A Comparative Study on Motivations of Japanese CFL Learners of Different Ages

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Abstract

Sustaining learners' motivation to keep learning has been a concern for over 60 years in education and second language acquisition (SLA). Most research focusing on Japanese university students has contributed lots of theoretical and practical developments. However, there is still very little research focusing on the motivations of non-traditional adults and those under 18-year-old to learn Chinese. This is true even though previous research findings have proved that age (as well as nationalities and Chinese language levels) is one of the key variables influencing learning.

In order to find an effective treatment for sustainable Chinese language learning in Japan, the present study utilizes a survey method to analyze the types of Japanese learners' motivation to learn Chinese via exploratory and confirmatory factor analysis. The study also compares differences in motivation via multivariate analysis of variance (MANOVA).

The study reveales that Japanese learners' motivation to learn Chinese consists of eight common types: instrumental motivation (I.M.), personal orientation (P.O.), identified regulation (I.R.), Chinese cultural products (CCP), integrating into the Chinese community (ICC), external regulation (E.R.), social responsibility (S.R.), and Chinese for academic purposes (CAP). The results support several theories, distinct from Gardner and Lambert's theory of language learning motivation,

including Boshier's motivational orientations of adult education participants, Deci and Ryan's self-determination theory of motivation, and Dörnyei et al.'s theory of motivational dynamics in language learning.

The study also reveals that: (1) the I.M., E.R., and S.R. in children, adolescents, and traditional adults are significantly higher than that in non-traditional adults; (2) the P.O. in children is significantly higher than that in traditional and non-traditional adults; (3) the I.R. in traditional adults is significantly higher than that in children, adolescents, and non-traditional adults; (4) the CCP in non-traditional adults is significantly higher than that in children; (5) the ICC in traditional and non-traditional adults is significantly higher than that in children and adolescents, respectively; and (6) the CAP in children and adolescents is significantly higher than in non-traditional adults.

Based on the above findings, the present study, combined with the perspective of self-relevance enhancing motivation, provided the model of self-relevant-content-based approaches to stimulate Japanese CFL learners to learn Chinese continually. The current study also contributes to further exploration on how differently-aged Japanese learners can have (and use) a higher motivation as the main drive to learn Chinese throughout their lifetime.

1. Introduction

Sustaining learners' motivation has been a basic but important issue in primary education (Kovas et al. 2015; Rodríguez et al. 2020; Buchner and Kerres 2021), secondary education (Vergara et al. 2019; Smith et al. 2021; Toli and Kallery 2021), higher education (Blašková et al. 2019; Almulla and Alamri 2021; Santamaría-Vázquez et al. 2021) and second language acquisition (SLA) (Dörnyei 2009; Duru et al. 2019; Sárdi 2019; Gong et al. 2020b; Liu et al. 2020; Peng and Xie 2021) due to the recognition of the motivational impact of the main components of classroom learning, such as the teacher, the curriculum, and group learning (Dörnyei 2009).

In Taiwan, the number of Japanese learners of Chinese has always been very high. In Japan, there is an increasing number of Japanese learners of Chinese, which is only second to that of Japanese learners of English. Nin and Cai (2009) believed that clarifying the motivations of Japanese people to learn Chinese will be of great significance for planning future innovative Chinese language curriculum and teaching materials for Japanese learners. The present study is motivated by and expands Nin and Cai (2009) by comparing differently-aged Japanese learners to understand their motivations to learn Chinese as a foreign language (CFL).

Compared to motivation research in English and education, little research has been conducted into teaching Chinese to speakers of other languages (TCSOL). Nevertheless, as TCSOL courses spring up worldwide (like mushrooms after rain), Chinese language learning motivation research is helpful. The majority of research into Japanese learners of Chinese has involved Japanese university students, who are treated as traditional adults. The findings have helped to improve teaching CFL to Japanese learners. However, the present study found that research regarding motivations to learn Chinese among Japanese children under 18 and salaried Japanese people, who are treated as non-traditional adults, is not widespread (even though salaried Japanese people are most likely to learn Chinese for job and sightseeing purposes). Previous related studies (Lin 2012; Kuo et al. 2015; Yang 2016; Chen et al. 2019; Cheong et al. 2019) confirmed that, in addition to nationality and Chinese language

proficiency, age is an important variable affecting learning CFL.

Most Japanese children learn Chinese because their parents think learning Chinese is helpful to career development (Ministry of Education 2014; CTBC Business School 2015). In addition, comic book culture and fashion magazine articles motivate Japanese adolescents to learn Chinese (Nakano 2011). On the other hand, Japanese university students are motivated to learn Chinese by practical values and self-realization. They also have a more highly integrated and identified regulation of extrinsic motivation, rather than external regulation and intrinsic motivation, based on self-determination theory (Wang et al. 2016). However, Suzuki (2019) found that the Japanese University students' external regulation (the least autonomous type of extrinsic motivation) is highest during the first year of CFL. Li (2017) found that most Japanese older adults have clear motivations to learn Chinese, including "travel to China or areas where Chinese is spoken", "learning more about Chinese culture", and "improving their cultural accomplishment". These studies show that motivations to learn Chinese are diverse and complicated. Motivation is not constant but is associated with a dynamically changing and evolving mental process that differently-aged learners experience (Dörnyei 2009). McEown and Oga-Baldwin (2019) argued that research is needed to investigate the different motivations of various age groups from the perspective of the "dynamic turn" in L2 motivation proposed by Dörnyei et al. (2014). However, few studies have explored motivations to learn Chinese among differently-aged Japanese people. This is undoubtedly a knowledge gap in teaching CFL to Japanese learners. Therefore, this study aims to analyze the motivations of Japanese people to learn Chinese via exploratory and confirmatory factor analysis and compare differences in motivations via multivariate analysis of variance (MANOVA). Once the motivations of differently-aged Japanese learners of CFL are well understood, it may be helpful for TCSOL teachers to effectively enhance learners' motivations for sustainable Chinese language learning in Japan.

2. Literature Review

Theories on motivations to learn foreign languages and findings of previous related studies have been applied to TCSOL since the 1990s when Japanese research on motivations to learn foreign languages was conducted (Gao et al. 1993; Shi and Wan 1998; Ding and Wu 2011; Tan 2015). As far as Chinese L2 learners' ages and their motivations to learn Chinese are concerned, Xia (2003) found that the motivations to learn Chinese in the case of students of Chinese heritage are constantly evolving with age. For example, younger students' motivations to learn Chinese are influenced by interests, learning content, teachers' comments, parents' requirements, and poor self-control; these five factors make them feel forced to learn Chinese. However, adolescent Chinese-heritage students realize that the main priority to learn Chinese is to prepare themselves for jobs and further studies. Lesser factors are obeying parents' requests, understanding Chinese culture, and engaging in social communication.

Xue and Chen (2012) surveyed 140 elementary and middle school students at a Chinese school in Japan in October 2009. 80% had Japanese as their first language; nearly 70% were motivated to learn Chinese because of parents' advice; 28% felt it beneficial for work or study; 25% identified themselves as Chinese; 10% wanted to communicate with Chinese people, while only about 0.9% want to understand Chinese culture.

Sugie (2012) conducted a study of online language exchanges for nine months; the participants were senior high school students learning both Chinese and Japanese at high schools in China and Japan. The study found that 95% of Japanese high school students believed that online language exchanges were conducive to improving Chinese communication skills. These students with such experiences recognized the meaning and value of learning Chinese; hence their motivations to learn Chinese increased. Concerning research on Japanese university students' motivations to learn Chinese, Xia (2007) categorized their motivations into four types: curiosity, aimlessness, practicality, and ideality. Because both Chinese and Japanese share common Chinese characters, Japanese college students think that Chinese is easy to learn and course credits easy to

obtain; this makes them more willing to learn Chinese. This "passive motivation" is unique to Japanese college students (An 2003, 2004; Kaku and Liu 2007). A comparative study of older and younger students (Hou 2008) found that the older the students become, the more pronounced their social motivations are, such as minding their status in their class and comparing their Chinese test scores with other students. In addition, older students hope to find good jobs, which increases instrumental motivation.

