and peer-interactivity on firm performance

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ABSTRACT With internet firms increasingly investing in new technologies and applications to make their websites attractive, social and interactive with e-store customers, less is known about the success drivers for one type of e-store, namely online dating sites. Dating sites are characterised by customers' heavy use of self-presentations and high frequency of peer-to-peer interactions with the goal of finding a partner. However, their respective contribution to dating sites' firm performance is unclear. This article aims to empirically examine the effects of the two customer-focused web functions: customer self-presentation and peer-interactivity on firm-performance using data from a Chinese dating website. The findings confirm the crucial role of self-presentation for a dating site, where it also significantly influences the level of peer-interactivity, traffic to one's profile page, and firm performance. Yet, the effect of peer-interactivity is not evident from this sample. Overall, this study offers measures in a structural model, findings from which would help e-marketers to strategically appropriate web investments in either function for enhancing firm performance.

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INTRODUCTION

Online dating in Western societies has formed a mature industry and competition has entered a stage where firms are increasingly targeting even smaller niche markets for customers of specific races, regions and professions for differentiation

and profitability.¹ Modelled on eHarmony and Match.com, dating sites in China have grown rapidly parallel to this global trend yet on its own learning curve. Social trends, too, also provoke such an industry growth: there are a few extremely popular TV shows adapted from the British ITV's 'Take Me Out'² into a Chinese context for weekly television dating game shows. While online dating in Western society is merely a private matter, in China however, due to the Chinese traditional value of family line continuity

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and filial piety through marriage, using dating sites for seeking potential marriage partners has become a social trend.

For digital marketers, this means big business: China's leading internet research consulting group iResearch's 2009 internet traffic monitoring report on sites' page views per week suggests that online dating tops the list by an unprecedented advantage (152.77 pages), followed by online search (30.17 pages), blogs (28.05 pages), social network (22.48 pages), finance news (22.24 pages).³ Official statistics from the China Internet Network Information Centre (CINIC) find that by the end of 2010, 51.4 per cent of Chinese Internet users had visited online dating sites, a figure that has increased 5.6 per cent since 2009 and accounted for 0.24 billion of the population.⁴ iResearch estimates the compound annual growth rate (CAGR) for dating sites' single adult users will be 25.9 per cent for 2010–2015 with the online dating market having a CAGR rate of 31.3 per cent, reaching £17.7 million by 2015.³

Currently, the business model for online dating sites is generally based on two key components: first, to provide an uncharged service for user registration and personal information uploading onto the site. The site then maintains user data, offers personality tests or user identification (for example, ID/photo) verifications; second, to moderate between potential daters where users are permitted to exchange on-site private communication messages to potentials for a fee. Both components generate income for dating sites because active paying members (that is, presenting self and interacting with others) are crucial to an online dating business' market survival.

However, the overall conversion rate for registered users becoming paid members remains challenging. Striking an optimal balance on the two components, therefore, in a rapidly growing market is extremely costly and challenging. On the one hand, some customers can easily become 'free riders' in using the self-presentation service on-site despite the fees having been reduced as low as 45 Chinese yuan (that is, £4.50) for a 3-month membership (Ms Li Zhu, CEO of Juedui100.com).⁵ On the other hand,

frequent opportunistic behaviour emerges from some registered users who embed their instant messaging accounts into their photographs submitted to their profiles for private contacting by circumventing the dating site's manipulation. These behaviours are detrimental to a site's investment on peer-interactivity mechanisms. Firms lose a £0.20 service fee for a non-contractual user for every potential piece of on-site message proceeded.

