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Self-construal predicts reading motivation: A comparison between Hispanic American and Japanese college students

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Abstract

Self-construal refers to how individuals view themselves independently from others (Independent self-construal) or interdependently with others (Interdependent self-construal). Although the self-construal theory claimed a connection between self-construal and motivation, none of studies explored the relation between self-construal and reading motivation. To bridge the gap, this study examined country and gender differences in self-construal and reading motivation of 236 Hispanic American and 114 Japanese college students. Additionally, we investigated the relation between self-construal and reading motivation. Our data indicated that country and gender modulated reading motivation, particularly reading efficacy. Furthermore, self-construal significantly predicted reading motivation regardless of country or gender. Specifically, Hispanic American and Japanese students with higher independence showed higher reading efficacy, whereas students with higher interdependence exhibited lower reading efficacy. This is the first study to reveal the close relation between self-construal and reading motivation in the field of education.

Keywords Reading motivation · Self-construal · Cross-cultural research · College students · Hispanic American · Japanese

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1 Introduction

Reading is one of the most vital skills in student learning (Fernald, 2004) and needed for academic success in higher education (Cantrell et al., 2018; Kambara et al., 2021). Reading is necessary for understanding course content (St. Clair-Thompson et al., 2018), facilitating engagement with class discussions (Leeming, 2002), and improving better comprehension and writing styles (Mokhtari et al., 2009). Regardless of the significance of reading, lack of reading engagement in university contexts has been reported by several research studies (Clump et al., 2004; Conner-Greene, 2000; Huang et al., 2016). Clump et al. (2004) reported that merely 27% of undergraduate students finished reading assignments before their next class. Relatedly, Conner-Greene (2000) described that 72% of undergraduate students either rarely or never read homework on schedule. Huang et al. (2016) compared college students' reading practices between the United States and Chile and found that American students spent only 4.94 hours weekly, which was fewer than Chilean students.

Previous studies (e.g., Hatteberg & Steffy, 2013; St. Clair-Thompson et al., 2018) have elucidated that reading motivation could be one of the related elements on meagerness of reading among college students. Reading motivation has been reported as a critical contributor to reading comprehension (e.g., Baker et al., 2000; Guthrie & Wigfield, 2000; Schaffner et al., 2013; Unrau & Schlackman, 2006) and achievement (e.g., Baker & Wigfield, 1999; Guthrie et al., 1999; Taboada et al., 2009; Unrau & Schlackman, 2006). For example, Schaffner et al. (2013) reported that reading amount facilitated the positive influence of intrinsic reading motivation on comprehension, while extrinsic reading motivation mediated negative influence on comprehension. In addition, Baker and Wigfield (1999) found a positive association between reading motivation and achievement.

Despite the significance of reading motivation in college students, the majority of previous reading motivation studies emphasized primary grades and early adolescence (Conradi et al., 2014) and ignored the college student population. To the best of our knowledge, there are only two studies (Kambara et al., 2021; Kambara & Lin, 2021) examining college students' reading motivation. Kambara et al. (2021) examined the factor structure of reading motivation in Japanese college students. Kambara and Lin (2021) utilized a qualitative study to explore factors impacting bilingual Hispanic American college students.

In addition, the role of gender on reading motivation has been exclusively researched on elementary student populations in the United States with none on college students. Most of the research (Eccles et al., 1993; Marinak & Gambrell, 2010; McGeown, 2015; McGeown et al., 2012; Wigfield & Guthrie, 1997; Wigfield et al., 1997) reported gender differences in American elementary students' reading motivation to show that girls tend to value more reading than boys, but there were few studies (e.g., Baker & Scher, 2002; Kambara & Lin, 2021) reporting no gender differences. To date, no studies explored gender differences in reading motivation with college students. Therefore, there is a need to further explore the role of gender in reading motivation among college students.

Furthermore, there is an increasing number of studies that investigated reading motivation in different racial and ethnic groups (Huang, 2013; Kambara, 2020; Kambara, et al., 2021; Lau, 2004). Kambara et al. (2021) reported different factor structures for reading motivation in Japanese college students by validating a reading motivation instrument that was originally developed with Australian young adults. Their study suggested we need to consider the effects of unique cultural and ethnic backgrounds on students' reading motivation. Previous studies exclusively emphasized European American culture and overlooked other racial and ethnic groups. To address these research needs, the present study investigated reading motivation across genders and different ethnic and racial groups.

2 Literature review

2.1 Determinants of reading motivation

Reading motivation is multifaceted and refers to views and understandings which drive individuals to absorb reading related activities (Unrau & Quirk, 2014). Reading motivation plays a significant role in students' learning and development. Reading motivation "concerns energy, direction, persistence, and equifinality—all aspects of activation and intention" (Ryan & Deci, 2000, p. 69). Thus, students "will never research their full literacy potential" (Gambrell, 2009, p.1) without possessing reading motivation.

Reading motivation has been associated with academic achievement (Bozack & Salvaggio, 2013), dropout rates (Finn, 1989; Reschly, 2010), and reading comprehension (Baker et al., 2000; Gambrell, 2011, Guthrie et al., 2007; Guthrie & Wigfield, 2000; Martínez et al., 2008; Morgan & Fuchs, 2007; Schaffner et al., 2013; Unrau & Schlackman, 2006). Bozack and Salvaggio (2013) found that reading motivation was strongly correlated with middle school students' academic achievement, feasibly envisaging their later achievement. In addition, reading difficulty negatively impacted reading engagement and motivation (Guthrie & Wigfield, 2000), which could elicit later dropout (Finn, 1989; Reschly, 2010).

A great body of previous studies reported that reading motivation significantly relates to reading comprehension. Guthrie et al. (1999) reported reading motivation positively correlated with 10th grade students' reading comprehension after modulating different factors. Some research (Guthrie et al., 2012; Wang et al., 2020) reported some moderating factors (e.g., reading amount) to explicate the association between reading motivation and reading comprehension. Reading amount, the occurrence and amount of reading a person devotes, has been found to be the most significant moderating factor (Wang et al., 2020) in the relation between reading motivation and reading comprehension. Prior studies reported that reading motivation predicted reading amount (Guthrie et al., 1999; Wigfield & Guthrie, 1997) and that reading amount predicted reading comprehension (Schiefele et al., 2012).

2.2 Hispanic American students' reading motivation

A very limited number of studies examined Hispanic American students' reading motivation. To the best of our knowledge, there are only four studies (Griffin et al., 2020; Kambara & Lin, 2021; Loera et al., 2011; Quirk et al., 2020) available related to reading motivation. Three of them focused on elementary grades to high school students. For example, Loera et al. (2011) examined the association between Hispanic American elementary and middle school students' reading motivation and their parental involvement in reading. The results showed a positive correlation between parental involvement in reading and students' reading motivation. Moreover, Quirk et al. (2020) found a positive correlation between parental educational level and reading motivation in Hispanic American middle school students. Griffin et al. (2020) explored reading motivation among Hispanic American high school students and found an association between reading self-concept and reading attitudes. There is currently only one study that explored Hispanic American college students. Kambara and Lin (2021) explored Hispanic American bilingual college students' reading motivation using a qualitative approach. They explored factors influencing reading motivation of bilingual college students by adopting the bioecological model of human development (Bronfenbrenner 1974, 1977, 1994). They found their reading motivation was impacted at the *microsystem* (learner's direct interactions, e.g., family, teachers, and friends), *exosystem* (indirect influences from formal and informal social structures, e.g., community, neighborhood, and parents' workplaces), and *macrosystem* (the coherence perceived at the *micro-*, *meso-*, and *exo-* system levels; beliefs and ideologies) levels. Their study also reported that reflective, autonomous, and interactive learning environments were useful for facilitating participants' reading motivation. Given there was only one study available in the current literature, more studies need to explore reading motivation of Hispanic American college students, especially using quantitative approaches which provide insights about group patterns in reading motivation.