Moreover, older students are afraid that their Chinese grades are worse than younger students. The desire for respect from other students motivates them to learn. Such motivation is called "prestige motivation" and is critical for older students. These empirical studies inspired the present study to focus on age as a factor in the motivation of Japanese people to learn Chinese.

A review of the present literature on L2 motivation and identity shows the following tendencies.

Firstly, instrumental and integrative motivations proposed by Gardner and Lambert in 1972 are found in Chinese L2 learners (such classification neglects globalization). Such motivation is the cumulative process of dynamic change in a person who performs successfully or not in learning a foreign language (Dörnyei et al. 2014; Csizér 2020; Li and Ouyang 2021). Instrumental motivations are identified in research conducted which does take globalization into account (Boshier 1991; Xu 2000; He 2003; Lee 2003; Hou 2008; Nin and Cai 2009; Ding and Wu 2011; Mao and Fukuda 2011; Xu and Gao 2014).

Akçay et al. (2015), Ardasheva et al. (2012), Gardner (2012), He (2003), Hudson (2017), Kato (2016), Lee (2003), Li (2006), Nin and Cai (2009), Shi and Wan (1998), Xue and Chen (2012), and Xu and Gao (2014) identify appreciation of a target language and Chinese culture as integrative motivations. Integration into a Chinese community, another integrative motivation, is identified by Ardasheva et al. (2012), Ferrari (2013), Hudson (2017), Kato (2016), Lee (2003), Shi and Wan (1998), Tao (2014), and Zhang (2014).

Secondly, closely connected to personal orientation, is learning Chinese for oneself and significant others (Boshier 1991; Schmidt et al. 1996; He 2003; Xia 2003; Hiraoka et al. 2006; Nin and Cai 2009; Ardasheva et al. 2012).

Thirdly, the present study takes identified regulation into account. Dörnyei (2009) assumed that learners are goal-oriented, rational beings. Therefore, they are constantly motivated to become a better version of themselves. Such motivation is found in Andrade-Molina et al. (2021), Ardasheva et al. (2012), Boshier (1991), Deci et al. (2017), Dincer and Yesilyurt (2017), Ding and Wu (2011), and Nin and Cai (2009).

Fourthly, compared to identified regulation, external regulation is the least self-determined external motivation, yet is often identified in research (Lu 1999; Xu 2000; He 2003; Hiraoka et al. 2006; Hou 2008; Nin and Cai 2009; Ardasheva et al. 2012; de la Fuente 2020; Nguyen and Habók 2021; Ye 2021). This motivation reflects a typical learning behaviour that seeks rewards, satisfies an external demand or avoids punishment.

Despite existing empirical evidence, the relevance of motivation changes in CFL contexts has been challenged. Related foreign language research in various contexts has substantiated that learning English is a powerful economic driver not only for individuals but also for non-English -speaking nations, especially developing ones (de Lotbinière 2011; McCormick 2013; Brooker 2018). Hence, learners of a powerful target language feel it incumbent upon them to help develop their own country and people (Xu and Gao 2014).

Chinese has become essential since mainland China became the world's second-largest economy in 2010. This study, based on a sociological (Peirce 1995; Norton and Toohey 2011) and motivational dynamic (Dörnyei et al. 2014) perspective, argues that focusing on an individual's psychological traits as the very motivation to learn Chinese should be challenged because L2 learners' motivation is dynamic in a changing society. Therefore, the present study assumes social responsibility may be one of the motivations to learn Chinese. In this context, it is essential to note that China is quickly becoming a popular study destination, right behind U.S. and U.K. The number of non-native Chinese learners who study in Taiwan is also growing. Therefore, the study of Chinese for academic purposes (CAP) is increasing.

However, compared with research on English for Academic purposes (EAP), research on CAP is understudied (Liu et al. 2019; Tao and Chen 2019). Some

studies have explored the motivation to learn Chinese to study in Chinese-speaking countries (Lu 1999; Xu 2000; Li 2006; Xue and Chen 2012). However, the present study is designed to fill the knowledge gap by exploring whether CAP motivation exists among differently-aged Japanese learners.

In an overview of the current literature review, the present study found that 'instrumental motivation' (I.M.), 'personal orientation' (P.O.), 'identified regulation' (I.R.), 'Chinese cultural products' (CCP), 'integrating into Chinese community' (ICC), 'external regulation' (E.R.), 'social responsibility' (S.R.), and 'CAP' have been used to structure questionnaires for Japanese Learners' Motivation toward Learning Chinese for expert judgment (Q-JLMLC-EJ) (see Table 2).

In conclusion, the study of learning motivation has received much attention, yielded some results during the last sixty years and continues to be explored by scholars and experts in foreign language teaching. Tan (2015) pointed out that the research on Chinese L2 learners' motivations in non-native Chinese-speaking environments has increased. This increase shows that this particular issue has been noticed beyond mainland China. Taking the context-and-complex-dynamic-systems theoretical perspective of L2 learning, a learner being located in a non-Chinese-speaking location may influence learners' motivation (Ushioda 2014).

Studies on Chinese as a second and foreign language (CS/FL) learners' motivation in Japan (Niinuma 2015; Yamada 2017; Andou 2018; Xiao et al. 2018) or other contexts (Sun 2011; Liu and Wang 2018; Gong et al. 2020a; Gong et al. 2020b) have increased. However, compared with many years of empirical research on age-related differences in the motivation of learning English (Kormos and Csizér 2008; Bećirović and Hurić-Bećirović 2017) or other languages as a foreign language (Ariane and Pascale 2012; Yamashita et al. 2017, 2018), little research has focused on comparing motivations to learn Chinese among Japanese children, adolescents, and non-traditional adults. Moreover, most research focus used descriptive statistics and studied Chinese L2 learners in one or several institutes to explore their motivations to learn Chinese.

In order to understand how the motivations of learners in different age groups may be conducive to Chinese language teaching (Hofer 2006; Lam and Kember 2006), the present study assumes that in addition to personal variables, such as gender, environment, degree or occupation, there are differences in motivation among differently-aged Japanese CFL learners.

Non-traditional adults differ from traditional adults in work and social experience, and multiple roles played in life (Wolfgang and Dowling 1981; Rautopuro and Vaisanen 2001; Baptista et al. 2008; Adams and Corbett 2010; Rothes et al. 2017). Given the research background and literature review, the present study analyses the types of Japanese learners' motivations to learn Chinese via factor analyses, comparing differences of the motivations via MANOVA, and providing current research findings as an effective treatment for sustainable Chinese language learning in Japan.

3. Methods

3.1 Participants

The participants in the present study were differently-aged Japanese CFL learners in Japan. Approximately 900 copies of the Q-JLMLC (in three languages: Chinese, Japanese and English) (Appendix A) were distributed to students and Chinese language teachers. The participants were encouraged to answer all questions to allow the CFA via the AMOS (Analysis of Moment Structures) to run successfully. Six hundred and sixteen useable responses were returned. There were 293 elementary and secondary school students at two Chinese schools, 92 Japanese university students (traditional adults) enrolled in Chinese courses, and 231 salaried Japanese people and retirees (non-traditional adults) at Chinese language institutes.

Participants were between 7 and 83 years old. 71.90% were Japanese, 25.42% Japanese-born Chinese and 2.68% Japanese-born Asian. All participants had Japanese as their first language, despite ethnicity. Table 1 summarizes the participants' demographic information.