Despite the market size for online dating breaking through the one-billion people mark overall, some of the online dating sites have not yet become profitable in China.⁵ E-marketers are searching for their optimal business model on investment in user self-presentation functionalities and user interactivity functionalities while coping with their financial challenges. As a pure online business, brand building by way of investments in web design and multimedia self-presentation mechanisms constitutes the largest expense for most sites. However, this does attract sizeable number of users, some of whom become paying members after extensive browsing. This costly process inevitably reflects the first two stages (that is, brand building consideration) described by Reynolds⁶ (p. 156) in his model relating how digital marketing tools, marketing objectives and consumer behaviours are linked.⁶ Many dating sites in China are even reaching out for overseas venture capital as finance: Jiayuan.com, for instance, China's largest online dating service, was listed on the Nasdaq in May 2011 preparing for its next stage market expansion.⁷ Other sites, however, chose to avoid direct competition on brand building or web graphic design investment as it remains difficult to differentiate from the clusters of competitors. Sites like Marry5.com aim to enhance the other portion of the business model by converging valuable resources in launching sophisticated recommendation mechanisms (that is, people who viewed Candidate A also viewed Candidates X, Y, Z) to encourage user interactions for a fee among a smaller but highly targeted group of candidates based on their selection criteria.

The potential problem lies in that, while both are seen as crucial, the magnitudes of

the impacts of the two website investments on functionalities (that is, self-presentation and peer-interactivity) are unclear to marketers, rendering their site investment manipulation less optimal and often ineffective. Without the investment in web design, users will lack trust in the site's ability⁸ and potentially lose interest in further online interactivity. While customer peer-to-peer interactivity may be profitable for a short-term window, it inherently lacks the momentum to reach a critical mass over the long run.

To date, very little is known about the extent to which the two user-initiated activities, that is self-presentation and peer-interactivity, could contribute to dating site firm performance. In this study, it draws on online self-presentation literature and develops firm-customer web interactivity into peer-interactivity, to empirically test a set of hypothesized relationships using real user data from a Chinese site. Generalized structured component analysis (GeSCA),⁹ which represents a component-based approach to structural modelling, is used in this study to address the hypothesised relationships.

LITERATURE REVIEW

Extant internet marketing literature generally examines e-store success using firm-focused antecedents or manipulations on customer patronage intentions. For instance, Song and Zinkhan¹⁰ find when the level of message personalization increases, interactivity perceptions and site effectiveness are enhanced for an e-store customer.¹⁰ Liu and Shrum¹¹ argue that depending on customer involvement, sellers' web interactivity may either enhance or inhibit persuasion.¹¹ Very recent research from Köhler *et al.*¹² focuses on how companies use online 'socialization agents' to help new customers adjust to and function within the service environment more effectively in the banking industry, which in turn influences firm-level performance.¹²

In comparison, however, very little attention has been paid to the effects on customer-focused drivers of an online business. While literature on online dating generally adopts a customer-focused perspective, for instance, identity

construction,¹³ online self-presentation and deception,¹⁴ the attractiveness of online profiles,¹⁵ literature appears to be sporadic and explores only a single factor at a time. With online dating sites increasingly investing in new combinations of functionalities, an investigation of several factors simultaneously may uncover insights that were otherwise less likely.

Online dating is not to be confused with another popular topic, that is electronic community,¹⁶ where the focus is on openly opinion sharing and discussions without financial purposes. For the commercial and private nature of dating sites, the communications for online daters, however, remains a goal-directed one-on-one activity. Fiore *et al.*¹⁵ suggest there are four systematic parts for online dating sites: (1) personal profiles (for example, demographic and photograph, and so on); (2) searching and/or matching mechanism; (3) onsite communication (for example, private mail system, or content-less 'winks'); (4) other forms of optional self-description (personality test, audio video clip).¹⁵ This categorisation is defined from an information system perspective. From a business model or marketing viewpoint, there are actually two web investment components: self-presentation and peer-interactivity functionalities. The notion of self-presentation contains personal profiles and optional rich-media descriptions while peer-interactivity includes interactive activities like search or communication with other users.

THEORETICAL FRAMEWORK AND HYPOTHESIS MODEL

The following firstly presents a research model where the dependent variable is firm performance and the independent variables are self-presentation, peer-interactivity and traffic to page. The relevant literature in supporting these hypothesized relationships will be discussed (Figure 1).

Traffic to profile page

Traffic to page relates specifically to the visits to a personal profile page on a dating site. Generally, high website traffic serves an 'intermediate goal' for e-business success.¹⁷

Figure 1: Research model.
Source: author.