2.3 Japanese students' reading motivation

Currently, there are three studies (Kambara, 2020; Kambara & Lin, 2021; Kambara, et al., 2021) available that explored Japanese elementary and college students' reading motivation. Kambara (2020) investigated Japanese fourth grade students' reading motivation through a mixed-method approach. The quantitative results revealed low self-efficacy, competition, and recognition as well as high sense of compliance that could be reflective of the social norms of Japanese culture. In addition, the qualitative results showed that grades and a strong emphasis on testing greatly affected Japanese students' motivation to read. Moreover, Japanese parents and teachers predominately promoted students to read to improve their grades. Both quantitative and qualitative results illustrated a strong cultural influence on Japanese students' reading motivation. Recently, Kambara and Lin (2021) compared reading motivation of American and Japanese fourth graders. American fourth graders showed

higher reading motivation than Japanese students on different dimensions, including Self-Efficacy, Challenges, Curiosity, Importance, Involvement, Recognition, Grades, Competition, and Social. In addition, gender differences were not found in the study. Kambara and Lin (2021) claimed confounding variables, such as racial/ethnic groups and age, may modulate gender differences in reading motivation. Kambara et al. (2021) identified two reading motivation factors (i.e., reading importance, reading efficacy and extrinsic goals for reading) in Japanese college students.

2.4 Gender differences in reading motivation

Numerous research studies (Eccles et al., 1993; Marinak & Gambrell, 2010; McGeown, 2015; McGeown et al., 2012; Quirk et al., 2020; Wigfield et al., 1997; Wigfield & Guthrie, 1997) on gender differences in reading motivation were primarily conducted in the United States and United Kingdom. Many previous research studies exploring gender differences in reading motivation showed that females had higher reading motivation than males. Yet, there are some studies (Baker & Scher, 2002; Kambara & Lin, 2021) showing no gender differences in reading motivation. Several studies conducted in the United States reported females were likely to value reading and hold higher competence beliefs than males (Eccles et al., 1993; Wigfield et al., 1997). Two studies conducted in the United Kingdom showed some gender differences in reading motivation. McGeown et al., (2012) did not find any gender differences in reading skills and extrinsic reading motivation, but females had higher intrinsic reading motivation than males. McGeown (2015) also found that female traits were found to be related with reading motivation and engagement. However, Kambara and Lin (2021) compared American and Japanese fourth grade students and found no gender differences in both groups.

To explain these contradictory results, several factors could be attributed. Logan and Johnson (2010) claimed that multi-faceted dimensions, such as differences in brain activation, cognitive abilities, learning styles, behavioral, and motivational factors could possibly explain gender differences. Moreover, Meece et al. (2006) claimed that individual ability, race/ethnicity, and social class could alter gender effect.

2.5 Self-construal between individualistic and collectivistic cultures

Self-construal refers to an individual's view of self independently from others or interdependently with others (Markus & Kitayama, 1991; Markus et al., 1997a; Markus et al., 1997b). Markus and Kitayama (1991a, 1991b) asserted that people in individualistic societies, such as Western countries (e.g., United States), tend to have higher independent self-construal, while people in collectivistic societies, such as non-Western countries (e.g., Japan), are likely to hold higher interdependence self-construal. Independent individuals perceive themselves as detached from others and are likely to illuminate their uniqueness. In contrast, interdependent individuals view themselves as connected with other people and adopt a social relationship within the self. Hofstede (1980) and Triandis (1996) claimed that people in

individualistic cultures are self-directed and independent from their in-group. They tend to prioritize their own goals over in-group goals. In collectivist cultures, people prioritize the goals of their in-groups over personal goals and are more concerned with relationships.

It is possible that both independence and interdependence coexist within different cultures. Some researchers claim that both independent and interdependent construals cannot be completely divided (Kim et al., 1994); rather they could possibly coincide at the individual level (Singelis, 1994). Thus, individuals may contain a combination of independent and interdependent attitudes (Green et al., 2005). Additionally, individuals hold both interdependent and independent self-construals to different degrees within a variety of cultural contexts that generally intensify one or the other (Cross et al., 2011; Singelis, 1994). Independence and interdependence should be grasped as domain-specific constructs separately invoked by social cues, signifying that an individual low in independence does not automatically indicate they are higher in interdependence (and vice versa) (Oyserman et al., 2002; Oyserman & Lee, 2008).

2.6 The role of gender in self-construal

The role of gender has been examined in numerous studies (Costa et al., 2001; Kashima et al., 1995, 2004; Schwartz & Rubel, 2005). For example, Kashima et al. (1995) examined self-construal of students across five different cultures, choosing representatives from individualist and collectivist cultures. The results remarkably displayed that gender differences in self-construal were invariant across cultures even though self-construal varied across cultures. Kashima et al. (2004) reexamined the gender differences in self-construal using Australian and Japanese participants and confirmed the null results. On the contrary, several studies (see Cross et al., 2000; Gabriel & Gardner, 1999; Gardner et al., 2002; Guimond et al., 2006; Kemmelmeier & Oyserman, 2001) found there was a gender difference in self-construal in that women tended to show higher relational interdependence, while men were likely to display higher independence in their self-construal. The previous studies showed mixed results, and our study reexamined the role of gender in self-construal between Hispanic American and Japanese college students.

3 Theoretical framework

We adopted a self-construal theory (Markus & Kitayama, 1991) that conceptualizes culture on self-view, relating to the role of others. People of Western (i.e., Western and Western European countries) have individualistic cultures and tend to have an independence construal, which views the self as separate from others (Markus & Kitayama, 1991). Conversely, people of non-Western countries (i.e., Japan and other Asian countries) have collectivistic cultures and have higher interdependence, which attributes the self in connection with others (Matsumoto, 1999). Previous research asserted self-construal as a unique cultural production: “individuals’ self-views,

emotions, and motivations take shape and form within a framework provided by cultural values, ideas, structures, and practices" (Cross & Madson, 1997, p.6). Some researchers (Kitayama et al., 1995; Kitayama & Markus, 1994; Markus & Kitayama, 1991; Markus et al., 1997a; Markus et al., 1997b; Triandis, 1996) illustrated a fundamental logic that culture impacts individual self-construals; these, in turn, affect psychological behaviors, such as motivation, cognition, and emotion (see Panel A in Fig. 1).