Table 1: Demographic Information about Participants

Category	Level		Number	Proportion	Average Age
Age	Children (Elementary school students)		167	27.1	10.71
	Adolescents (Secondary school students)		126	20.5	13.87
	Traditional adults (Japanese university students)		92	14.9	20.28
	Non-traditional adults (Salaried Japanese people and retirees)		231	37.5	45.90
Gender	Children	Male	68	11.0	
		Female	98	16.0	
	Adolescents	Male	52	8.4	
		Female	72	11.7	
	Traditional Adults	Male	21	3.4	
		Female	71	11.5	
	Non-traditional Adults	Male	79	12.8	
		Female	146	23.7	
		Unreported	9	1.5	
Ethnicity	Children	Japanese	79	12.8	
		Japanese-born Chinese	84	13.6	
		Japanese-born Asian	4	.65	
	Adolescents	Japanese	56	9.1	
		Japanese-born Chinese	61	9.9	
		Japanese-born Asian	9	1.5	
	Traditional Adults	Japanese	86	14.0	
		Japanese-born Chinese	5	.82	
		Japanese-born Asian	1	.20	
	Non-traditional Adults	Japanese	222	36.0	
		Japanese-born Chinese	7	1.1	
		Japanese-born Asian	2	.33	

Table 1: Demographic Information about Participants (cont.)

Category	Level		Number	Proportion	Average Age
Chinese language proficiency	Children	Introductory	9	1.5	
		Basic	35	5.7	
		Intermediate	85	13.8	
		Advanced	37	6.0	
		Others	1	.16	
	Adolescents	Introductory	4	.65	
		Basic	5	.81	
		Intermediate	60	9.7	
		Advanced	52	8.4	
		Others	5	.81	
	Traditional Adults	Introductory	8	1.3	
		Basic	51	8.3	
		Intermediate	29	4.7	
		Advanced	0	.00	
		Others	2	.33	
	Non-traditional Adults	Introductory	22	3.6	
		Basic	85	13.8	
		Intermediate	76	12.32	
		Advanced	23	3.73	
		Others	3	.49	
		Unreported	24	3.9	

3.2 Instrument

Designing the Q-JLMLC-EJ with three languages (Chinese, Japanese, and English) was the first step. To lay a stable foundation for this study, the related literature and theories for motivation to learn foreign languages and questions from previous foreign language learning motivation questionnaires were analyzed. These later served as the questions for the Q-JLMLC-EJ (Table 2).

Table 2: The Q-JLMLC-EJ Structure

Variables	Meanings	Item Nos. (revised Item Nos.)	References
Instrumental motivation	Learning Chinese to achieve beneficial goals.	1(3), 2(4), 3(15), 4(19), 5(38), 6(41), 7(48), 8(x), 9(49), 10(58), 11(76), 12(85)	Boshier (1991); Ding and Wu (2011); He (2003); Hou (2008); Lee (2003); Mao and Fukuda (2011); Nin and Cai (2009); Xu (2000); Xu and Gao (2014)
Personal orientation	Learning Chinese for selves and significant others	13(20), 14(22), 15(26), 16(40), 17(42), 18(44), 19(50), 20(53), 21(54), 22(55), 23(56), 24(57), 25(61), 26(63), 27(64), 28(66), 29(74), 30(78), 31(79)	Ardasheva et al. (2012); Boshier (1991); He (2003); Hiraoka et al. (2006); Nin and Cai (2009); Schmidt et al. (1996); Xia (2003)
Identified regulation	Learning Chinese for conscious values that are personally important and meaningful to the individual	32(1), 33(5), 34(6), 35(7), 36(8), 37(9), 38(17), 39(25), 40(24), 41(81)	Andrade-Molina et al. (2021); Ardasheva et al. (2012); Boshier (1991); Deci et al. (2017) ; Dincer and Yesilyurt (2017) Ding and Wu (2011); Nin and Cai (2009)
Chinese cultural products	Learning Chinese to understand Chinese culture.	42(18), 43(21), 44(27), 45(30), 46(31), 47(32), 48(36)	Akçay et al. (2015); Ardasheva et al. (2012); Gardner (2012); He (2003); Hudson (2017); Kato (2016); Lee (2003); Li (2006); Nin and Cai (2009); Shi and Wan (1998); Xue and Chen (2012); Xu and Gao (2014)
Integrating into a Chinese community	Learning Chinese in order to be a member of the Chinese community	49(10), 50(11), 51(12), 52(13), 53(16), 54(34), 55(35), 56(37), 57(43), 58(71), 59(72), 60(80)	Ardasheva et al. (2012); Ferrari (2013); Hudson (2017); Kato (2016); Lee (2003); Shi and Wan (1998); Tao (2014); Zhang (2014)

Table 2: The Q-JLMLC-EJ Structure (cont.)

Variables	Meanings	Item Nos. (revised Item Nos.)	References
External regulation	Learning Chinese for external rewards, for fear of punishment, or escape	61(23), 62(28), 63(29), 64(33), 65(39), 66(45), 67(62), 68(65), 69(67), 70(69), 71(70), 72(73), 73(75), 74(77), 75(82), 76(83), 77(84), 78(86), 79(x)	Ardasheva et al. (2012); de la Fuente (2020); He (2003); Hiraoka et al. (2006); Hou (2008); Lu (1999); Nguyen and Habók (2021); Nin and Cai (2009); Xu (2000); Ye (2021)
Social responsibility	Learning Chinese for developing home country and helping others	80(14), 81(46), 82(47), 83(51), 84(52)	Norton and Toohey (2011); Peirce (1995); Xu and Gao (2014)
Chinese for academic purposes	Learning Chinese for study and work through the medium of Chinese.	85(2), 86(59), 87(60), 88(68)	Li (2006); Lu (1999); Tao and Chen (2019); Xu (2000); Xue and Chen (2012); Xu and Gao (2014)

Note: 1. Revised Item Nos. are for Q-JLMLC.
　　 2. 'x' stands for the item was eliminated following the expert judgement.

Translated questionnaires have semantic and conceptual equivalence issues. Behling and Law (2000) proposed approaches to combat them. For example, expert judgement in content-related validity and confirmatory factor analysis. These help researchers modify problematic items and decrease the gap of semantic and conceptual meanings (caused by translation), affecting participants' reading comprehension. In order to achieve this in the present study, ten collective TCSOL-related scholars and specialists in Taiwan and Japan (Table 3) were invited to advise on items in the Q-JLMLC-EJ. This study utilized the Content Validity Index (CVI) to evaluate the content validity of a scale proposed by Waltz et al. (1991) to ensure appropriate items. Afterwards, item analysis, factor analyses, and internal consistency reliability were also utilized to secure

the reliability and validity of the Questionnaire for Japanese Learners' Motivation toward Learning Chinese (Q-JLMLC).