Just like website traffic, traffic to one's dating profile page is only a necessary but not sufficient condition for success in finding a partner.¹⁸ Visitors probe further by browsing potential candidates' personal attributes such as physical appearance, lifestyle, and so on before making an approach or avoidance decision.

Firm performance

Firm performance for a dating site is measured by the number of friends one has accepted which serves as a proxy for the site's financial performance. A dating site usually has a mechanism of recording the number of friends one has accepted.¹⁹ Sending friends' requests, communicating with on-site messaging services and virtual gifts like flowers represent active users and is similar to courting behaviour in the offline world. Current industry statistics show 15 per cent of these active users in the courting process will convert into paid members with an average spend of £20 per person annually.¹⁹

Hypothesis 1: Traffic to online dating user's profile page positively relates to dating site's firm performance.

Online self-presentation

First, online dating typically constitutes a goal-directed behaviour, in which online dating users have clear goals to achieve, for example finding romantic or simply sexual partners.²⁰ Unlike self-presentation in an online space or social network site, the intrinsic motivation in relationship building is much higher for dating sites. They present themselves to an intended

audience: in a typically heterosexual dating site, men look for women, and women look for men. This means one has higher control of self-presentation in a decontextualised virtual space: purposeful self-presentation is for what one intends to 'give' while information that could be 'given out' is strategically reduced. Some researchers refine this type as 'selective self-presentation'.²¹ High control of one's own online self-presentation could reduce potential daters' search efforts; thus they could be reached by intended audiences more efficiently.

Hypothesis 2: Online dating user's self-presentation positively relates to traffic to their profile page.

It is worth noting that recent research on self-presentation on dating sites focuses predominately on photographs while neglecting textual self-presentations.¹⁵ As dating sites are becoming sophisticated with variations for presenting self on-site, a multidimensional measure of self-presentation is expected to be more reliable and realistic. This includes uploading one's photos, providing personal information (for example, age, ethnicity, education), physical appearance (body type, height, and weight), lifestyle (smoking, alcohol), relationship status (has kids, marital status) and other extended information such as hobbies, political views, TV watching habits, and so on depending on different site design.

Socially desirable and latest updates on self-presentation are more likely to be featured on the dating site home page by the management in order to increase its exposure to visitors and encourage member registration. Indeed, Ellison *et al*²² find that online dating users strategically present their 'ideal self' to find a partner.²² As all this self-presentation takes up a user's valuable time, deliberation and resources to socially construct an ideal self, the more customers immerse themselves in self-presentation, the more likely they are to become paying members to fully utilise their online dating activities which is in line with prospect theory on loss aversion bias.²³ On the contrary, customers with few self-presentation efforts, that is few photos,

inadequate or discrete personal profiles, are more likely to abandon the site or switch.

Hypothesis 3: Online dating users' self-presentation positively relates to dating sites' firm performance.

Peer-interactivity online

The interactive nature of the internet and typically the second-generation technological competences⁶ also foster interactions among site users. Yet, literature on web interactivity in marketing studies generally focuses on user-to-system or user-to-firm interactivity but less on user-to-user interactivity or, put differently, the peer-interactivity. The notion of peer-interactivity online has received comparatively little theoretical and empirical attention. Peer-interactivity can be defined as the actively controlled two-way communication among peer actors (users) in a synchronised way. This definition draws on conventional concepts of interactivity that has three key factors: active control, two-way communication and synchronicity.²⁴ Interactions among peers have been suggested to initiate social exchange process, promoting reciprocal behaviour, and the social exchange relationship positively relates to task performance.²⁵ Virtual peer interaction plays an important role in creating a healthy self-identity for young men and women.¹³ It is vital to users' online dating experience and eventually converts registered users into paid-subscribers/members. This would be more true of a dating site compared with more standardised e-shopping sites because online dating is argued as an 'experience good' where people use peer-interaction as analogous to real first dates.²⁶ Manago *et al.*,¹³ for instance, explain that young men and women's burgeoning sexuality and relationship goals drive a variety of romantic partner-seeking behaviour, that is browsing potential partners' profile pages.¹³

Hypothesis 4: Online dating users' peer-interactivity positively relates to traffic to their profile page.