In the current literature, most studies on motivation, cognition, and emotion exclusively compare European Americans and Eastern Asians, which represent a sharp contrast between independent and interdependent cultures (Markus & Kitayama, 1991). Nonetheless, in such East and West comparison it is difficult to disentangle the combined influences of racial and ethnic backgrounds and self-construal itself on motivation. To address this issue, we should compare the two groups with similar self-construals (interdependent or independent) because such comparison can directly reveal the main effect of racial and ethnic background on motivation, especially focusing on reading motivation. To test this idea, we selected Hispanic Americans and Japanese college students as our participants because both groups are typically more interdependent than independent (Kitayama & Salvador, 2017; Markus & Kitayama, 1991).

4 The current study

To address the gaps in the literature on self-construal and reading motivation, the present study explored three different research questions. First, we investigated differences in self-construal of Hispanic American and Japanese college students across country and gender. Second, we studied differences in reading motivation of Hispanic American and Japanese college students across country and gender. Third, we examined the relation between self-construal and reading motivation of Hispanic American and Japanese college students.

For the first question, we expected that Japanese college students would show greater interdependence than Hispanic American college students, whereas Hispanic

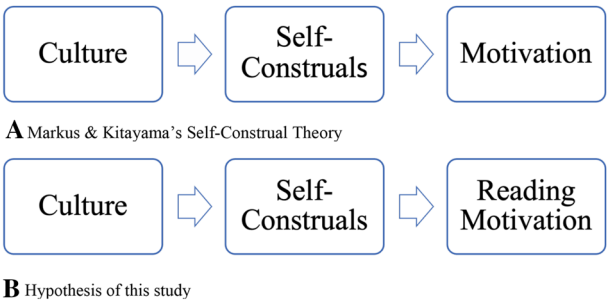

Fig. 1 Panel A refers to Markus & Kitayama's Self-Construal Theory and Panel B refers to our hypothesis

Americans would have greater independence than Japanese college students due to the influence of American culture. This prediction was consistent with Markus and Kitayama's (1991) framework and previous findings from a longitudinal acculturation study (Heine & Lehman, 1997) where the individuals' exposure to North American culture increased their independence. However, we assumed that Hispanic American students would also have persistence of interdependence due to their historical roots and ethnic backgrounds from Latin America (Triandis et al., 2016). Prior research (Cross et al., 2000; Gabriel & Gardner, 1999; Gardner et al., 2002; Guimond et al., 2006; Kemmelmeier & Oyserman, 2001) shaped our gender hypothesis that female college students would show higher interdependence, whereas male college students would display higher independence in their self-construal.

For the second question, we predicted that reading motivation would show different patterns across country and gender, particularly in reading efficacy. Reading efficacy refers to an individual's beliefs of one's own competence to achieve reading goals and desire to become a skilled reader (Schutte & Malouff, 2007). Kambara and Lin (2021) showed that European American students had higher reading efficacy than Japanese students. Such differences could be due to self-construals (e.g., independence and interdependence) across the two countries. Based on their findings, we hypothesized that Hispanic American students would show higher reading efficacy than Japanese students due to the daily life exposure of American culture. Moreover, according to previous studies (Eccles et al., 1993; Marinak & Gambrell, 2010; McGeown, 2015; McGeown et al., 2012; Quirk et al., 2020; Wigfield et al., 1997; Wigfield & Guthrie, 1997), we predicted there would be a gender difference in reading motivation across the countries.

For the third question, we assumed there is a relation between self-construal and reading motivation (see Panel B in Fig. 1) based on Markus and Kitayama's (1991) Self-Construal Theory which demonstrated that self-construal influences motivation. Particularly, Markus and Kitayama (1991) hypothesized there were different consequences of self-construals on one of the fundamental components of motivation, such as efficacy. There is no empirical evidence supporting their hypothesis. Therefore, our study aims to investigate whether self-construal can predict reading motivation, particularly reading efficacy. Several studies (e.g., Kiuchi, 2006; Singelis, 1994) indicated that independent and interdependent self-construals were associated with self-efficacy in both North American and Eastern Asian college students. Kiuchi (2006) found self-efficacy was negatively related to interdependence, but positively related to independence across American and Japanese college students. Based on these findings, we predicted that interdependence and independence are differentially correlated with reading efficacy, which is a culturally sensitive factor in reading motivation. Specifically, we expected that higher independence would be associated with greater reading efficacy, whereas higher interdependence would be related to lower reading efficacy.

5 Method

5.1 Participants

The participants consisted of 350 college students, including 236 Hispanic American (53 males and 183 females; mean age = 22.5, *SD* = 5.1) and 114 Japanese (42 males and 72 females; mean age = 19.6, *SD* = 0.7) college students. The study took place in two different universities, one in the United States and the other in Japan. The university in the United States is a public university which is the second-largest Hispanic-Serving Institution located at the U.S.-Mexico border. The university is comprised of approximately 90% Hispanic American students. The university in Japan is a public university located in the Northeast of Japan. In this study, we investigated participants' reading motivation in their primary languages (e.g., English for Hispanic American students; Japanese for Japanese students). Although Hispanic American students speak both Spanish and English, English was considered to be the Hispanic American students' dominant language in an academic setting. In addition, all Hispanic American participants currently attend the university in the United States where English is predominately used. Therefore, we decided to assess Hispanic American students in English.

5.2 Instruments

The present study utilized the Adult Motivation for Reading Scale (AMRS) by Schutte and Malouff (2007). The AMRS has 21 items to measure 4 dimensions, including Reading as Part of Self (8 items), Reading Efficacy (6 items), Reading for Recognition (3 items), and Reading to Do Well in Other Realms (4 items). The first dimension, *reading as part of self*, focuses on the importance of being a reader. The second dimension, *reading efficacy*, indicates individuals' wishes to become skilled readers and willingness to face challenging materials. The third dimension, *reading for recognition*, refers to individual's desires to gain other people's recognition. The fourth dimension, *reading to do well in other realms*, emphasizes using reading as a means to achieve other goals (Schutte & Malouff, 2007). For Japanese students, the Cronbach's alpha for the AMRS was 0.85. In addition, the Cronbach's α for reading motivation subscales ranged from 0.48 to 0.83 (reading as part of self: α = 0.83; reading efficacy: α = 0.68; reading for recognition: α = 0.68; reading to do well in other realms: α = 0.48). For Hispanic American students, the Cronbach's alpha for the AMRS was 0.86. Moreover, the Cronbach's α for reading motivation subscales ranged from 0.68 to 0.84 (reading as part of self: α = 0.84; reading efficacy: α = 0.64; reading for recognition: α = 0.75; reading to do well in other realms: α = 0.68).

Another instrument used in this study was the Self-Construal Scale (SCS) developed by Singelis (1994). The SCS mainly measures individual variations in independence-interdependence orientations with a total of 30 items through a 7-point Likert-scale. For Japanese students, the Cronbach's alpha for the SCS was 0.79. Additionally, the Cronbach's alpha for the Independent and Interdependent subscales

were 0.80 and 0.68, respectively. The subscales have either minimally acceptable or very high internal consistency. For Hispanic American students, the Cronbach's alpha for the SCS was 0.80. Furthermore, the Cronbach's alpha for the.

Independent and Interdependent subscales were 0.77 and 0.74, respectively. Both subscales have respectable internal consistency.