Table 3: The Background of 10 Scholars and Specialists

Alias	Nation	Alias affiliation	Position	Specialties
Bang	Taiwan	Department of Language, T.C. university	Associate Professor	Chinese language education/ Reading and Writing education
Choris	Taiwan	Chinese language education centre, university	Assistant Professor	Chinese-English translation/ Teaching Chinese as a second language
Feng	Taiwan	Japanese Chinese school	Principal	Educational administration of teaching Chinese as a foreign language (TCFL)/ Teaching Chinese to the Japanese
Fuka	Japan	Department of Language and culture, OK university	Professor	Cognitive linguistics of Chinese grammar/ Chinese-Japanese language comparative analysis/ Teaching Chinese to the Japanese
Honesty	Taiwan	Master's program in international education, Z.R. university	Professor	Higher education/ Comparative education/ Language education
Lighty	Japan	Department of Chinese Language, K.T. university	Professor	Teaching Chinese as a foreign language/ Chinese-Japanese translation
Mounty	Japan	Department of Humanistic Science, T.K. university	Visiting Professor	Online Chinese learning and Autonomous learning Creative Chinese language education
Pette	Taiwan	Department of Foreign language, T.C. university	Assistant Professor	English education/ Cross-cultural education/ Communicative skills

Table 3: The Background of 10 Scholars and Specialists

Alias	Nation	Alias affiliation	Position	Specialties
Sensory	Japan	Department of language and culture, O.I. university	Professor	Chinese language education, Chinese linguistics, Contrastive linguistics
Snow	Taiwan	Japanese Chinese school	Principal	Educational administration of teaching Chinese as a foreign language (TCFL) Teaching Chinese to the Japanese

In order to calculate the CVI value, invited scholars and specialists were asked to rate the applicability of each item on a four-point scale. There are several variations of labelling the four ordinal points, but the scale used most often is 1 = inapplicable, 2 = applicable after modification, 3 = applicable, and four = very applicable (Polit et al. 2007). The number of specialists rating either 3 or 4 was divided by the number of participating specialists to calculate the CVI value.

The formula for the CVI value of each item (Item-level CVI, I-CVI) is I-CVI = $\frac{n}{N10}$ where n stands for the number of scholars and specialists rating an item at 3 or 4, and "N10" stands for the 10 TCSOL-related scholars and specialists.

The sum of I-CVI values is computed based on the formula, and Scale-level CVI (S-CVI) equals 76.3.

Finally, S-CVI (= 76.3) divided by 88 (the number of items) is approximately equal to .867 (average S-CVI) (Table 4), which is greater than .80. Therefore, the results demonstrated good content validity for the Q-JLMLC-EJ.

Table 4: The I-CVI and S-CVI Values

Item No. (Revised item No.)	n	I-CVI	Item No. (Revised item No.)	n	I-CVI	Item No. (Revised item No.)	n	I-CVI	Item No. (Revised item No.)	n	I-CVI
1.(3)	10	1.0	23.(56)	9	.90	45.(30)	10	1.0	67.(62)	8	.80
2.(4)	10	1.0	24.(57)	8	.80	46.(31)	10	1.0	68.(65)	9	.90
3.(15)	9	.90	25.(61)	9	.90	47.(32)	10	1.0	69.(67)	8	.80
4.(19)	8	.80	26.(63)	9	.90	48.(36)	8	.80	70.(69)	8	.80
5.(38)	9	.90	27.(64)	6	.60	49.(10)	9	.90	71.(70)	10	1.0
6.(41)	9	.90	28.(66)	6	.60	50.(11)	8	.80	72.(73)	8	.80
7.(48)	8	.80	29.(74)	8	.80	51.(12)	9	.90	73.(75)	8	.80
8.(x)	5	.50	30.(78)	9	.90	52.(13)	9	.90	74.(77)	8	.80
9.(49)	10	1.0	31.(79)	8	.80	53.(16)	9	.90	75.(82)	10	1.0
10.(58)	10	1.0	32.(1)	8	.80	54.(34)	8	.80	76.(83)	9	.90
11.(76)	9	.90	33.(5)	8	.80	55.(35)	9	.90	77.(84)	10	1.0
12.(85)	9	.90	34.(6)	8	.80	56.(37)	8	.80	78.(86)	9	.90
13.(20)	8	.80	35.(7)	8	.80	57.(43)	10	1.0	79.(x)	5	.50
14.(22)	9	.90	36.(8)	8	.80	58.(71)	9	.90	80.(14)	9	.90
15.(26)	9	.90	37.(9)	8	.80	59.(72)	9	.90	81.(46)	9	.90
16.(40)	8	.80	38.(17)	8	.80	60.(80)	8	.80	82.(47)	10	1.0
17.(42)	9	.90	39.(25)	9	.90	61.(23)	8	.80	83.(51)	10	1.0
18.(44)	9	.90	40.(24)	10	1.0	62.(28)	9	.90	84.(52)	9	.90
19.(50)	8	.80	41.(81)	9	.90	63.(29)	9	.90	85.(2)	8	.80
20.(53)	8	.80	42.(18)	9	.90	64.(33)	9	.90	86.(59)	9	.90
21.(54)	10	1.0	43.(21)	10	1.0	65.(39)	9	.90	87.(60)	9	.90
22.(55)	8	.80	44.(27)	10	1.0	66.(45)	8	.80	88.(68)	8	.80
S-CVI											76.3
Average S-CVI											.867

Note: 1. The revised item No. is for the Q-JLMLC.
　　　2. 'x' stands for the eliminated item following expert judgement.

I-CVI less than 0.78, in which six or more judges are involved, should be considered for modification (Shrotryia and Dhanda 2019).

In the qualitative analysis, Item 8, 'Learning Chinese is required in my school.' (I-CVI=.50) and Item 68 (revised item No.: 65) 'Everybody in school has to learn Chinese.' (I-CVI=.90) are similar. Therefore, Item 8 was eliminated.

The concept of Item 79, 'My parents and teachers want me to learn Chinese.' (I-CVI=.50), overlaps with Item 27 'I learn Chinese because my parents want me to learn it.' (I-CVI=.60) and Item 28, 'I learn Chinese because

my teachers want me to learn it.' (I-CVI=.60). Therefore, Item 79 was eliminated.

Item 27 was modified as 64. 'My parents want me to learn Chinese.', and Item 28 was modified as 66. 'My teachers want me to learn Chinese.'

To avoid respondents answering without thinking, items in the same categories were scrambled.

The developed "Questionnaire for Japanese Learners' Motivation toward Learning Chinese" (Q-JLMLC) in Chinese, Japanese, and English and a 5-point Likert-type scale were adopted to measure learners' responses. Measurements included the response degree of impact: 'Above 80%,' '60~79%,' '40~59%,' '20~39%,' and 'Under 19%.' Participants were informed that a score under 19% indicates 'little to no motivation.' The degree of impact was scored 5 to 1 accordingly.

In addition, demographic questions, such as gender, age, identity, nationality, school or affiliation, marital status, duration of learning Chinese in Japan, Taiwan, China and other countries, and self-evaluation of Chinese language level, were also included in the Q-JLMLC.

The Q-JLMLC would assess the Japanese CFL learners on how motivated they are to learn Chinese.

To measure the correlation of each item with the underlying construct, differentiate between respondents having high total and low total scores on summated five-point Likert scale items (Cooper and Schindler 2014), and to eliminate items that are not discriminative, the item analysis was run through IBM SPSS Statistics 24.0 for Windows.

After that, internal consistency reliability analysis was used to judge how well the items on the Q-JLMLC proposed to measure the same construct produce similar results.

In the item analysis, the critical ratio of extreme-group for items is $p < .05$. This score means that questions can reflect the action of subjects precisely.

In the homogeneity test, the (corrected) item-total correlation of items is above .30. Such a score indicates that the corresponding item correlates well with the overall scale (Field 2018).

With the exception of Item 25 (the critical ratio: 2.263 and the (corrected)

item-total correlation: .120 (.098)), and Item 26 (the critical ratio: 10.280 and the (corrected) item-total correlation: .287 (.258)), and $p < .01$ which reaches the level of significance, the reliability value (Cronbach's alpha if item deleted) of Items 23, 25, 26, 28, 41, 44, 61, 64, 65, 66, 73, 75, 77, and 78 were not less than the Cronbach's Alpha value .970. Hence, these items were eliminated to run the exploratory and confirmatory factor analysis and analyze the types of Japanese learners' motivations to learn Chinese.

4. Results and Discussion

4.1 Results

4.1.1 The Types of the Differently-Aged Japanese Learners' Motivation for Learning Chinese

The present study analyzed the types of differently-aged Japanese learners' motivations to learn Chinese employing exploratory and confirmatory factor analysis. The purpose was to extract common factors to classify the motivation types and construct the validity of the scale. Thus, the study used principal components analysis (PCA) to estimate factor loadings. PCA is the default extraction method in many popular statistical software packages, such as SPSS and SAS.

