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Adolescents' social reading: motivation, behaviour, and their relationship

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Abstract

Purpose – Using the case of social reading via WeChat in China, this paper aims to explore adolescents' social reading motivation and behaviour. It also examines how the specific dimensions of reading motivation contribute to the different aspects of social reading behaviour.

Design/methodology/approach – This study used survey approach, which gathered 1,039 valid responses from a cluster sampling in 14 middle and high schools in Shanghai, China.

Findings – The results indicated that social reading motivation was a multidimensional construct, which included the dimensions of social interaction, self-development, peer recognition, information acquisition, personal interests and time killing. The research also found that different motivational dimensions exerted different influences on adolescents' social reading activities. Specifically, the motivations of time killing and self-development are significant predictors of both the reading act and socializing act. However, information acquisition and personal interests were significant predictors only of the reading act, while social interaction and peer recognition significantly predicted the socializing act.

Research limitations/implications – The findings would be valuable for those who develop reading programs or administer adolescents' reading practice. This study can help them understand the complexity of adolescents' social reading motivation and distinguish between its different dimensions.

Originality/value – The study provides important insights into the nature of adolescents' social reading motivation and how it relates to their social reading behaviour. It not only confirmed the multidimensionality of social reading motivation as a construct but also expanded the exploration of reading motivation and behaviour to the social media arena.

Keywords Reading, Adolescents, Digital reading, Reading behaviours, Reading motivation, Social reading

Paper type Research paper

1. Introduction

As is known, reading wears two masks: on the one hand, reading can be an intensely personal and private experience; on the other hand, it can be a tool enabling readers to connect with others, share ideas and form social bonds (Hartnett, 2013). Looking back at the history of reading, although group reading exists, such as reading clubs, reading activities have been mostly undertaken by individual persons (Manguel, 1997). The information and communication technologies, particularly social media, however, facilitate the development of digital social reading practice (iResearch, 2012; Pinto *et al.*, 2014). Over the course of the past few years, a good number of social reading apps have been launched, such as Flipboard and Zaker (the latter being one of the most popular social reading apps in China). These apps

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allow readers to participate in discussion groups and to make comments and annotations on the works (Antonio *et al.*, 2013). Consequently, with the use of digital apps, reading now goes beyond mere words on pages and there opens up a myriad of options for readers: not only reading but also sharing their thoughts, favourite quotes and opinions on what have been read.

The term “social reading” refers to reading activities carried out in digital environments where readers can interact and share what they have read (BookGlutton, 2011). The rapid development of social reading greatly alters readers’ consumption of texts. In a survey of over 2,000 readers, 45 per cent of the respondents agreed that “because of social media I read more than I used to”, while one half agreed that “social media has changed the way I read” (Tod, 2015). Despite increasing research attention to social reading, published literature on this topic is scarce. The extant literature on social reading primarily focuses on concepts or classifications (Bi *et al.*, 2013; Stein, 2013), the development of reading applications (Antonio *et al.*, 2013; Xu, 2014), or library reading promotion (Liu, 2014; Mennella, 2011). The current literature, however, does not fully specify the social psychological mechanisms of social reading behaviour. Given the profound impact reading motivation has on reading activity (Zhang, 1992), motivation for social reading is an important topic for research. Meanwhile, many studies have indicated that adolescents are more likely to be influenced by new media as compared to other groups (Buckingham and Willett, 2006; Gross, 2004). The aims of the present study, therefore, are to:

- explore the motivation of adolescents’ social reading behaviour; and
- provide an in-depth understanding of its relationship with social reading behaviour.

2. Literature review

2.1 Motivations for reading and social media use

2.1.1 *Motivation for reading.* Reading research has traditionally “focused on cognitive aspects such as word recognition and comprehension” (Baker and Wigfield, 1999, p. 452). By mid-last century, researchers had begun to explore discrete motivation-related constructs, such as reading attitudes and reading interests (Butler, 1940; Holmes, 1955). Due to the dominance of behaviourism, however, these ideas failed to be fully developed for a fairly long period (Conradi *et al.*, 2014). It was not until the 1990s that research on reading motivation burgeoned and the affective aspects of reading were again recognized as important factors driving reading activity.