For Japanese participants, the principal investigator, who is bilingual in both Japanese and English translated both the original AMRS and SCS from English to Japanese. Moreover, the translated AMRS and SCS were back-translated to assure accuracy and reliability. Two researchers who are bilingual in English and Japanese assessed the translated instruments and checked if the translations were culturally appropriate. The inconsistencies between the original English version and the back-translated version were carefully compared and deliberated several times until all the evaluators approved the contents. After numerous checks and discussions, 98% agreement was achieved.

5.3 Procedures

After receiving the university's institutional review board (IRB) approval, the principal investigator emailed faculty at the universities in both Japan and the United States to seek cooperation to share the recruitment email and the online survey link. The participants voluntarily completed the online survey after they agreed to an online informed consent form. The participants were told they were going to answer questions related to this study. The survey took approximately 15–20 min to complete.

5.4 Data analysis

Our results are presented in the following three sections, which cover descriptive statistics, multivariate analysis of variance (MANOVA) analyses (Data Analysis I and II), and hierarchical regression analysis (Data Analysis III). Data Analysis I was used to address the first research question: *What are differences in self-construal between Hispanic American and Japanese college students across country and gender?* Data Analysis II was used to address the second research question: *What are differences in reading motivation between Hispanic American and Japanese college students across country and gender?* Data Analysis III was used to address the third research question: *Does self-construal predict reading motivation regardless of country and gender?*

6 Results

6.1 Descriptive statistics

Descriptive analyses were carried out for the whole sample ($N = 350$). Means and standard deviations for each of the two self-construal measures (independence and

Table 1 Means and standard deviations of independence and interdependence scores, separately for each country (US vs. Japan) and gender (male vs. female)

Country	*n*	Independence *M (SD)*	Interdependence *M (SD)*
US			
Male	53	78.37 (10.54)	74.10 (11.50)
Female	183	77.16 (10.84)	74.28 (10.00)
Japan			
Male	42	72.10 (10.58)	70.25 (11.38)
Female	72	68.09 (10.98)	72.27 (7.80)

Table 2 Means and standard deviations of reading as part of self, reading efficacy, reading for recognition, reading to do well in other realms scores, and reading motivation, separately for each country (US vs. Japan) and gender (male vs. female)

Country	*n*	Reading as part of self	Reading efficacy	Reading for recognition	Reading to do well in other realms	Reading motivation
		M (SD)	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
US						
Male	53	2.97 (0.73)	3.50 (0.52)	2.82 (0.98)	3.33 (0.68)	3.16 (0.79)
Female	183	3.38 (0.71)	3.39 (0.54)	2.79 (0.93)	3.53 (0.74)	3.27 (0.79)
Japan						
Male	42	3.11 (0.75)	2.90 (0.62)	3.02 (0.70)	3.19 (0.60)	3.06 (0.68)
Female	72	3.02 (0.65)	2.56 (0.57)	2.85 (0.76)	3.14 (0.51)	2.89 (0.66)

interdependence) and four dimensions of reading motivation (*reading as part of self, reading efficacy, reading for recognition, reading to do well in other realms*) are presented in Tables 1 and 2.

6.2 Data analysis I

6.2.1 Self-construal

A two-way multivariate analysis of variance (MANOVA) was conducted with two self-construal measures (independence and interdependence) as dependent variables, and with country and gender as independent variables. The homogeneity of covariances in dependent variables was tested through Box's Test of Equality of Covariance Matrices. The Box's M value of 19.88 was associated with a p value of 0.021 ($p > .001$), which indicated there was no significant difference between the covariances of dependent variables. Therefore, the results of the analysis can be trusted. Using Pillai's trace, there was a significant main effect of country, $V = 0.086$, $F(2, 345) = 16.28$, $p < .001$, $\eta_p^2 = 0.086$. Moreover, the main effect of gender reached

significance, $V = 0.019$, $F(2, 345) = 3.32$, $p = 0.037$, $\eta_p^2 = 0.019$. Nonetheless, we did not find a significant interaction between country and gender, $V = 0.007$, $F(2, 345) = 1.25$, $p = .288$, $\eta_p^2 = 0.007$.

Separate univariate ANOVAs showed there were significant country effects for both independence, $F(1, 346) = 32.57$, $p < .001$, $\eta_p^2 = 0.086$, and interdependence, $F(1, 346) = 5.55$, $p = .019$, $\eta_p^2 = 0.016$. Hispanic American students exhibited higher scores for both independent (US: $M = 77.43$, $SD = 10.77$; Japan: $M = 69.57$, $SD = 10.96$) and interdependent (US: $M = 74.25$, $SD = 10.33$; Japan: $M = 71.52$, $SD = 9.29$) than Japanese students. Separate univariate ANOVAs revealed the gender effect for independent was marginal, $F(1, 346) = 3.76$, $p = .053$, $\eta_p^2 = 0.011$. However, there was no significant gender effect for interdependent, $F(1, 346) = 0.78$, $p = .377$, $\eta_p^2 = 0.002$. For independence, male students exhibited higher scores than female students (male: $M = 75.60$, $SD = 10.96$; female: $M = 74.60$, $SD = 11.61$). For interdependence, male ($M = 72.40$, $SD = 11.55$) and female ($M = 73.72$, $SD = 9.46$) students had similar scores.

6.3 Data analysis II

6.3.1 Reading motivation

A two-way multivariate analysis of variance (MANOVA) was implemented with four dimensions of reading motivation scores (*reading as part of self, reading efficacy, reading for recognition, reading to do well in other realms*) as dependent variables, and with country and gender as independent variables. The homogeneity of covariances in dependent variables was tested through Box's Test of Equality of Covariance Matrices. The Box's M value of 44.29 was associated with a p value of .059 ($p > .001$), which indicated there was no significant difference between the covariances of dependent variables. As a result, the results of the analysis can be trusted.

Using Pillai's trace, there was a significant main effect of country, $V = 0.286$, $F(4, 343) = 34.31$, $p < .001$, $\eta_p^2 = 0.286$. In addition, we observed a significant main effect of gender, $V = 0.104$, $F(4, 343) = 9.90$, $p < .001$, $\eta_p^2 = 0.104$. However, there was no significant two-way interaction between country and gender, $V = 0.024$, $F(4, 343) = 2.10$, $p = .080$, $\eta_p^2 = 0.024$. Separate univariate ANOVAs revealed there were significant country effects for *reading efficacy*, $F(1, 346) = 106.63$, $p < .001$, $\eta_p^2 = 0.236$, and *reading to do well in other realms*, $F(1, 346) = 10.57$, $p = .001$, $\eta_p^2 = 0.030$, rather than *reading as part of self*, $F(1, 346) = 1.49$, $p = .223$, $\eta_p^2 = 0.004$, and *reading for recognition*, $F(1, 346) = 1.46$, $p = .228$, $\eta_p^2 = 0.004$. Hispanic American students exhibited higher scores for *reading efficacy* (US: $M = 3.42$, $SD = 0.54$; Japan: $M = 2.68$, $SD = 0.61$) and *reading to do well in other realms* (US: $M = 3.49$, $SD = 0.73$; Japan: $M = 3.16$, $SD = 0.54$) than Japanese students. However, Hispanic American and Japanese students showed similar scores on *reading as part of self* (US: $M = 3.28$, $SD = 0.73$; Japan: $M = 3.05$, $SD = 0.69$) and *reading for recognition* (US: $M = 2.80$, $SD = 0.94$; Japan: $M = 2.91$, $SD = 0.74$).