Statistical theorists (Steiger 1990; Velicer and Jackson 1990; Costello and Osborne 2005) argued that either there is almost no difference between principal components and factor analysis or that PCA is a preferable extraction method for exploratory factor analysis (EFA) (Rojas-Valverde et al. 2020). They attribute this to the fact that PCA is an extraction method for EFA to reveal any latent variables that cause the manifest variables to covary (Costello and Osborne 2005). They further argue that neither EFA nor PCA provided that the relationship between an observed variable and a component/factor is expressed by a factor loading (ranging from 0 to 1), which measures the amount of variance in the variable explained by the component/factor (Alavi et al. 2020), even though it was not considered as a valid method of factor analysis by some experts.

Gorsuch (1997) observed that common factor analysis: Firstly, has a technical problem. There is no unique set of factor scores that can be calculated

from a common factor analysis, but such scores can be calculated from a component analysis; secondly, results are similar regardless of whether principal component or common factor analysis is used when there are several observed variables per factor. Usually, factor loadings should be greater than .40 (Hair et al. 2010; Field 2018). Items with factor loadings lower than .40 would be eliminated because the items are invalid and have a low correlation with other items in the same common factor.

In addition, in the dialog box, 'Factor Analysis: Extraction' of the IBM SPSS Statistics 24.0 for Windows, 'Eigenvalues greater than' one was selected to determine the number of factors to extract. In the dialog box 'Factor Analysis: Rotation', the present study checked 'Rotated solution' and used the orthogonal rotation method, Varimax. This was chosen because it is the most commonly used method that tends to produce factor loadings that are either very high or very low, making it easier to match each item with a single factor.

In the first EFA, the twelve common factors were extracted. The factor loadings of the items were greater than .40 except in Items 2, 9, 19, 20, 32, 50, 63, and 67. Also, at least three items in a common factor were necessary because one or two items would fail to reflect the feature of the common factor. Thus, in addition to Items 2, 9, 19, 20, 32, 50, 63, and 67, Items 71 and 72 were eliminated. The cumulative explained variance was 63.917% (Appendix B).

Based on the result of the first EFA, the rest of the 62 items were compiled by the second EFA. The result of the second factor analysis showed that the ten common factors were extracted. The factor loadings of the items were greater than .40 except in Items 17, 34, 37 and 39. Furthermore, only Item 16 was left in F1 once Item 17 was removed. Therefore, Item 16 was also eliminated in addition to Items 17, 34, 37 and 39. The cumulative explained variance was 63.426% (Appendix C).

Based on the result of the second EFA, the rest of the 57 items were compiled by the third EFA. The result showed that the factor loadings of the eight common factors extracted were greater than .40 except in Item 18. Hence, Item 18 was eliminated. The cumulative explained variance is 60.793% (Appendix D).

After EFA, the eight common factors standing for eight types of Japanese

learners' motivation for learning Chinese were extracted. According to the item description in the eight factors, the eight motivation types were named as follows:

Type 1: Instrumental motivation. Item descriptions that fall into this category were 3, 4, 15, 38, 48, 49, 58, 76, and 85.

Type 2: Personal orientation. Item descriptions that fall into this category were 22, 40, 42, 45, 53, 54, 56, 57, 69, 74, and 79.

Type 3: Identified regulation. Item descriptions that fall into this category were 1, 5, 6, 7, 8,24, 43, and 81.

Type 4: Chinese cultural products. Item descriptions that fall into this category were 21, 27, 30, 31, and 33. m21.

Type 5: Integrating into the Chinese community. Item descriptions that fall into this category were 10, 11, 12, 13, 18, 35, 36, and 80.

Type 6: External regulation. Item descriptions that fall in this category were 62, 70, 82, 83, 84, and 86.

Type 7: Social responsibility. Item descriptions that fall in this category were 14, 29, 46, 47, 51, and 52.

Type 8: Chinese for academic purposes. Item descriptions that fall in this category were 59, 60, and 68.

In order to test the factorial structure of observed variables and verify which observed variable was related to which latent variable, the present study ran the confirmatory factor analysis (CFA). In the CFA, Items 3, 22, 24, 36, 42, 43, 45, 46, 53, 56, 58, 69, 74, 76, 80, 84, 85, and 86 were eliminated according to modification indices (M. I.). This was because the concepts of these items were similar to other items, resulting in the GFI's and AGFI's values being less than .8 and RMSEA greater than .08.

Items 1, 29, 33, 35, and 62 were also eliminated because the SMC values were low, and these items resulted in Average Variance Extracted (AVE) less than .5, signifying that the convergent validity was poor (Fornell and Larcker 1981; Alfayad and Arif 2017; Hair et al. 2019). Figure 1 and Table 5 show the result of the CFA model after modifying.

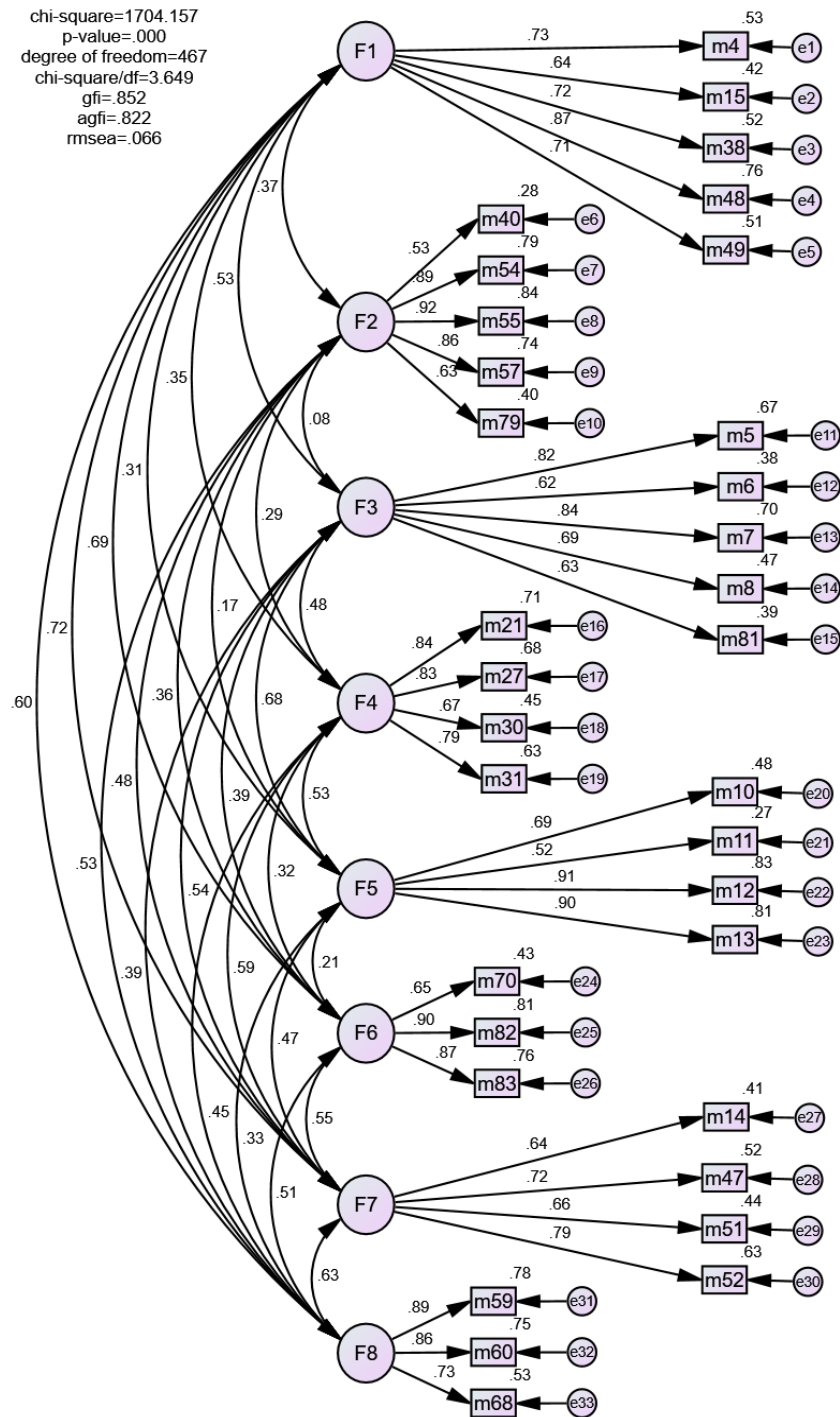A Comparative Study on Motivations of Japanese CFL Learners of Different Ages