Understanding that motivation is crucial to effortful reading activity and often based on reader choice, researchers started to develop instruments to measure reading motivation. To date, the motivation for reading questionnaire (MRQ) developed by Wigfield and Guthrie (1995) is probably the most comprehensive and well-established motivation instrument in the reading field. MRQ was grounded in two theoretical positions, the engagement perspective and the achievement motivation theory. The engagement perspective integrates cognitive, motivational and social aspects of reading (Baker *et al.*, 1996; Guthrie and Alvermann, 1999). Specifically, it views readers as motivated to read for different purposes, uses existing knowledge to generate new understandings and participates in meaningful social interactions around reading (Baker and Wigfield, 1999). This is also the primary theoretical framework adopted in the current study to approach social reading motivation. To conceptualize reading motivation, Wigfield and his colleagues (Baker and Wigfield, 1999; Wigfield and Guthrie, 1995) adapted constructs defined and developed by researchers in the achievement motivation field, which proposed that individuals’ competence and efficacy beliefs, intrinsic and extrinsic motivation and purposes for achievement play a crucial

role in their decisions about which activities to do, how long to do them and how much effort to devote (Bandura, 1997; Pintrich and Schunk, 1996; Wigfield *et al.*, 1998). Drawing on the above work, 11 dimensions of reading motivation were conceptualized in MRQ, which were classified further into three categories:

- (1) competence and efficacy belief (self-efficacy, challenge and work avoidance);
- (2) purposes for reading (intrinsic dimensions of curiosity, involvement and importance, and extrinsic dimensions of recognition, grades and competition); and
- (3) social purposes of reading (social and compliance) (Baker and Wigfield, 1999).

To investigate the structural validity of the MRQ, Watkins and Coffey (2004) conducted two surveys with elementary school students. They found that the theoretical 11-factor structure did not adequately fit the data in either sample. Alternatively, they found that the 54 MRQ items loaded on eight factors, including grades-compliance, social, competition, involvement, curiosity, recognition, efficacy and work avoidance. More recently, Schiefele and Schaffner (2016) used a sample of 883 sixth-grade students to validate a seven-dimension reading motivation with 34 motivation items. Five of these dimensions (curiosity, involvement, grades, competition and social recognition) were drawn from MRQ, whereas two other dimensions – emotional regulation and relief from boredom – were drawn from their own qualitative findings.

The MRQ has been called a “valid and reliable questionnaire” (Guthrie and Wigfield, 1999, p. 200), and its 11 scales described as important “facets of student motivation that can affect reading” (Pressley, 2002, p. 289). Despite the fact that all the relevant studies generated evidence for the multidimensionality of reading motivation, studies repeatedly found a lack of support for the 11-factor MRQ structure. Given this fact, further investigation is needed to clarify the underlying factor structure of reading motivation. Such an endeavour could also be extended to the new construct of social reading. In so doing, we aim to shed more light on the new common form of reading in the digital era.

2.1.2 Motivation for social media use. With the rapid development of social media, researchers have examined why users join and use social media: motivation for social media use. The uses and gratifications (U&G) theory is one of the primary theories used to address this issue. It assumes that an individual person derives gratification from using the medium to fulfill certain needs (Katz *et al.*, 1973) and is widely used in the field of communication research (Ruggiero, 2000). Using this theory and a Web-based survey of college students, Park *et al.* (2009) found four primary needs for participating in Facebook groups: socializing, entertainment, self-status seeking and information. Drawing from the U&G theory and social cognitive theory, Lee and Ma (2012) explored factors influencing news sharing in social media, which is similar to the sharing act in social reading activity in the present study. They observed that students who were driven by gratifications of information seeking, socializing and status seeking were more likely to share news on social media platforms. Recently, Malik *et al.* (2016) examined users’ motivation in sharing photos on Facebook. They identified six motivations: affection, attention seeking, disclosure, habit, information sharing and social influence.

A review of the literature on motivations for reading and social media use yielded the following observations. First, researchers have made great progress in exploring reading motivation, agreeing that reading motivation is multidimensional in nature (Schiefele *et al.*, 2012). The established measures of reading motivation, such as MRQ and its revised versions, however, were developed out of traditional reading practice, which is different from the new media form of social reading. Second, although the extant literature on social media use motivation disclosed some main reasons why

people use social media, the social reading activity differs from general social media use in its specific focus on reading. To the authors' knowledge, there are currently no established measures on social reading motivation. Given the rapid diffusion of digital social reading practice, more work should be conducted to explore motivations driving this new form of reading and to examine whether there is distinction between the factors impacting traditional reading and digital social reading. To reach that end, the following research questions are asked:

RQ1. Is the motivation for social reading multidimensional?

RQ2. If it is multidimensional, what are the specific dimensions of social reading motivation?

2.2 Reading behaviour and its relation to motivation

Reading is not a single activity but a complex and variable behaviour (Liu, 2005). Most extant empirical studies examine reading behaviour by measuring individuals' reading time, reading frequency, reading amount and reading breadth (Cox and Guthrie, 2001; Liu, 2007). For instance, the widely used reading activity inventory (RAI) (Guthrie *et al.*, 1994) assesses students' reading behaviour with self-reported measures on the breadth and frequency of reading in different topic domains. Researchers also used other measures. For example, Zhang (2002) measured reading behaviour of primary school students in Taiwan on four dimensions: reading frequency, reading time, reading initiative and sharing during the reading process.