Separate univariate ANOVAs showed there was a significant gender effect for *reading efficacy,* $F(1, 346) = 10.80$, $p = .001$, $\eta_p^2 = 0.030$, rather than *reading as part of self*, $F(1, 346) = 3.09$, $p = .080$, $\eta_p^2 = 0.009$, *reading for recognition,* $F(1, 346) = 0.88$, $p = .350$, $\eta_p^2 = 0.003$, or *reading to do well in other realms,* $F(1, 346) = 0.75$, $p = .389$, $\eta_p^2 = 0.002$. Male students ($M = 3.24$, $SD = 0.64$) exhibited higher scores than female students ($M = 3.16$, $SD = 0.67$) for *reading efficacy*. Nonetheless, male students and female students showed similar scores on *reading as part of self* (male: $M = 3.03$, $SD = 0.67$; female: $M = 3.28$, $SD = 0.71$), *reading for recognition* (male: $M = 2.91$, $SD = 0.87$; female: $M = 2.81$, $SD = 0.88$) and *reading to do well in other realms* (male: $M = 3.27$, $SD = 0.65$; female: $M = 3.24$, $SD = 0.70$).

6.4 Data analysis III

6.4.1 The role of country in explaining the relations between self-construal and reading motivation

We performed a three-step hierarchical regression analysis to examine whether country could modulate the relation between effect of self-construal (independence and interdependence) and reading motivation (*reading as part of self, reading efficacy, reading for recognition, reading to do well in other realms*). Country was treated as the dummy variable (USA = 1 and Japan = 2). At Step 1 of regression, three variables (independence, interdependence, and country) were entered into the model. At Step 2 of regression, we added two-way interactions among independence, interdependence, and country (independence × country, interdependence × country, independence × interdependence) into the model to investigate whether the interactions' inclusion would lead to an increase in total explained variance. At Step 3 of regression, a three-way interaction among independence, interdependence, and country was added into the model.

6.4.1.1 Reading as part of self Regression results showed that the main effects of predictors, all three variables together (interdependence, interdependence, country), accounted for 8.3% of the variance for *reading as part of self*, $F(3, 346) = 10.387$, $p < .001$. Specifically, as illustrated in Table 3, independence significantly predicted *reading as part of self* ($\beta = 0.241$, $p < .001$). Nonetheless, neither interdependence ($\beta = 0.042$, $p = .452$), nor country ($\beta = -0.066$, $p = .225$) significantly predicted *reading as part of self*. The results demonstrated that independence was the most important factor to best explain variance in *reading as part of self*, while interdependence and country were not. The results showed that higher scores for independence were associated with higher scores of *reading as part of self*.

There were no significant two-way interactions (independence × country, interdependence × country, independence × interdependence), $F(3, 343) = 1.241$, $p = 0.295$, after controlling for the main effects of independence, interdependence, and country. In addition, there was no three-way (independence × interdependence × country) interaction, $F(1, 342) = 0.007$, $p = .934$, after controlling for the main effects of independence, interdependence, country, and their two-way interactions. The results

Table 3 Summary of hierarchical regression analysis for country moderation of self-construal (independence and interdependence) and reading as part of self

	Reading as part of self	
	ΔR^2	β
Step 1	.083***	
Independence		.241***
Interdependence		.042
Country		− .066
Step 2	.010	
Independence		.556**
Interdependence		− .064
Country		− .087
Independence × Interdependence		− .022
Independence × Country		− .039
Interdependence × Country		.100
Step 3	.000	
Independence		.557**
Interdependence		− .066
Country		− .086
Independence × Interdependence		− .006
Independence × Country		− .330
Interdependence × Country		.100
Independence × Interdependence × Country		− .016
Total R^2	.083***	
N	350	

*$p < .05$ ** $p < .01$ *** $p < .001$; country coded 1 = U.S., 2 = Japan

showed the two-way and three-way interaction terms did not account for additional variance and country did not moderate the relations between self-construal and *reading as part of self*.

6.4.1.2 Reading efficacy Regression results showed that the main effects of independence, interdependence, and country jointly explained 33.1% of the variance for *reading efficacy*, $F(3, 346) = 56.973$, $p < .001$. Specifically, as shown in Table 4, all three variables significantly predicted *reading efficacy* (independence: $\beta = 0.257$, $p < .001$; interdependence: $\beta = -0.175$, $p < .001$; country: $\beta = -0.460$, $p < .001$). The results indicated independence, interdependence, and country were critical factors that best explained variance in *reading efficacy*. Most importantly, both independence and interdependence played a significant role in explaining variance in participants' *reading efficacy*, although in opposite directions. Higher scores for independence were associated with higher scores for *reading efficacy*. However, higher scores for interdependence were related to lower scores for *reading efficacy*. Furthermore, Japanese students exhibited lower scores for *reading efficacy* than Hispanic American students.

Table 4 Summary of hierarchical regression analysis for country moderation of self-construal (independence and interdependence) and reading efficacy

	Reading efficacy	
	ΔR^2	β
Step 1	.331***	
Independence		.257***
Interdependence		– .175***
Country		– .460***
Step 2	.006	
Independence		.340*
Interdependence		– .168
Country		– .469***
Independence × Interdependence		– .078
Independence × Country		– .086
Interdependence × Country		.015
Step 3	.000	
Independence		.340*
Interdependence		– .166
Country		– .470***
Independence × Interdependence		– .092
Independence × Country		– .085
Interdependence × Country		.014
Independence × Interdependence × Country		.014
Total R^2	.331***	
N	350	

*$p < .05$ ** $p < .01$ *** $p < .001$; country coded 1 = U.S., 2 = Japan

There were no significant two-way interactions (independence × country, interdependence × country, independence × interdependence), $F(3, 343) = 1.008$, $p = .389$, after controlling for the main effects of independence, interdependence, and country. Furthermore, there was no three-way (independence × interdependence × country) interaction, $F(1, 342) = 0.007$, $p = .933$, after controlling for the main effects of independence, interdependence, country, and their two-way interactions. The results showed that entry of the two-way and three-way interaction terms into the model did not explain additional variance, indicating country did not moderate the relations between self-construal and *reading efficacy*.

6.4.1.3 Reading for recognition Regression results showed the main effects of independence, interdependence, and country jointly explained 16.9% of the variance for *reading for recognition*, $F(3, 346) = 23.397$, $p < .001$. Specifically, as shown in Table 5, all three variables significantly predicted *reading for recognition* (independence: $\beta = 0.200$, $p < .001$; interdependence: $\beta = 0.301$, $p < .001$; country: $\beta = 0.165$, $p < .001$). In other words, independence, interdependence, and country were statistically significant indicators of *reading for recognition*. Higher scores for independence were associated with higher scores for *reading for recognition*.