For digital marketers, peer-interactivity is an integral part of the dating site business model.

An on-site self-presentation service is primarily used as a brand-building and consideration-set construction strategy.⁶ It is used to cultivate customers' usage preferences and to subscribe to the site. Peer interactivity in parallel to self-presentation functions is also accountable for a substantial contribution to online dating sites' financial performance. Current dating sites in China charge a small fee (about £0.20) for 'pay as you go' customers for exchanging an on-site private message. A member could also choose to subscribe to 1-month, 3-month or 6-month contracts or service packages with usage allowances accordingly. Jiayuan.com, the largest dating site in China (with revenues of £15 million in 2010), for instance, only started to make profits from 2008 when charged members for on-site private messages for a fee.⁵

Hypothesis 5: Online dating users' peer-interactivity positively relates to a dating site's firm performance.

With regard to the interrelationship between self-presentation and peer-interactivity, it appears reasonable to posit that efforts in self-presentation would lead to an increased level of peer-interactivity. Toma and Hancock¹⁴ identify the motivational and relational goal aspect for self-presentation.¹⁴ By empirically studying nearly 70 heterosexual online daters, they found online daters strategically and selectively present themselves as such by lying about physical appearance to draw attention from the opposite sex. In line with evolutionary theories, self-presentation, for example physical attractiveness, in the dating realm is important for courting initiation.^{27,28}

However, it is less likely that peer-interactivity causes self-presentation. This is because adequate self-presentation precedes peer-interactivity. Social penetration theory posits that self-presentation is a type of communication through which individuals exchange self-related information to others in exchange for others' information on a shared basis. Self-presentation and therefore reciprocal-based communication lead to intimacy and relational development between the dating

Table 1: A comparison of the target site with mainstream dating sites in China

	<i>Popularity: traffic rank in China</i>	<i>Reputation: sites linking in</i>	<i>Page views by user</i>	<i>Time on site (mins)</i>
Target site	900–1000	126	16	14
Jiayuan.com	53	1623	22	19
Baihe.com	382	1310	13	10
Supei.com	6710	307	12	8
lpart.cn	982	1441	8	6
Juedui100.com	2294	417	14	8
Marry5.com	1756	1333	7	5
Industry average	NA	NA	8.93	6.25

All data based on March–May 2011 data collected and reported by Alexa.com.

Source: author.

parties.²⁹ Indeed, empirical evidence does support this viewpoint. Some Chinese dating sites will remind members that self-presentation without a profile photograph will be six times to 11 times less likely to be ‘clicked’ by other members. Research from an Australian online dating site suggests 85 per cent of people will not contact those who have no photographs on profile pages.³⁰

Hypothesis 6: Online dating users’ self-presentation positively relates to their peer-interactivity.

Finally, two sets of control variables are added into the model. It is expected that customer age, gender and relationship status (that is, single or non-single) may influence their outcomes and indirectly impact on firms’ performance. Similarly, those who have extensive experience of using online dating services may achieve more effective outcomes compared to novice users.

METHOD

Procedure

A Chinese online dating site was chosen for empirical study. The website does not wish to be identified (‘Target Site’ – TS hereafter). Considering that this site is comparatively small and serves a niche market for overseas Chinese, key parameters of TS were analysed on Alexa.com in comparison with the industry average for its representativeness. TS shared similar content structure on self-presentation and peer-interaction

functions. Its parameter on page views by user and time on site (in minutes) was comparable with Chinese mainstream sites with similar popularity ranks (for example, lpart.cn). To triangulate this position, research results from iUserTracker on the average page views on dating sites in China in 2009 were compared (for example, 8.93 page views and 6.25 minutes on site).³ Results showed TS was above the average. These results jointly indicate TS is in line with industry average and could serve as an acceptable sample (Table 1).