Figure 1: Confirmatory Factor Analysis of the Q-JLMLC

Table 5: The CFA Result

Latent Variables	Observed Variables	Standardized Factor Loadings	Squared Multiple Correlations (SMC)	Composite Reliability (CR)	Average Variance Extracted (AVE)
F1 (I.M.)	m4	.73***	.53	.86	.55
	m15	.64***	.42		
	m38	.72***	.52		
	m48	.87***	.76		
	m49	.71***	.51		
F2 (P.O.)	m40	.53***	.28	.88	.61
	m54	.89***	.79		
	m55	.92***	.84		
	m57	.86***	.74		
	m79	.63***	.40		
F3 (I.R.)	m5	.82***	.67	.84	.52
	m6	.62***	.38		
	m7	.84***	.70		
	m8	.69***	.47		
	m81	.63***	.39		
F4 (CCP)	m21	.84***	.71	.87	.62
	m27	.83***	.68		
	m30	.67***	.45		
	m31	.79***	.63		
F5 (ICC)	m10	.69***	.48	.85	.60
	m11	.52***	.27		
	m12	.91***	.83		
	m13	.90***	.81		
F6 (E.R.)	m70	.65***	.43	.86	.69
	m82	.90***	.81		
	m83	.87***	.76		
F7 (S.R.)	m14	.64***	.41	.80	.50
	m47	.72***	.52		
	m51	.66***	.44		
	m52	.79***	.63		
F8 (CAP)	m59	.89***	.78	.87	.69
	m60	.86***	.75		
	m68	.73***	.53		

Note: *** stands for $p < .001$.

On the evaluation of goodness of fit (GOF) for the CFA model of the Q-JLMLC, Table 6 shows that criteria could be used to assess:

Table 6: Criteria-for-model-fit Assessment

Measures	Criteria	References
chi-square/df ratio (χ^2/df)	< 5	Hair et al. (2019) Schumacker and Lomax (2016)
goodness-of-fit index (GFI)	≥ .85	Kline (2015) Schumacker and Lomax (2016)
adjusted goodness-of-fit index (AGFI)	≥ .80	Akkuş (2019) Tabachnick and Fidell (2018)
root mean square error of approximation (RMSEA)	< .08 or < .05	Gao et al. (2019) Schumacker and Lomax (2016)

Based on Figure 1, the χ^2/df ratio is 3.649, less than 5, GFI and AGFI both are .852 and .822, greater than .8 respectively, and RMSEA is .066, falling in between .05 and .08. This fact proves that the model fit is reasonable.

The present study followed the guidelines laid out by Hair et al. (2019) concerning factor loading. It was expected that each factor would account for at least 5% of the variance and that factor loadings would be at least |.50|, which would signal considerable practical significance. In Table 5, all factor loadings are greater than .5 with p values less than .001, signifying that the relationship between each observed variable and the underlying factor (latent variable) is supported.

In general, convergent validity (C.R.) is greater than .7, indicating that the inherent consistency of all measurement questions is high, and AVE is greater than 0.5, indicating that the measurement questions can better reflect the characteristics of each research variable in the model (Gu et al. 2019; Hair et al. 2019). The C.R.'s and AVE's values in Table 5 are greater than .70 and .50, respectively, signifying that convergent validity is supported.

Torkzadeh et al. (2003) argued that if the confidence interval of the paired correlation does not include the value of 1 following correlations among latent variables paired, the model's discriminant validity is indicated. Table 7 shows the result of computing the 95% confidence interval for the correlations between two latent variables via the Bias-corrected percentile method.

Table 7: The Correlations between Two Latent Variables

Parameter	Estimate	Lower	Upper
F1 <--> F2	.372[**]	.307	.449
F1 <--> F3	.530[*]	.433	.594
F1 <--> F4	.350[**]	.270	.438
F1 <--> F5	.309[**]	.208	.403
F1 <--> F6	.687[*]	.589	.748
F1 <--> F7	.723[*]	.632	.781
F1 <--> F8	.598[*]	.517	.651
F2 <--> F3	.083	-.026	.178
F2 <--> F4	.287[*]	.182	.378
F2 <--> F5	.170[**]	.081	.247
F2 <--> F6	.361[**]	.282	.443
F2 <--> F7	.476[*]	.385	.542
F2 <--> F8	.531[**]	.446	.599
F3 <--> F4	.478[**]	.414	.546
F3 <--> F5	.679[**]	.610	.734
F3 <--> F6	.388[*]	.305	.465
F3 <--> F7	.545[*]	.451	.617
F3 <--> F8	.386[*]	.302	.453
F4 <--> F5	.535[**]	.462	.603
F4 <--> F6	.315[*]	.218	.382
F4 <--> F7	.586[**]	.488	.660
F4 <--> F8	.455[*]	.365	.542
F5 <--> F6	.213[*]	.119	.310
F5 <--> F7	.471[**]	.367	.546
F5 <--> F8	.327[*]	.237	.402
F6 <--> F7	.547[*]	.452	.639
F6 <--> F8	.514[*]	.426	.584
F7 <--> F8	.635[*]	.542	.698

Note: [*] stands for $p < .05$, [**] stands for $p < .01$.

Based on Table 7, correlations between two latent variables existed except "F2 v.s. F3", but each value between the lower and upper bound does not contain 1, demonstrating that discriminant validity is supported. In addition, the Cronbach's α of internal consistency reliability for the Q-JLMLC was .938 greater than .90, indicating excellent reliability according to Hair et al. (2019).

After item analysis, factor analyses, and internal consistency reliability

analysis, the reliability and validity of the Q-JLMLC was proven, and the eight common factors standing for eight types of Japanese learners' motivation for learning Chinese were identified.

4.1.2 The Difference in Motivations to Learn Chinese among the Differently-Aged Japanese CFL Learners

Table 8 shows that at least one significant difference existed in the motivation for learning Chinese among the differently-aged Japanese learners following MANOVA (Wilk's λ = .606, MANOVA F = 13.79, p = .000 < .001).