Table 5 Summary of hierarchical regression analysis for country moderation of self-construal (independence and interdependence) and reading for recognition

	Reading for recognition	
	ΔR^2	β
Step 1	.169***	
Independence		.200***
Interdependence		.301***
Country		.165***
Step 2	.018	
Independence		.286
Interdependence		.117
Country		.171**
Independence × Interdependence		.142**
Independence × Country		− .087
Interdependence × Country		.138
Step 3	.004	
Independence		.295
Interdependence		.096
Country		.187**
Independence × Interdependence		.376*
Independence × Country		− .100
Interdependence × Country		.147
Independence × Interdependence × Country		− .238
Total R^2	.169***	
N	350	

*$p < .05$ ** $p < .01$ *** $p < .001$; country coded 1 = U.S., 2 = Japan

Higher scores for interdependence were also related to higher scores for *reading for recognition*. In addition, Japanese students had higher scores for *reading for recognition* than Hispanic American students.

There were no significant two-way interactions (independence × country, interdependence × country, independence × interdependence), $F(3, 343) = 2.463$, $p = .062$, after controlling for the main effects of independence, interdependence, and country. Furthermore, there was no three-way (independence × interdependence × country) interaction, $F(1, 342) = 1.789$, $p = .182$, after controlling for the main effects of independence, interdependence, country, and their two-way interactions. The results showed that the two-way and three-way interaction terms of predictors were not significant predictors of *reading for recognition* and country did not moderate the relations between self-construal and *reading for recognition.*

6.4.1.4 Reading to do well in other realms Regression results showed the main effects of independence, interdependence, and country jointly explained 21.6% of the variance for *reading to do well in other realms*, $F(3, 346) = 31.786$, $p < .001$. Specifically, as shown in Table 6, independence and interdependence significantly predicted *read-*

ing to do well in other realms (independence: β = 0.353, $p < .001$; independence and interdependence: β = 0.141, $p = .006$). Nonetheless, country (β = − 0.095, $p = .060$) did not predict *reading to do well in other realms*. The results showed independence and interdependence were the important predictors that best explained variance in *reading to do well in other realms*, whereas country was not. Increases in scores for both independence and interdependence led to increases in scores for *reading to do well in other realms*.

There were no significant two-way interactions (independence × country, interdependence × country, independence × interdependence), $F(3, 343) = 1.182$, $p = .316$, after controlling for the main effects of independence, interdependence, and country. Furthermore, there was no three-way (independence × interdependence × country) interaction, $F(1, 342) = 0.020$, $p = .888$, after controlling for the main effects of independence, interdependence, country, and their two-way interactions. The results showed that the two-way and three-way interaction terms did not explain more variance, and country did not moderate the relations between self-construal and *reading to do well in other realms*.

Table 6 Summary of hierarchical regression analysis for country moderation of self-construal (independence and interdependence) and reading to do well in other realms

	Reading to do well in other realms	
	ΔR^2	β
Step 1	.216***	
Independence		.353***
Interdependence		.141**
Country		− .095
Step 2	.008	
Independence		.582***
Interdependence		− .104
Country		− .100
Independence × Interdependence		.014
Independence × Country		− .231
Interdependence × Country		.239
Step 3	.000	
Independence		.581***
Interdependence		− .102
Country		− .102
Independence × Interdependence		− .010
Independence × Country		− .229
Interdependence × Country		.238
Independence × Interdependence × Country		.025
Total R^2	.216***	
N	350	

*$p < .05$ ** $p < .01$ *** $p < .001$; country coded 1 = U.S., 2 = Japan

6.4.2 The role of gender in explaining the relations between self-construal and reading motivation

We performed another hierarchical regression analysis to examine whether gender could modulate the relation between effects of self-construal (independence and interdependence) and reading motivation (*reading as part of self, reading efficacy, reading for recognition, reading to do well in other realms*). All three predictors (independence, interdependence, gender) were entered into the first step of regression, two-way interactions among independence, interdependence, and gender were added into the second step of regression, and a three-way interaction among independence, interdependence, and gender was added into the third step of the regression.

6.4.2.1 Reading as part of self Results showed that the main effects of all three predictors together (interdependence, interdependence, gender) accounted for 10.3% of the variance for *reading as part of self*, $F(3, 346) = 13.24$, $p < .001$. Specifically, as shown in Table 7, independence and gender significantly predicted *reading as part of self* (independence: $\beta = 0.273$, $p < .001$; gender: $\beta = 0.156$, $p < .01$). Nonetheless, interdependence ($\beta = 0.029$, $p = .599$) did not predict *reading as part of self*. The results showed independence and gender played a significant role in explaining variance in participants' *reading as part of self*. Higher scores for independence were associated with higher scores for *reading as part of self*. Moreover, female students had higher scores for *reading as part of self* than male students.

There were no significant two-way interactions (independence × gender, interdependence × gender, independence × interdependence), $F(3, 343) = 0.083$, $p = .969$, after controlling for the main effects of independence, interdependence, and gender. In addition, there was no three-way (independence × interdependence × gender) interaction, $F(1, 342) = 0.156$, $p = .693$, after controlling for the main effects of independence, interdependence, gender and their two-way interactions. The regressions showed that gender did not moderate the relations between self-construal and *reading as part of self*.

6.4.2.2 Reading efficacy Regression results showed that the main effects of independence, interdependence, and gender jointly explained 14.2% of the variance for *reading efficacy*, $F(3, 346) = 19.108$, $p < .001$. Specifically, as illustrated in Table 8, both independence and interdependence significantly predicted *reading efficacy* (independence: $\beta = 0.403$, $p < .001$; interdependence: $\beta = -0.169$, $p < .01$). Particularly, increases on the independence scale were associated with higher scores on *reading efficacy*, whereas increases on the interdependence scale led to lower *reading efficacy* scores. However, gender was not associated with *reading efficacy* ($\beta = -0.028$, $p = .572$).

There were no significant two-way interactions (independence × gender, interdependence × gender, independence × interdependence), $F(3, 343) = 0.498$, $p = .684$, after controlling for the main effects of independence, interdependence, and gender. Furthermore, there was no three-way (independence × interdependence × gender)

Table 7 Summary of hierarchical regression analysis for gender moderation of self-construal (independence and interdependence) and reading as part of self

	Reading as part of self	
	ΔR^2	β
Step 1	.103***	
Independence		.273***
Interdependence		.029
Gender		.156 **
Step 2	.001	
Independence		.333
Interdependence		− .035
Gender		.158**
Independence × Interdependence		− .015
Independence × Gender		− .063
Interdependence × Gender		.072
Step 3	.000	
Independence		.326
Interdependence		− .006
Gender		.151**
Independence × Interdependence		− .096
Independence × Gender		− .058
Interdependence × Gender		.043
Independence × Interdependence × Gender		.084
Total R^2	.103***	
N	350	

*$p < .05$ ** $p < .01$ *** $p < .001$; gender coded 1 = male., 2 = female

interaction, $F(1, 342) = 0.634$, $p = .426$, after controlling for the main effects of independence, interdependence, gender, and their two-way interactions. The results showed the two-way and three-way interaction terms did not explain more variance, indicating gender did not moderate the relations between self-construal and *reading efficacy*.

6.4.2.3 Reading for recognition Regression results showed that the main effects of independence, interdependence, and gender jointly explained 14.8% of the variance for *reading for recognition*, $F(3, 346) = 20.091$, $p < .001$. Specifically, as illustrated in Table 9, independence, rather than gender, significantly predicted *reading for recognition* (independence: $\beta = 0.143$, $p < .01$; interdependence: $\beta = 0.305$, $p < 0.001$; gender: $\beta = -0.065$, $p = .195$). Independence and interdependence were statistically significant indicators of *reading for recognition*, while gender was not. Increases in the independence and interdependence scores were associated with increases in *reading for recognition* scores.