Self-determination theory (Deci, 1992) argues that human behaviour could be efficiently determined by motivations to attain various goals, outcomes or standards. It suggests that autonomous and self-determined behaviour is positively influenced by motivational variables. While reading, as well as social reading, is an effortful activity often up to an individual's choice, it is in many cases an autonomous and self-determined activity. Motivation, therefore, is expected to play a pivotal role in reading and social reading engagement. Guthrie *et al.* (1999) found that, even when they controlled for previous achievement and prior knowledge, students' reading amount was significantly predicted by their reading motivation. Baker and Wigfield (1999) reported that all of the dimensions of reading motivation were significantly correlated with children's reported reading activity. However, studies revealed that different dimensions of motivation play different roles in shaping reading behaviour. Specifically, intrinsic motivation was found to be a better predictor than extrinsic and social motivation in explaining the variance of traditional reading behaviour (Wigfield and Guthrie, 1997). Wang and Guthrie (2004) even found that extrinsic motivation was negatively related to the amount of reading for enjoyment and had no influence on reading for school. With regard to the role of social motivation, previous studies found that it either did not significantly influence the reading amount or, relative to other motivation dimensions, was a significant yet much weaker factor (Lau, 2009; Tercanlioglu, 2001).

In brief, reading motivation, especially the intrinsic motivation, was found to account for considerable variance in students' reading behaviour (Retelsdorf *et al.*, 2011; Taboada *et al.*, 2009; Unrau and Schlackman, 2006). The existing empirical studies, however, have mostly focused on traditional reading practice. What makes social reading different from traditional reading is the enhanced social function of reading. What previously could only take place in meetings with friends or in public readings, such as sharing comments and opinions on readings, can now be done at any time on the internet and could even be extended to people that users do not know (Romero, 2012). Considering the difference between traditional and

social reading, and the possible difference in motivation structure and the specific roles of motivation dimensions, the following research questions are posed:

- RQ3.* What is the relationship between adolescents' social reading motivation and their social reading behaviour?
- RQ4.* Do the different dimensions of social reading motivation play different roles in predicting social reading behaviour?

3. Research methodology

3.1 A selected case of WeChat

WeChat is a mobile text and voice messaging communication service developed by Tencent, one of the biggest internet companies in China and in the world. Since its launch in January 2011, WeChat has grown so rapidly that it has become the most popular social media app in China. It is also one of the largest standalone messaging apps based on monthly active users in the world (549 million in the first quarter of 2015, the majority based in China) (Tencent, 2015). For businesses and government agencies in China, WeChat official accounts have become a very common service and promotion platform. WeChat has three unique features: Moments, Shake and People Nearby. Among them, WeChat Moments (in Chinese this is called Circle of Friends) provides space where you share your life, thoughts and readings with friends by posting texts and images, clicking like, making comments or forwarding content. WeChat Moments has been an important Web portal of information. According to Xiaolong, the product manager of WeChat, 80 per cent of WeChat users read Moments, and it is estimated that on average 5.86 articles were read by each active WeChat user per day (Wang, 2014).

For the purpose of this study, WeChat reading was selected as a case of digital social reading, which is defined here as the activity of users reading the content forwarded by official accounts or by friends via WeChat Moments. Reading via WeChat possesses the key features of social reading. First, different from those on Facebook or Weibo (microblogging), contents forwarded by official accounts or friends on WeChat are – in many cases – of fairly good length, which justifies the label of *reading*. Second, users could easily interact and share opinions by using the functions of clicking like, making comments or forwarding content on WeChat, which justifies the label of *social*. The pilot study for the present research found that a big percentage of middle and high school students read content via WeChat, while very few use specialized social reading apps, such as Flipboard and Zaker. Given the above considerations, the authors decided to examine the reading activity on WeChat to explore the issue of adolescents' social reading.

3.2 Participants and procedures

The target population of this study is adolescents who have reading experience via WeChat. A survey method was adopted for the main study. As social reading is a relatively under-explored topic, there is a lack of established constructs and scale measures for these constructs. In such a situation, researchers suggest starting with qualitative data collection and analysis, such as focus groups, and then using the results to establish the issues to be addressed and design a subsequent larger-scale quantitative phase of the study, such as a questionnaire survey (Tashakkori and Teddlie, 1998).