The data collected includes usage data for the most active 200 men and women members with an equal split by gender. They were ranked by their average daily traffic and page views on their dating profile page over the past 90 days. The sample represents active site members who are actively looking for a date.

Based on online dating literature, and site-specific data supplied by TS, the following variables were manually collected. Measurements used for structural modelling are shown in Table 2. They can be categorised into three groups: (1) indicators for self-presentation: number of pictures, number of records; number of logs; number of topics; number of polls, number of activities. (2) Indicators for peer-interactivity: these include visits to others’ pages and activities on others’ page (for example, making a comment on a picture or participating in an on-site poll). (3) Traffic to page is also given as a measure for the external clicks received in the past three months. Number of friends is given on the profile page of each member after

Table 2: Measurements

<i>Latent variables</i>	<i>Type of measures</i>	<i>Number of indicators</i>	<i>Indicators</i>
Self-presentation	Formative	4	Number of pictures
		—	Number of records
		—	Number of logs
		—	Number of topics
Peer-interactivity	Formative	2	Number of visiting other's pages;
		—	Number of activities on other's pages
Traffic	Formative	1	Number of traffic to page
Matchmaking success (firm performance)	Formative	1	Number of friends
Control variables	NA	4	Relationship status, gender, age, online dating experience

Source: author.

they confirmed a friend request from another registered member. This serves as a proxy to firm performance. Lastly, age, gender, relationship status (single or non-single) were collected by visiting the 200 members' profile pages. Their gender authenticity has been verified and scrutinised by site management to avoid misreporting.

The data were prepared in PASW 18 (that is, IBM SPSS statistics software) for identifying entry error, frequency analysis, data cleaning and missing data computation. In stage 1, descriptive data analysis and *t*-tests were performed. However, missing data occur mainly on members' age (58 missing) and relationship status (42 missing) either because some members do not disclose such information, or strict privacy restriction has been set (Table 3).

Results

In stage 1, a series of *t*-tests were carried out among the key variables (for example, traffic to profile page and number of friends) by comparing gender, relationship status and age. Another *t*-test was conducted to test whether there is a discrepancy between those who report their relational status as opposed those who chose not to. The results disconfirm such speculation. A missing value analysis was conducted and showed missing data did not pose a threat to this data set. They were then replaced by linear trend at point method. Finally, none of the *t*-tests were significant; data were then collapsed for further analysis.

Table 3: Participants demographic

		<i>Frequency</i>	<i>Per cent</i>
Age (<i>n</i> =142, 71%)	18–20	7	4.9
	21–30	129	90.8
	31–40	5	3.5
	41–50	1	0.7
	>51	1	0.7
Gender (<i>n</i> =200, 100%)	Male	100	50
	Female	100	50
Relationship status (<i>n</i> =158, 79%)	Single	134	84.8
	Non-single	24	15.2

Source: author.

In stage 2, considering this data set contains distributions with extremely high scores, for instance 685 for visits to other members' pages, but only two for the number of users' own logs, a natural logarithm was applied to transform the dependent and independent variables onto a scale basis.³¹ This provides common ground for all variables in a structural model. The final data set was prepared in ASCII format for GeSCA software to compute path estimates for a structural model.

Structural equation modelling

Structural models are commonly used in marketing studies to probe relationships among latent variables where these variables cannot be measured directly. Such a modelling method is termed a second-generation statistical method.³² For this study, constructs are all formative measures (see Table 2); it then needs

a component-based structural modelling rather than traditional covariance-based structure analysis (for example, Lisrel or AMOS). Generalised structured component analysis (GSCA) has recently been introduced into marketing research and been recommended for use as a priority methodology choice for component-based structural models. GSCA copes well with violation of normality and formative measures and offers a stronger global optimising function in parameter recovery and an additional overall measure of model fit.⁹ GeSCA was the software used to conduct GSCA analysis for this study.³³

GeSCA analyses suggested several key findings (correlations of latent variables see Table 4): (1) the overall model achieved a considerable fit of 0.45 with acceptable fit measures for the four latent variables in explaining the dependent variable firm performance (measured by matchmaking as a proxy). (2) The newly proposed construct of peer-interactivity achieved an R^2 value of 0.69 indicating excellent measurement and empirical support. Single-item measures for traffic to page and firm performance also achieved 0.60 and 0.53, both of which are acceptable. (3) For the six hypothesised relationships, four were supported (see Table 5).