There were no significant two-way interactions (independence × gender, interdependence × gender, independence × interdependence), $F(3, 343) = 1.939$, $p = .123$,

Table 8 Summary of hierarchical regression analysis for gender moderation of self-construal (independence and interdependence) and reading efficacy

	Reading efficacy	
	ΔR^2	β
Step 1	.142***	
Independence		.403***
Interdependence		− .169**
Gender		− .028
Step 2	.004	
Independence		.448*
Interdependence		− .074
Gender		− .029
Independence × Interdependence		− .057
Independence × Gender		− .043
Interdependence × Gender		− .080
Step 3	.002	
Independence		.461*
Interdependence		− .132
Gender		− .016
Independence × Interdependence		.102
Independence × Gender		− .052
Interdependence × Gender		− .023
Independence × Interdependence × Gender		− .165
Total R^2	.142***	
N	350	

*$p < .05$ ** $p < .01$ *** $p < .001$; gender coded 1 = male., 2 = female

after controlling for the main effects of independence, interdependence, and gender. In addition, there was no three-way (independence × interdependence × gender) interaction, $F(1, 342) = 0.487$, $p = .486$, after controlling for the main effects of independence, interdependence, gender, and their two-way interactions. The results showed the two-way and three-way interaction terms did not explain more variance, indicating gender did not moderate the relations between self-construal and *reading for recognition*.

6.4.2.4 Reading to do well in other realms Regression results showed that the main effects of independence, interdependence, and gender jointly explained 21.9% of the variance for *reading to do well in other realms*, $F(3, 346) = 32.305$, $p < .001$. Specifically, as illustrated in Table 10, all three variables significantly predicted *reading to do well in other realms* (independence: $\beta = 0.391$, $p < .001$; interdependence: $\beta = 0.133$, $p < .05$; gender: $\beta = 0.105$, $p < .05$). That is, independence, interdependence, and gender were statistically significant indicators of *reading to do well in other realms*. Higher scores for independence and interdependence were associated with higher scores for *reading to do well in other realms*. In

Table 9 Summary of hierarchical regression analysis for gender moderation of self-construal (independence and interdependence) and reading for recognition

	Reading for recognition	
	ΔR^2	β
Step 1	.148***	
Independence		.143**
Interdependence		.305***
Gender		− .065
Step 2	.014	
Independence		.108
Interdependence		.339
Gender		− .065
Independence × Interdependence		.124*
Independence × Gender		.034
Interdependence × Gender		− .079
Step 3	.001	
Independence		.119
Interdependence		.289
Gender		− .053**
Independence × Interdependence		.263*
Independence × Gender		.026
Interdependence × Gender		− .030
Independence × Interdependence × Gender		− .143
Total R^2	.148***	
N	350	

*$p < .05$ ** $p < .01$ *** $p < .001$; gender coded 1 = male., 2 = female

addition, female students had higher scores for *reading to do well in other realms* than male students.

There were no significant two-way interactions (independence × gender, interdependence × gender, independence × interdependence), $F(3, 343) = 1.324$, $p = .266$, after controlling for the main effects of independence, interdependence, and gender. Furthermore, there was no three-way interaction (independence × interdependence × gender) interaction, $F(1, 342) = 0.000$, $p = .996$, after controlling for the main effects of independence, interdependence, gender, and their two-way interactions. The results showed the two-way and three-way interaction terms did not explain additional variance, indicating gender did not moderate the relations between self-construal and *reading to do well in other realms*.

7 Discussion

The present study investigated three questions. First, we explored differences in self-construal between Hispanic American and Japanese college students across country and gender. Second, we investigated differences in reading motivation between

Table 10 Summary of hierarchical regression analysis for gender moderation of self-construal (independence and interdependence) and reading to do well in other realms

	Reading to do well in other realms	
	ΔR^2	β
Step 1	.219***	
Independence		.391***
Interdependence		.133*
Gender		.105*
Step 2	.009	
Independence		− .017
Interdependence		.261
Gender		.099*
Independence × Interdependence		− .003
Independence × Gender		.423*
Interdependence × Gender		− .132
Step 3	.000	
Independence		− .017
Interdependence		.261
Gender		.099
Independence × Interdependence		− .002
Independence × Gender		.423*
Interdependence × Gender		− .131
Independence × Interdependence × Gender		− .001
Total R^2	.219***	
N	350	

*$p < .05$ ** $p < .01$ *** $p < .001$; gender coded 1 = male., 2 = female

Hispanic American and Japanese college students across country and gender. Third, we studied the relation between self-construal and reading motivation of Hispanic American and Japanese American college students.

7.1 Country and gender differences in self-construal

Our data suggested Hispanic American students exhibited higher scores for both independence and interdependence than Japanese students. Specifically, Hispanic American students showed higher independence scores than interdependence scores. Both scores were similar for Japanese students. The result of Hispanic American students showing higher independence than interdependence is partially supported by our hypothesis and by Markus and Kitayama's (1991) findings that American students tend to hold high independence. It is possible that Hispanic American students showed a strong tendency toward independence while still holding interdependence due to their social, linguistic, and cultural environments. Strong independence of

Hispanic American students could be due to their exposure to American culture (Heine & Lehman, 1997). Persistence of interdependence could be derived from cultural characteristics in collectivist cultures due to their Hispanic American backgrounds and heritage (Triandis et al., 2016). Our results suggested the coexistence of rising individualism and persisting collectivism among our Hispanic American college students.

In contrast, our results contradicted the hypothesis that Japanese college students are strongly motivated toward interdependence. We found that Japanese college students hold equivalent levels of both independence and interdependence. Although Japan is historically a collectivistic culture, our results supported the claim that there is a culture shift toward increasing independence in current Japanese society (Hamamura, 2012; Ogihara, 2017). It is possible to explain the shift due to changes in socioeconomic environments, such as economic development, urbanization, and social systems, in Japan (Ogihara, 2017). For example, the term "*ohitorisama*" was popular to describe the increasing trend of independence in the current Japanese society. *Ohitorisama* refers to an individual who is independent and can enjoy alone time as well as time with others (Iwashita, 2001). There is a growing number of young Japanese generations who prefer to be an *ohitorisama* and single (Udebuchi et al., 2010). While there is an accumulative trend toward independence, this does not inevitably mean that Japanese society has abandoned the traditional collectivistic culture. Japanese society still preserves interdependence despite a rise of independence (Hamamura, 2012). The coexistence of both independence and traditional interdependence (Ogihara, 2017) was reflected in our Japanese college students' data.

Overall, our data confirmed the claim that individuals can hold a combination of independence and interdependence (Cross et al., 2011; Green et al., 2005; Singelis, 1994). Independence and interdependence are not mutually exclusive and an individual low in independence does not automatically indicate they would be high in collectivism and interdependence (Oyserman et al., 2002). Instead, interdependence and independence can be viewed as a cultural mindset at an individual level (Oyserman & Lee, 2008).