Table 8: Comparison of the Motivation for Learning Chinese among Differently-aged Japanese Learners

Groups Motivation	Children (n=167)		Adolescents (n=126)		Traditional adults (n=92)		Non-traditional adults (n=231)		F test	Scheffé	$\eta2$	Observed Power
	M	SD	M	SD	M	SD	M	SD				
I.M.	3.37	1.17	3.21	1.12	3.50	.93	2.55	1.20	24.931***	C > N A > N T > N	.109	1.00
P.O.	1.82	1.08	1.69	.88	1.47	.77	1.50	1.01	4.633**	C > T C > N	.022	.892
I.R.	3.51	1.10	3.27	1.15	4.02	.90	3.53	1.05	8.969***	T > C T > A T > N	.042	.996
CCP	2.21	1.16	2.48	1.33	2.50	1.15	2.70	1.18	5.346**	N > C	.026	.933
ICC	2.86	1.17	2.68	1.18	3.70	1.00	3.37	1.11	21.273***	T > C T > A N > C N > A	.094	1.00
E.R.	2.97	1.41	2.94	1.41	3.34	1.12	2.01	1.22	32.814***	C > N A > N T > N	.139	1.00
S.R.	2.72	1.20	2.80	1.14	3.01	1.07	2.35	1.17	9.045***	C > N A > N T > N	.042	.996
CAP	2.29	1.30	2.40	1.28	2.20	1.27	1.84	1.21	7.118***	C > N A > N	.034	.982
Wilk's λ= .606									MANOVA F= 13.79***			

Note: 1. ** stands for p < .01, *** stands for p < .001.

2. 'C' stands for 'Children,' 'A' stands for 'Adolescents,' 'T' stands for 'Traditional adults,', and 'N' stands for 'Non-traditional adults.'

As shown in Table 8, the eight motivation types among the differently-aged Japanese learners of Chinese, based on the F values and p values less than .01, are significantly different following the MANOVA. After using Scheffé's method for multiple comparisons, the present study revealed that instrumental motivation in children, adolescents, and traditional adults is significantly higher in non-traditional adults. Also, $\eta 2$ is .109, which means that, with age being the independent variable, the effect size is medium (explained variance is 10.9%). The observed power is 1.00, which means the probability of drawing the correct conclusion from a statistically significant result is 100%.

Secondly, the present study revealed that children's personal orientation is significantly higher than non-traditional adults. Also, $\eta 2$ is .022, which means that, with age being the independent variable, the effect size is small (explained variance is 2.2%). The observed power is .892, which means the probability of drawing the correct conclusion from a statistically significant result is 89.2%.

Thirdly, the present study revealed that the traditional adults' identified regulation is significantly higher than children's, adolescents' and non-traditional adults'. Also, $\eta 2$ is .042, which means that, with age being the independent variable, the effect size is small (explained variance is 4.2%). The observed power is .996, which means the probability of drawing the correct conclusion from a statistically significant result is 99.6%.

Fourthly, the present study revealed that non-traditional adults' motivation for Chinese cultural products is significantly higher than that of children. Also, $\eta 2$ is .026, which means that the effect size is small, with age being the independent variable (explained variance is 2.6%). The observed power is .933, which means the probability of drawing the correct conclusion from a statistically significant result is 93.3%.

Fifthly, the present study revealed that the non-traditional adults' integrative (into Chinese communities) motivation is significantly higher than children and adolescents. Also, $\eta 2$ is .094, which means that the effect size is medium, with age being the independent variable (explained variance is 9.4%). The observed power is 1.00, which means the probability of drawing the correct conclusion from a statistically significant result is 100%.

Sixthly, the present study shows that children's, adolescents', and traditional adults' external regulation is significantly higher than non-traditional adults. Also, $\eta 2$ is .139, which means that the effect size is close to large, with age being the independent variable (explained variance is 13.9%). The observed power is 1.00, which means the probability of drawing the correct conclusion from a statistically significant result is 100%.

The present study also found, as with external regulation, that children's, adolescents', and traditional adults' social responsibility is significantly higher than non-traditional adults. Also, $\eta 2$ is .042, which means that age is an independent variable whose effect size is small (explained variance is 4.2%). The observed power is .996, which means the probability of drawing the correct conclusion from a statistically significant result is 99.6%.

The present study shows that children's and adolescents' CAP is significantly higher than non-traditional adults' CAP. Also, $\eta 2$ is .034, which means that the effect size is small, with age being the independent variable (explained variance is 3.4%). The observed power is .982, which means the probability of drawing the correct conclusion from a statistically significant result is 98.2%.

Finally, the present study used the Pearson correlation coefficient for all Japanese learners' Chinese proficiency and motivation combinations. The findings are presented in Table 9.

Table 9: Correlation among Japanese Learners' Ages, Chinese Language Proficiency, and Motivation

Variables	Ages	I.M.	P.O.	I.R.	CCP	ICC	E.R.	S.R.	CAP
Chinese language proficiency	-.190***	.125**	.170***	.001	.071	-.067	.164***	.165***	.185***

Note: ** stands for $p < .01$, *** stands for $p < .001$.

Firstly, Japanese learners' Chinese language proficiency had a low negative correlation with their ages (r = -.190, $p < .001$) due to ethnic identity, resulting in higher Chinese proficiency in younger Japanese learners than in older Japanese learners (Table 1).

Secondly, Chinese language proficiency had a low positive correlation with I.M. (r = .125, $p < .01$), P.O. (r = .170, $p < .001$), E.R. (r = .164, $p < .001$), S.R. (r = .165, $p < .001$), and CAP (r = .185, $p < .001$), signifying that Chinese language proficiency is associated with a greater result of the I.M., P.O., E.R., S.R., and CAP of the motivation.

4.2 Discussion

The results show that Japanese learners share the eight motivation types for learning Chinese. The results indicate that Boshier's (1991) motivational orientations of adult education participants, Deci and Ryan's (2008) self-determination theory of motivation, Dörnyei et al.'s (2014) theory of motivational dynamics in language learning and Gardner and Lambert's theory of language learning motivation, are all simultaneously supported.

The Q-JLMLC, which measures ideal Japanese CFL learners' selves, could be identified as valid and reliable. In contrast, any motivation theory or empirical study explained that Japanese CFL learners Ought-to-be Self could not be ascertained. Concerning this, the present study found that in the Q-JLMLC, instrumentality did not emerge as a single motivation type either, and only the Q-JLMLC measuring the knowledge orientation facet of instrumentality, showed acceptable statistical characteristics satisfying motivational theoretical approaches based on different research interests.

For example, not only have 'instrumental motivation', 'Chinese cultural products', and 'integrating into Chinese community' existing in Japanese CFL learners' motivations been confirmed to be consistent with instrumental and integrative motivations discovered by Gardner and Lambert in 1972, but they could also be identified in earlier studies (Gardner and MacIntyre 1991; Hong and Ganapathy 2017). In contrast, the present study further indicated age-related differences in Japanese CFL learners' motivations. For example, the result of the Japanese children's, adolescents' and traditional adults' instrumental motivation being significantly higher than that of the non-traditional adults was not well explained in previous findings (Ariane and Pascale 2012; Hong and Ganapathy 2017).

Gardner (2010) and Boshier (1991) stated that a motivated individual sets a goal and perseveres to achieve it, drawing a vital relationship between motivation and personal orientation or goal. While previous studies have identified an individual-oriented motivation for non-traditional adults (e.g., Boshier 1991; Schmidt et al. 1996; Xu and Gao 2014; Abedini et al. 2021), the present study found the Japanese children's personal orientation was significantly higher than that of the Japanese non-traditional adults. A possible reason is that most Japanese children in the present survey have at least one Chinese or Taiwanese parent. These children may now be aware of learning Chinese to interact with their children and for personal benefit. Xue and Chen (2012) identified 'Learn Chinese for further personal study' as a motivation among 140 primary and secondary school students in Chinese schools in Japan.

The I.R. in self-determination theory (SDT) is viewed as a somewhat internal perceived locus of causality (Ryan and Deci 2020). In I.R., the person consciously identifies with, or personally endorses, the value of an activity and thus experiences a relatively high degree of volition or willingness to act (Ryan and Deci 2020). Zamarripa et al. (2018) has substantiated how motivational regulations are related to changes across different stages. With respect to the E.R., it concerns behaviours driven by externally imposed rewards and punishments and is a form of motivation typically experienced as controlled and non-autonomous (Ryan and Deci 2020).