In this case, a focus group was first conducted with 16 middle and high school students (evenly distributed regarding gender and grades) from different schools in Shanghai who had experience using the WeChat reading option. The discussion in the focus group covered three main topics: WeChat reading behaviour patterns, reasons for WeChat reading and the

influence of WeChat reading on individuals. The focus group revealed some primary reasons/motivation for WeChat reading, which include information/knowledge acquisition, entertainment and socialization. Based upon the existing literature and information gained from the focus group, initial scales measuring social reading motivation and social reading behaviour were constructed. A pilot study was then conducted with a convenience sample of 48 middle and high school students, primarily to improve the face validity of the new instruments.

The main study survey was conducted over two weeks in June 2014. A multi-stage cluster sampling was used to recruit respondents. The metropolitan city of Shanghai is administratively equal to a province in China. It is divided into 16 county-level divisions (15 districts and one county). Out of these divisions, seven districts govern *Puxi* ("West Bank"), the older part of urban Shanghai on the west bank of the Huangpu River; and one district *Pudong New Area* governs *Pudong* ("East Bank"), the newer part of urban and suburban Shanghai on the east bank of the Huangpu River. The rest of the divisions govern the suburbs, satellite towns and rural areas further away from the urban core of Shanghai. Considering the sheer size and dense population of *Pudong New Area*, this area was further divided into two categories: *Urban Pudong* and *Suburban Pudong*. For the first-stage sampling, the researchers randomly selected three districts from the seven *Puxi* districts (the main part of urban Shanghai), two districts from the eight suburban and rural divisions, and included both in the *Urban Pudong* and *Suburban Pudong* areas. For the second-stage sampling, one middle (junior high) school and one (senior) high school in each of these seven districts were selected, making a total of 14 schools (seven middle schools and seven high schools) to represent adolescents in Shanghai. Questionnaires were distributed in classrooms in these 14 schools under teachers' supervision. As students in Grade 3[1] of both middle school and high school were busy preparing for the coming entrance examination at the time of data collection, our paper-pencil surveys were only distributed to students in Grades 1 and 2. Students who had no experience of WeChat reading were screened out at the time of questionnaire distribution. The researchers randomly selected one Grade 1 class and then one Grade 2 class and kept going this way until there were 100 respondents in each school. A total of 1,400 students responded to the survey. Participants received no incentives.

3.3 Measures

3.3.1 Social reading motivation. The social reading motivation measure contained 22 items, which were adapted from the existing motivation scales. Specifically, the items measuring reading motivation were mainly adapted from the traditional reading motivation scales, such as MRQ (Baker and Wigfield, 1999; Lau, 2004), and the items measuring socializing purposes draw upon the literature on motivation of social media use and information sharing (Lee and Ma, 2012; Park *et al.*, 2009). The measurement also took the input from the focus group study and the unique features of WeChat reading into consideration. All the items were rated on a five-point Likert scale (1 = totally disagree, 5 = totally agree).

3.3.2 Social reading behaviour. In line with our focus group findings, adolescents' social reading behaviour could be classified into two categories: the reading act and the socializing act. Measuring items for these two acts in the present study were created with main reference to the RAI (Guthrie *et al.*, 1994) and Zhang's (2002) research findings. To be specific, the reading act (Cronbach's $\alpha = 0.75$) was assessed by asking the frequency of reading the content posted by official accounts and forwarded by friends. The socializing act (Cronbach's $\alpha = 0.86$) was measured with the frequency of three

socializing acts enabled in WeChat during social reading activity: clicking like, making comments and forwarding contents.

3.4 Data analytic method

Data analyses were conducted in several steps with SPSS 21.0. First, a split-half validation procedure was used to evaluate and then confirm the factor structure (Kupeli *et al.*, 2013; LaBrie *et al.*, 2012; Park *et al.*, 2013) of social reading motivation. That is, a random half of the participants were used for the exploratory factor analysis (EFA), with the remaining half reserved for confirmatory factor analysis (CFA) procedures. Differences in demographic variables were examined to ensure that there was no significant difference between the two groups regarding the distribution of students' gender and grade, and, thus, the two groups were comparable. Next, EFA was conducted for the first group to identify the specific motivation factors driving adolescents' social reading. This was followed by CFA on the second group to verify the factor structure derived from EFA. Finally, hierarchical regression analyses were conducted to examine the relationship between adolescents' social reading motivation and their social reading behaviour.

4. Data analyses and results

4.1 Descriptive statistics

During data screening, all the cases with missing data were excluded. A total number of 1,039 cases were kept for final analyses. Descriptive statistics showed that the sample had more female students (54.8 per cent) than male students (45.2 per cent). In terms of grade level, the percentage of middle school students (48.7 per cent) was quite close to that of high school students (51.3 per cent).