The present study showed that male students exhibited higher scores than female students for independence. However, male and female students had similar scores for interdependence. The results indicated that gender plays a different role in self-construal and partially supports our gender hypothesis that male college students showed higher independence than female college students. This finding was consistent with previous findings (Cross et al., 2000; Gabriel & Gardner, 1999; Gardner et al., 2002; Guimond et al., 2006; Kemmelmeier & Oyserman, 2001; Kite et al., 2008; Wood & Eagly, 2010) that males are considered more self-oriented. However, our data did not show gender differences in interdependence as reported in these studies. Although previous studies assumed that gender plays a different role in interdependence, our data suggested that male and female college students held equivalent levels of interdependence. Based on our data, we should not rule out the possibility that males also hold high interdependence compared to females. It is likely that males' and females' social belonging and connectedness differ based on the size of social groups. Some studies (Baumeister & Sommer, 1997; Gabriel & Gardner, 1999) suggested that males exhibited stronger connectedness with large

societal groups, such as country and community, while women showed more connection with small societal groups, including family members and friends. Thus, there is a coexistence of independence and persistence of interdependence among male and female college students in both the United States and Japan.

7.2 Country and gender differences in reading motivation

Our data indicated that scores for two dimensions in reading motivation, *reading efficacy* and *reading to do well in other realms,* were higher for Hispanic American college students than Japanese college students. This finding is in line with Kambara and Lin's (2021) study that American students had higher self-efficacy than Japanese students. Self-construal, such as independence and interdependence, may inform different levels of self-efficacy beliefs (Kiuchi, 2006; Klassen, 2004; Markus & Kitayama, 1991). We assumed that higher self-efficacy scores for Hispanic American students could be associated with their higher levels of independence from influence from American culture. By contrast, lower self-efficacy scores in Japanese students might be affected by Japanese traditional interdependent culture. This assumption was particularly consistent with Kiuchi's (2006) findings that self-efficacy was negatively related to interdependence, but positively related to independence across American and Japanese college students, and similar to the results from our hierarchical regression analyses.

We also found that Hispanic American students had higher scores on *reading to do well in other realms* than Japanese students. This factor refers to use of reading as a tool to achieve individuals' goals (Schutte & Malouff, 2007). This finding can be explained by the different role of goals in different cultures. Individualistic cultures promote personal goals, whereas collectivistic cultures promote others' goals (Markus & Kitayama, 1991). It is plausible that the influence of individualistic cultures highlighted by Hispanic American college students might lead to higher scores on *reading to do well in other realms* when compared with Japanese college students. More future studies will be needed to explain this novel finding.

Although we did not find any quantitative significance for *reading as part of the self* and *reading for recognition* between Hispanic American and Japanese students, it is still possible that both cultures have qualitative differences on the two factors. In fact, these two factors are culturally embedded factors that may be influenced by independent and interdependent self-construals. *Reading as part of the self* is defined as the importance of being a reader (Schutte & Malouff, 2007). It is possible that both Hispanic American and Japanese college students view reading as a significant task and part of themselves. Previous studies (Eccles et al., 2005; Tonks et al., 2018) suggested the importance of reading tasks was associated with individuals' self-identity in individualistic cultures. This assumption was confirmed by the positive correlation between independence and reading as part of the self in our study. Another factor, *reading for recognition*, indicates desires to gain recognition and respect from other people (Schutte & Malouff, 2007). The comparable level of this factor among the two cultures and positive correlation between self-construal and *reading for recognition* could be due to the influence of increased independence

and persistence of interdependence in both Hispanic American and Japanese college students.

This present study found a gender gap in reading motivation, but only for *reading efficacy*. Male students had higher *reading efficacy* than females, which is not consistent with previous studies. The majority of previous studies (Bouffard et al., 2003; Klassen, 2010; Met al.,lidou & Vlachou, 2007; Wentzel, 1996; Wigfield et al., 1997) exclusively examined elementary students' reading efficacy and found higher scores for efficacy in girls than boys. It is possible that the gender effect on *reading efficacy* might be due to the gender differences of independence, because we found there is a positive correlation between *reading efficacy* and independence (i.e., higher independence may lead to higher scores for *reading efficacy*). Another reason for the difference between the present study and previous studies might be the age differences of participants. Although our findings show that male college students had higher *reading efficacy* than females across the two cultures, the reason for the reversed pattern of gender effect in *reading efficacy* remains unclear. This novel finding in college students' *reading efficacy* needs to be reexamined in future studies.

7.3 Self-construal predicts reading motivation

Taken together, our data suggested that each of the reading motivation factors is correlated with self-construal. Different self-construals differentially predicted specific dimensions in reading motivation. In fact, reading motivation contains multiple dimensions. Therefore, we should not view reading motivation as a unified construct. For example, Hispanic American and Japanese college students' scores on *reading for recognition* and *reading to do well in other realms* were positively associated with both independence and interdependence. We found that only independence could significantly predict *reading as part of the self*.

Specifically, their *reading efficacy* scores were differentially correlated with independence and interdependence; more independence was correlated with higher *reading efficacy*. In contrast, more interdependence was correlated with lower *reading efficacy*. This result was consistent with our self-construal hypothesis and Kiuchi's previous study (2006). According to Markus and Kitayama (1991), individuals with independence emphasize their own needs, desires, and rights, while individuals with interdependence meet others' needs and restrain their own needs. Therefore, our participants with higher independence across the two countries showed higher *reading efficacy*, while higher interdependence resulted in lower *reading efficacy* scores. This relationship can be consistently observed in different countries. Although literacy studies (Conradi et al., 2014; Kambara, 2020; Kambara & Lin, 2021) investigated reading motivation across different cultures, none of the studies directly examined the cultural influence. The present study is the first literacy study to provide empirical evidence to suggest self-construal can significantly predict reading motivation, particularly reading efficacy. This result informs us that self-views of readers are closely correlated with efficacy of readers. Moreover, we also found that the influences of self-construal on reading motivation were not moderated by country or gender.

8 Limitations and future directions

This study has four limitations. First, this study only tested Hispanic American college students that do not represent the whole American population. There are diverse racial and ethnic groups in the United States, and different groups have unique cultures which may affect their reading motivation. For example, a previous meta-analysis (Oyserman et al., 2002) showed that African Americans show more independence than European Americans, whereas no difference in interdependence among them was found. Also, Hispanic Americans and European Americans showed similar levels of independence, but Hispanic Americans had higher interdependence than European Americans. Future studies need to reexamine our self-construal hypotheses on reading motivation with different racial groups in the United States. Second, the present study only compared college students from the United States and Japan. It is difficult to understand if such a comparison can be generalized for the United States and other Asian cultures (e.g., Taiwan, Korea, China, India, or Indonesia). For instance, Oysterman et al. (2002) pointed out that differences of independence-interdependence between Americans and Chinese were larger than differences between Americans and Koreans or Japanese. Only comparing American and Japanese cultures restrains our understanding and generalization about similarities and differences across cultures that future research should explore. Third, the study had fewer male participants than female participants in both groups. The unequal number of females and males could influence the results of the relation between self-construals and reading motivation. Future research could collect the equivalent number of male and female students to examine gender differences in the two constructs. Fourth, it is difficult to investigate the variability in individual ethnic status of respondents and relate this individual characteristic to reading motivation and self-construal since we had a limited convenience samples across the two countries. Forthcoming research should use diverse samples using a large-scale dataset to explore the topic.

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