Specifically, Hypothesis 1 posits traffic to dating profile page leads to tentative matchmaking on-site and therefore increases firm performance. It is supported. Hypotheses 2 and 3 are supported as well which posit that self-presentation on a dating site positively relates to traffic to profile page and firm performance. In contrast, from this sample at least, peer-interactivity does not seem to affect traffic to one's profile page and leads to matchmaking success (and therefore enhances firm performance). Lastly, as expected, self-presentation positively and strongly influences peer-interactivity, supporting Hypothesis 6.

The investigation on the control variable on the dependent variable (that is, firm performance using matchmaking success as a proxy) was estimated in two ways. First, in the GeSCA environment, a composite latent variable integrating participants' gender, age,

Table 4: Correlations of latent variables (SE)

	SP	PI	TRA	FP
SP	1	—	—	—
PI	0.83 (0.02)*	1	—	—
TRA	0.77 (0.03)*	0.68 (0.03)*	1	—
FP	0.71 (0.04)*	0.60 (0.05)*	0.65 (0.04)*	1

*Significant at 0.05 level.

Source: author.

relationship status and experience on the dating site was created. The path modelling indicates a non-significant impact ($\beta = 0.21$, $SE = 0.34$, $CR = 0.62$ [NS]). Then, four separate independent latent variables were created for gender, age, relationship status and experience on the dating site, each using a single formative measure. The results again confirm that none of the four control variables has significant impact on the dependent variable:

$\beta_{(\text{Age} \rightarrow \text{FP})} = 0.11$, $SE = 0.21$, $CR = 0.54$ [NS];
 $\beta_{(\text{Gender} \rightarrow \text{FP})} = -0.004$, $SE = 0.06$, $CR = 0.07$ [NS];
 $\beta_{(\text{Relationship status} \rightarrow \text{FP})} = -0.30$, $SE = 0.33$, $CR = 0.9$ [NS];
 $\beta_{(\text{Dating site experience} \rightarrow \text{FP})} = 0.01$, $SE = 0.06$, $CR = 0.17$ [NS].

Second, a hierarchical regression was performed in PASW to estimate the effects of three control variables on the dependent variable using the original data set, that is before natural logarithm transformation. Controlling for age, relationship status and experience of using the dating site, the independent variables (that is, number of pictures, records, logs, topics, others' pages visited, activities on others' pages and traffic to profile page) predict a significant proportion of variance in the dependent variable, that is number of friends and thus a proxy for firm performance with $R^2 = 0.136$, $F(7, 149) = 3.35$, $P < 0.01$. However, the regression model has not been improved when control variables were added (see Table 6). Results from the above tests confirm that the control variables do not affect the independent variable significantly. This is perhaps due to the highly homogenous participants' characteristics in this sample.

Table 5: Structural model from GeCSA analysis

<i>Hypotheses</i>	<i>Relationships</i>	<i>Estimates</i>	<i>CR</i>	<i>Results</i>
Hypothesis 1	TRA→FP	0.26*	1.78	Supported
Hypothesis 2	SP→TRA	0.65*	9.35	Supported
Hypothesis 3	SP→FP	0.53*	4.83	Supported
Hypothesis 4	PI→TRA	0.14 [ns]	1.99	Not supported
Hypothesis 5	PI→FP	0.08 [ns]	0.84	Not supported
Hypothesis 6	SP→PI	0.83*	35.38	Supported
<i>Fit measures</i>	<i>Endogenous construct</i>	<i>Model</i>	—	
<i>R</i> ²	SP	N.A.	—	
	PI	0.69	—	
	TRA	0.60	—	
	TM	0.53	—	

Note: SP=self-presentation; TRA=traffic; FP=firm performance; PI=peer interactivity; CR=composite reliability. *significant at 0.05 level based on 500 iterations and 100 bootstrap re-samples.