When asked for their reading frequency in the past month, almost half of the respondents read via WeChat at least once every day (21.9 per cent students read once every day and 25.4 per cent read twice or even more every day), 15.4 per cent read once every two days and the remaining 37.2 per cent were lighter users who read via WeChat once for every three or more days (Figure 1). With regard to the average time per reading, the percentage of respondents decreased as the average time per reading increased. Specifically, about 32 per cent of the respondents read for 5 min or less per reading, followed by one quarter reading for 6-15 min. About 13 per cent of the respondents read for more than 1 hour per reading (Figure 2).

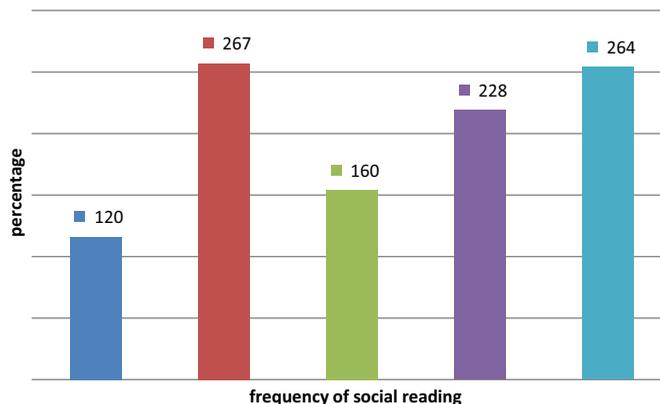


Figure 1.
Respondents' frequency of social reading

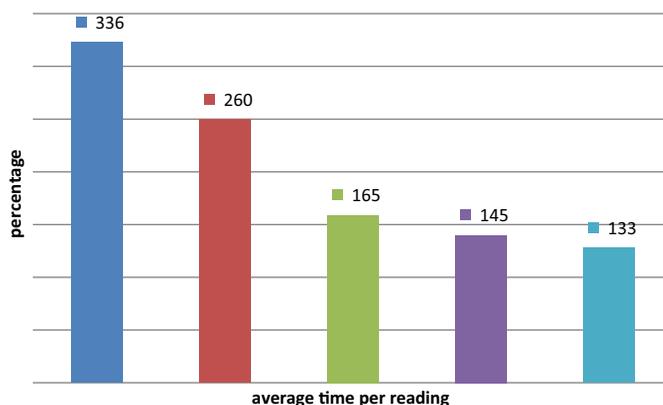


Figure 2.
Respondents' average time per reading

4.2 Factor analyses

One main goal of the present study was to examine whether the construct of social reading motivation is multidimensional and, if it is, to identify its specific dimensions. To achieve this goal, a split-half validation approach was adopted as introduced in Section 3.4.

4.2.1 Exploratory factor analysis. For the first half of the sample ($n = 519$), the kaiser-meyer-olkin (KMO) index of sampling adequacy was 0.94, indicating that the data represented a homogeneous collection of variables that were suitable for factor analysis. A principal component analysis with varimax rotation with the data was run, which yielded six factors. To identify factors from item loadings, the criterion of loadings greater than 0.40 was used (Salkind, 2010). Of all the items, one item (“Reading via WeChat can help me forget worries temporarily”) did not yield a satisfactory loading on any of the factors and thus was dropped from the scale. The remaining 21 items were submitted to another principal component factor analysis, which resulted in six factors explaining 76.85 per cent of the total variance. As shown in Table I, the factor solution displayed a rather clean loading pattern, with each item having a significant high loading on one single factor. Thus, based on conceptual interpretability, the six factors were labelled as: social interaction (SI), self-development (SD), peer recognition (PR), information acquisition (IA), personal interests (PI) and time killing (TK).

4.2.2 Confirmatory factor analysis. To verify the six dimensions of social reading motivation derived from the EFA, CFA was performed on the second subsample ($n = 520$). By convention, comparative fit index (CFI) and tacker-Lewis index (TLI) of 0.95 or above, root means square error of approximation (RMSEA) of 0.06 or less serve as a good model fit (Hu and Bentler, 1998; Ullman and Bentler, 2003). The fit indices of the model provided only a marginally acceptable fit to the data ($\chi^2 = 456.31$, $df = 174$, $p < 0.001$, CFI = 0.94, TLI = 0.93, RMSEA = 0.07). According to the modification indices, if the path between the item “I read via WeChat to be informed of what my friends are concerned about” and SI factor are included, the chi-square value could be reduced by nearly 50. Meanwhile, using the 0.40 loading threshold (Salkind, 2010), this item cross-loaded on the factors of IA and SI during the EFA. Taking both the cross-loading fact and the modification suggestion into consideration, this item was deleted from the scale. While the chi-square is sensitive to sample size and might be significant due to the large sample (Kline, 2011), all the fit indices

Items	Factor loading						h^2
	SI	SD	PR	IA	PI	TK	
I read via WeChat to get more topics to communicate with others	<i>0.76</i>	0.28	0.17	0.15	0.19	0.09	0.86
I read via WeChat to easily join others' conversations	<i>0.73</i>	0.30	0.16	0.13	0.25	0.15	0.79
Interacting and sharing content with others in WeChat enables me to keep in touch with my friends	<i>0.72</i>	0.17	0.27	0.19	0.24	0.10	0.73
Interacting and sharing contents with others in WeChat makes me more active in Moment	<i>0.69</i>	0.24	0.28	0.11	0.13	0.18	0.83
Interacting and sharing contents with others in WeChat makes me popular in Moment	<i>0.68</i>	0.24	0.34	0.11	0.09	0.22	0.85
I like reading via WeChat, for it is helpful for me to communicate with others	<i>0.66</i>	0.37	0.23	0.10	0.22	0.11	0.78
I like reading via WeChat, for it can help me to improve my school performance	0.29	<i>0.81</i>	0.19	0.05	0.05	0.18	0.78
I read via WeChat because it can help me to improve my reading ability	0.26	<i>0.80</i>	0.21	0.14	0.08	0.14	0.71
I read via WeChat because it can help me to improve my cultural literacy	0.29	<i>0.67</i>	0.18	0.09	0.19	0.14	0.80
I like reading via WeChat, for it can enrich my knowledge beyond the classroom	0.24	<i>0.68</i>	0.16	0.27	0.32	0.02	0.72
When interacting and sharing contents with friends via WeChat, they think I am helpful to them	0.30	0.14	<i>0.83</i>	0.12	0.12	0.13	0.80
When interacting and sharing contents with friends via WeChat, they think I facilitate information sharing	0.27	0.20	<i>0.78</i>	0.12	0.22	0.06	0.75
Overall speaking, when interacting and sharing contents with friends via WeChat, they think I am valuable	0.29	0.33	<i>0.75</i>	0.05	0.10	0.13	0.74
I read via WeChat to get all kinds of information	0.07	0.10	0.10	<i>0.88</i>	0.23	0.03	0.76
I like reading via WeChat, for it can let me know what is going on around us	0.14	0.16	0.10	<i>0.82</i>	0.15	0.20	0.69
I read via WeChat to be informed of what my friends are concerned about	0.40	0.13	0.06	<i>0.64</i>	0.12	0.31	0.72
I like reading the contents relevant to my interests in WeChat	0.23	0.06	0.15	0.26	<i>0.79</i>	0.06	0.68
I often read the content which interests me in WeChat	0.25	0.20	0.16	0.21	<i>0.76</i>	0.19	0.71
Reading via WeChat can satisfy my interests	0.27	0.39	0.17	0.09	<i>0.60</i>	0.25	0.80
I read via WeChat when I have nothing to do	0.20	0.10	0.13	0.28	0.32	<i>0.78</i>	0.85
I read via WeChat when I am in bad mood	0.34	0.37	0.20	0.19	0.07	<i>0.71</i>	0.78

Table I.
Factor loadings from principal-components analysis

Notes: Factor pattern matrix is displayed; Item loadings highest on a dimension are in italic face; h^2 = communalities

of the revised model suggested an acceptable model fit ($\chi^2 = 407.47$, $df = 155$, $p < 0.001$, $CFI = 0.96$, $TLI = 0.95$, $RMSEA = 0.06$).

Next, a reliability test was conducted to assess internal consistency of the multiple indicators for each dimension. All the values of Cronbach's α are between 0.77 and 0.89, indicating that all the measures are reliable in assessing the relevant dimensional construct (Nunnally, 1978). A construct validity test was also conducted using factor loadings within the construct and average variance extracted (AVE). All standardized factor loadings were statistically significant ($p < 0.001$) with the values ranging from 0.71 to 0.87, and all AVE values (between 0.55 and 0.67) exceeded the suggested cut-off value of 0.50, showing that the measurement had convergent validity (Hair *et al.*, 2012).

4.3 Hierarchical regression analyses

To examine the relationship between adolescents' social reading motivation and their social reading behaviour, two two-step hierarchical regression analyses were conducted: one using the reading act as the dependent variable (DV) and the other using the socializing act as DV. Previous empirical studies found that gender and grade level had significant impact on students' reading behaviour (Karim and Hasan, 2007; Lau, 2009; Song *et al.*, 2000). The analyses thus treated gender and grade as control variables. The different dimensions of social reading motivations were treated as independent variables (IVs). Regression results are presented in Table II.