Source: author.

Table 6: Hierarchical regression model

<i>Models</i>	<i>R</i> ² (<i>Adjusted R</i> ²)	<i>F-change (Significance)</i>
1. Pictures, records, logs, topics; other's pages visited; activities on other's pages; traffic to page	0.136 (0.095)	3.346 (0.002)**
2. Pictures, records, logs, topics; other's pages visited; activities on other's pages; traffic to page; relationship status	0.137 (0.090)	0.197 (0.658) [NS]
3. Pictures, records, logs, topics; other's pages visited; activities on other's pages; traffic to page; relationship status; age	0.140 (0.087)	0.462 (0.498) [NS]
4. Pictures, records, logs, topics; other's pages visited; activities on other's pages; traffic to page; relationship status; age; online dating experience	0.140 (0.081)	0.082 (0.775) [NS]

***P*<0.01.

Source: author.

DISCUSSION AND CONCLUSION

Structural modelling analysis suggests that for the chosen online dating sample, only self-presentation contributes greatly to traffic to one's profile page and enhances firm performance. Despite self-presentation positively causes peer-interactivity, the effect of peer-interactivity on traffic to dating users' profile pages and its potential contribution to firm performance are not supported. There are several theoretical and managerial implications from this study.

This paper contributes to internet marketing literature by shedding light on customer-focused success factors, particularly the role of self-presentation on a dating site's performance by quantifying its concrete impact. Where prior literature on interactivity is mainly defined by user-to-system web interactivity, this study develops the concept and measures peer-interactivity. Results show its measurement is empirically valid ($R^2 = 0.68$). Yet, more

fieldwork needs to be carried out on further conceptualising peer-interactivity and empirically examining its potential effect on firm performance from other samples.

For marketers, managerial implications are twofold. First, for online dating firms that are unprofitable or struggling on the decision to allocate web investment areas on either self-presentation or peer-interactivity functionalities, they could interpolate their site-specific data and user-to-member conversion rate (financial performance) to determine the effects of the two types of investment on financial performance respectively. Understanding from this self-diagnosis exercise helps firms making investment decisions.

Second, results from this study show self-presentation drives peer-interactivity in a statistically significant way. Thus, self-presentation is the top priority for a profitable dating site. Therefore, loopholes in self-presentation stages

should be filled. For instance, firms need to reduce users' deliberate leak of alternative contact methods at their self-presentation pages. Users are now found to embed their instant messaging accounts into their profile photographs for off-site communication. Effective and speedy censoring users' uploaded information before publishing them online is needed. In addition, dating users' on-site nicknames are often simultaneously used on other social network sites for ease of recall. Potentially, a user could be unknowingly reached when one is searched by their nicknames on some social networking sites (for example, Kaixin001.com and Renren.com with market shares of 19.6 per cent and 26.8 per cent in China). A unique system-generated numerical ID (or other combinations) could potentially address this issue. In sum, customer opportunistic behaviour directly reduces users' spending on peer-interactivity, and jeopardises dating sites' vital financial income.

Third, digital marketers could further re-think the adaptation strategies when modelling after the North American dating sites into a Chinese context. One large dating site based in Southern China, for instance, with average online self-presentation capability and sub-optimal online peer-interactivity functions, generates nevertheless strong financial performance in the market. In an interview with the author on a parallel project, the general manager explained that unlike Western consumers, the general Chinese consumers still have a low level of trust in the role of technology in matchmaking, where traditional matchmaking is performed by family, friends or a hired-matchmaker in a high-contextual off-line setting. The company therefore employs 700 call centre staff to follow-up paid-members' dating progress and regularly mediate among potential pairs. In a way, a human intervention is introduced into their business model in mediating the peer-interactivity on an off-line basis to generate strong financial performance. Innovative and cost-effective business models are expected while learning from Western dating business models.

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