In the first step, control variables were entered into the two regression models. Both gender ($\beta = 0.15, p < 0.05$) and grade ($\beta = -0.26, p < 0.001$) were found to be significant predictors of the reading act ($R^2 = 0.01$). However, for the socializing act, only grade ($\beta = -0.39, p < 0.001$) was found significant ($R^2 = 0.03$). In the second step, the social reading motivation variables were added to the regression models. With this step, the control variable of gender in the first model (reading act as DV) became non-significant, while grade remained a significant predictor in both models. Moreover, with the addition of motivation variables, the increases in R^2 values were highly significant ($p < 0.001$) in both models. This indicated that social reading motivations, in aggregate, affected adolescents' social reading behaviour.

For the model with the reading act as DV, of the six motivation dimensions, SD ($\beta = 0.24, p < 0.001$), IA ($\beta = 0.13, p < 0.01$), PI ($\beta = 0.15, p < 0.01$) and TK ($\beta = 0.34, p < 0.001$) were found significant predictors of the DV. Yet for the model using the socializing act as DV, changes occurred. While the two dimensions of SD ($\beta = 0.20, p < 0.001$) and TK ($\beta = 0.25, p < 0.001$) remained as significant factors, two other motivation dimensions of SI ($\beta = 0.18, p < 0.001$) and PR ($\beta = 0.18, p < 0.001$) were found to be significant predictors of the socializing reading act. Last, this same set of IVs accounted for 19 per cent variance in the reading act and 37 per cent of the variance in the socializing act.

5. Conclusions and discussion

Using the survey method, the present study confirmed the multidimensionality of the motivation driving adolescents' social reading. Specifically, the study identified six

Variables	Reading act		Socializing act	
	Step 1	Step 2	Step 1	Step 2
<i>Demographics</i>				
Gender ^a	0.15* (0.08)	0.11 (0.07)	0.09 (0.07)	0.06 (0.06)
Grade level ^b	-0.26*** (0.08)	-0.21** (0.07)	-0.39*** (0.07)	-0.29*** (0.06)
<i>Motivation</i>				
Social interaction		0.07 (0.06)		0.18*** (0.05)
Self-development		0.24*** (0.05)		0.20*** (0.04)
Peer recognition		0.07 (0.05)		0.18*** (0.04)
Information acquisition		0.13** (0.04)		0.03 (0.03)
Personal interests		0.15** (0.05)		0.02 (0.04)
Time killing		0.34*** (0.04)		0.25*** (0.03)
R^2	0.01	0.19	0.03	0.37
ΔR^2		0.18***		0.34***

Notes: ^aFemale = 0; Male = 1; ^bMiddle School = 0; High School = 1; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table II. Hierarchical regression analyses of social reading motivation and behaviour

dimensions of social reading motivation: SI, SD, PR, IA, PI and TK. This finding is consistent with the widespread view that reading motivation is a multidimensional construct (Chapman and Tunmer, 1995; Gambrell *et al.*, 1996; Watkins and Coffey, 2004), no matter whether it is in the traditional or new digital environment. The results of this study also lend support to a general assertion that reading motivation affects reading behaviour (Baker and Wigfield, 1999; Guthrie and Cox, 2001; Lau, 2009). After controlling for gender and grade, the social reading motivation variables in aggregate accounted for a significant proportion of the total variation in social reading behaviour.

5.1 Dimensions of social reading motivation

The results of this study revealed both similarities and disparities between traditional reading motivation and social reading motivation. While some dimensions of social reading motivation, such as the motivation of IA and TK, are identical to those of traditional reading practice, the others may take on different connotations. For instance, the dimension of PR means others' recognition of individuals' reading skill or reading achievement in the traditional reading context (Wigfield and Guthrie, 1997), in the context of social reading, primarily refers to the recognition of individuals' value on facilitating information delivery to the virtual reading group. There is another noteworthy dimension of reading motivation – SI, which is especially prominent and valuable for social reading. The most widely used forms of social reading presently are social network book sites and social reading apps, which allow users to interact online, such as participating in online discussion groups. For example, taking the case of WeChat reading, when people read content via WeChat, they can interact and share ideas with others by clicking like, making comments and forwarding contents within the virtual community. The dimension of SI identified in the present study not only refers to users' desire to get topics from reading for talking with others in the real world, which is similar to that in the traditional reading environment, but also indicates their desire to interact with people in the virtual reading community, which is unique to the present digital social reading and thus deserves attention.

A broad conceptualization of reading motivation provided by reading engagement theory (Guthrie and Alvermann, 1999) is that there exist intrinsic regulators, such as curiosity, and extrinsic regulators, such as recognition. According to the self-determination theory (Deci and Ryan, 2008), such intrinsic and extrinsic motivations may form a continuum. The six dimensions of social reading motivation identified in this study may readily fall on this continuum. Specifically, both PI and TK could be grouped as intrinsic motivations, lying toward the intrinsic end of the continuum. The dimension of PR could be interpreted as the desire to be recognized or appreciated by others, thus lie more towards the extrinsic end of the continuum. Meanwhile, the three dimensions of SI, SD and IA are functional dimensions. They do not focus on inherently rewarding qualities of social reading but more on using social reading as a tool to bring about desired outcomes, hence fall more in the middle of the continuum.

5.2 Relationship between social reading motivation and behaviour

The regression analyses results suggested that multiple dimensions of reading motivation contributed to the variation in adolescents' social reading behaviour. The specific effects of the motivation dimensions, however, varied in different situations (with different DVs). Some dimensions had a greater effect on reading behaviour than others. First, of the six motivation dimensions, two of the dimensions (i.e. TK and SD) were consistently significant predictors of both the reading act and the socializing act of adolescents' social reading behaviour. These two dimensions were also the strongest predictors for both acts. Specifically, TK was the strongest predictor for both DVs and

SD ranked next. This indicated that adolescents conducted digital social reading mainly to kill time and to seek self-improvement, which is exactly the same as people do in traditional reading. In this sense, the current digital social reading carries the same fundamental function of reading: enjoyment and utility (ChanLin, 2013; Greanye and Neuman, 1990).

One more finding worth noting is that the reading act and the socializing act were predicted by different sets of motivations. Although the motivations of IA and PI were significant predictors of the reading act, they were non-significant for the socializing act. At the same time, however, the motivation dimensions of SI and PR significantly predicted the socializing act but not the reading act. In brief, the reading and social components of the social reading behaviour started off with different goals. The reading act appeared to be mainly driven by intrinsic motivations, which were consistent with previous findings that intrinsic motivation was better at predicting reading behaviour than extrinsic motivation (Guthrie and Cox, 2001; Lau, 2009), while the socializing act seemed to be more influenced by extrinsic motivations and social purposes. What distinguishes social reading from traditional reading is primarily the socialization function. Although socializing also occurs in the traditional reading environment (e.g. readers participating in discussion groups or reading clubs), people can communicate more freely across time and space in the digital environment. Other than reducing the limitations that physical boundaries impose on people's SIs, computer-mediated communication has the potential to breach social boundaries imposed by traditional norms and social roles (Postmes *et al.*, 1998). Therefore, it is clear that social reading in the digital environment can greatly enhance the socialization function compared to the traditional reading activity.

6. Implications and limitations

The current study provides important insights into the nature of adolescents' social reading motivation and how it relates to their social reading behaviour. It not only confirmed the multi-dimensionality of reading motivation as a construct but also expanded the exploration of reading motivation and behaviour to the social media arena. From a scholar's point of view, the current study complements both the reading and social media literature by delineating the social psychological mechanisms of social reading behaviour. The newly developed scale of social reading motivation could be used as the foundation for later research on this topic. The authors found that different motivational dimensions exerted different influences on adolescents' reported social reading activity: the reading act and the socializing act. One important implication of the results is that adolescents' social reading motivation is a multifaceted concept. It is oversimplified, therefore, to judge whether adolescents are motivated to read. The fact is that they are motivated to conduct social reading for different reasons and exhibit different behaviours (reading-oriented or socializing-oriented) with different needs. Thus, it is important for those who develop or administer adolescent reading practice or programs, such as school teachers and librarians, to understand this complexity and distinguish between the different motivation dimensions.

Several limitations of this study should be acknowledged. First, the motivational dimensions examined in this study did not capture the full variance of the social reading motivation. More efforts could be made to identify additional motivational dimensions in

the future. Second, the survey was conducted in Shanghai, one of the most developed cities in China. Thus, caution must be taken in generalizing the results. The same investigation could be conducted in more cities in China as well as other countries to improve the external reliability and the generalizability of the results. Finally, although reading via WeChat carries the key features of social reading as mentioned earlier, it is not a specialized social reading app. To some extent, this might influence adolescents' perception of WeChat's functions and the interpretation of the results. Specifically, adolescents may view WeChat more as a socializing app rather than a reading app, which in turn might influence their reports of social reading acts and perceptions in this study. Similar investigations in the future could be conducted on more specialized social reading apps, such as Flipboard and Zaker.

Note

1. In China, there are three years of junior secondary education (middle school) for ages 12 to 15 years and then three years of high school education to complete the secondary education. At the end of each of the two stages, students need to take competitive entrance examinations into high school and college, respectively.

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Further reading

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