Japanese learners had not only identified themselves with the importance or value of what they perform (e.g., learning Chinese for bettering oneself, for better education opportunities, to obtain something meaningful), but their E.R. motivation was reflected in their efforts to avoid failure in class, and obtain good test grades while learning Chinese.

Furthermore, the present study revealed that Japanese traditional adults' I.R. is significantly higher than Japanese children, adolescents and non-traditional adults. Reasons for this include that, unlike non-traditional adults, traditional adults enroll full-time, live on campus, and concentrate on gaining a higher education diploma (Chen 2017). However, they share the common characteristic of self-directed learning with non-traditional adults, differing from elementary

and secondary school learners (Smith 2019). Therefore, the present study provides a reasonable explanation for Japanese traditional adults' significantly higher I.R.

On the other hand, extrinsic motivations (e.g., parental encouragement and easy to pass courses) are key factors influencing younger Japanese students (Xue and Chen 2012) and university students (An 2003, 2004; Kaku and Liu 2007; Nin and Cai 2009; Tao 2014).

However, as a person matures, the motivation to learn becomes internal, according to the andragogy proposed by Knowles et al. (2020). The present study supports the theory on age-related differences in motivation, substantiated by Japanese children's, adolescents' and traditional adults' E.R. being significantly higher than non-traditional adults, and so helps to fill the knowledge gap barely explored in previous studies on learning motivation of Japanese learners (Kuo 2014; Tao 2014; Zhang 2014) or learners of other foreign languages (Noels et al. 2000; Aydogan 2016).

Papi and Hiver (2020) pointed out that adaptive and competitive interactions between learners' motivation and complex dynamic environmental systems resulted in specific motivational trajectories that shaped these learners' language-learning choices and experiences. The influence of Chinese-speaking countries on the world's economy was less before mainland China's economy was reformed, even though Taiwan, Singapore, and Hong Kong have been new industrial economies since the 1960s. Because of mainland China's liberal and growing economy, not only are research-based publications and practices relating to business in China and business Chinese booming, but they are also facilitating the increase of non-native Chinese speakers learning Chinese.

In 2011, the British Council identified four benefits of speaking English, including improved employability and international mobility (Shinkle 2020). The benefits clearly explain why some non-native English speakers take up the social responsibility of learning English to contribute to their homeland and the weak (Gao et al. 2003; Xu and Gao 2014).

Chinese may become a global language (much as English has) because of China's burgeoning economy. A working knowledge of Chinese gives people an

advantage in international business regardless of their nationality (Nalesnik 2021). Despite 'social responsibility' as a motivation variable being scarcely mentioned in previous studies on motivation to learn Chinese, the present study found such motivation significantly motivated Japanese children, adolescents, and traditional adults to learn Chinese. This finding supports the perspective of ever-changing motivation in language learning argued by Dörnyei et al. (2014).

Regarding learning a foreign language for academic purposes, the number of non-native students studying in English-medium universities has increased over the past decade. The associated issues in English for academic purposes (EAP) have been studied for over 35 years. However, no single research-based volume has investigated the area's theoretical issues and pedagogical concerns (Flowerdew and Peacock 2001). Not only does this problem exist in EAP but also in Chinese for academic purposes (CAP).

China becoming a significant player in the global economy has increased the population of non-native Chinese speakers studying in Chinese-speaking countries. Whether to learn Chinese or obtain academic degrees, this demographic encourages the creation of more CAP courses to satisfy learners' needs (British Inter-University China Center 2016). Nevertheless, no research has been conducted on CAP except EAP. Xu and Gao (2014) found that in over 1,300 students from five Chinese universities, EAP is one of the motivations to learn English. However, using a questionnaire in a four-year longitudinal study, no correlation was found between the EAP motivation and students' identities. Another research project indicated that 70% of Master of Arts students have never taken any academic writing course and want a new course with generic features for writing a research article or thesis (Cai 2013). The present study contributed that Japanese children's and adolescents' CAP is significantly higher than Japanese non-traditional adults', filling the knowledge gap left by insufficient research focusing on CAP motivation of learners under 18, and analyzed the reason behind the result.

Needing to understand "What is in it for me (WIIFM)?" before learning and, 'motivation coming internally rather externally' are both characteristics of non-traditional adults (Knowles et al. 2020). However, according to previous

studies (Hou 2008; Li 2017), CAP has neither been explored nor identified as a motivation to facilitate Japanese 'non-traditional adult' learners to learn Chinese. Furthermore, based on the self-determination theory, CAP is not an intrinsic motivation.

There is a large literature showing that adult L2 learners, in contrast to children, often fail to acquire a proficient second language (Wang 1999; Saito 2015; Dąbrowska et al. 2020). In the present study, 23.5% of children and adolescents are Japanese-born Chinese, and around 38% of 21.9% under-18-years-old Japanese learners, one of whose parents is a native Chinese speaker and who talk to one of their parents in Chinese, identified themselves as Japanese. These younger Japanese learners' Chinese language proficiency is higher than non-traditional adults. Therefore, a low negative correlation between age and Chinese language proficiency.

Not only have 'instrumental motivation', 'Chinese cultural products', and 'integrating into Chinese community' existing in Japanese CFL learners' motivations been confirmed to be consistent with instrumental and integrative motivations discovered by Gardner and Lambert in 1972, but they were also present in earlier studies (Gardner and MacIntyre 1991; Hong and Ganapathy 2017). The present study adds that there are age-related differences in the motivations of Japanese CFL learners.

5. Conclusions

There has been much research on motivation to learn a foreign language. The present study investigated two crucial issues in the field of motivation for Japanese CFL students:

(1) Japanese CFL learners' eight types of motivation consisting of (a) instrumental motivation, (b) personal orientation, (c) identified regulation, (d) Chinese cultural products, (e) integrating into Chinese community, (f) external regulation, (g) social responsibility, and (h) Chinese for academic purposes, were categorized using reliable and valid evidence;

(2) The age-related differences among the Japanese CFL learners were revealed. The findings show that instrumental motivation in Japanese children,

adolescents, and traditional adults is significantly higher than in non-traditional adults. Japanese children have significantly higher personal-oriented motivation than traditional and non-traditional adults, respectively. However, traditional adults have a significantly higher level of identified regulation than children, adolescents, and non-traditional adults. Non-traditional adults are more motivated by Chinese cultural products than children, and traditional and non-traditional adults are significantly more motivated by integrating into Chinese communities than children and adolescents, respectively. Children, adolescents, and traditional adults are significantly more motivated by external regulation and social responsibility than non-traditional adults. Finally, children and adolescents are significantly more motivated by Chinese for academic purposes than non-traditional adults, but no significant difference exists between two groups of differently-aged adults.

After reviewing the above-concluded findings, the present study has identified that each Japanese learner studying Chinese is an independent individual. Their motivation to participate in Chinese language programs is multiple and complicated, proven not only by previous research but also by the present study. This academic phenomenon shows that the issue has been of significant importance. Understanding a person's motivation to learn a foreign language is beneficial for teachers in selecting appropriate textbooks, teaching strategies and methods to increase the learners' motivation.

Self-relevance is supported to enhance motivation among learners of all ages because the learning process shows its usefulness in bridging the gap between academic content and the demands of the actual world we live in (Keller 2016; Albrecht and Karabenick 2018; Belet 2018; Li and Keller 2018; Filgona et al. 2020; Herianto and Wilujeng 2021; Meşe and Sevilen 2021).

The argument that CAP related teaching and learning materials should be developed for CAP learners (Liu et al. 2019) similarly highlighted the importance of self-relevance to TCSOL. The present study uses its findings, combined with the perspective of self-relevance enhancing motivation, to provide Figure 2. and so present the model of self-relevant-content-based approaches to stimulate and sustain Japanese CFL learners to learn Chinese.
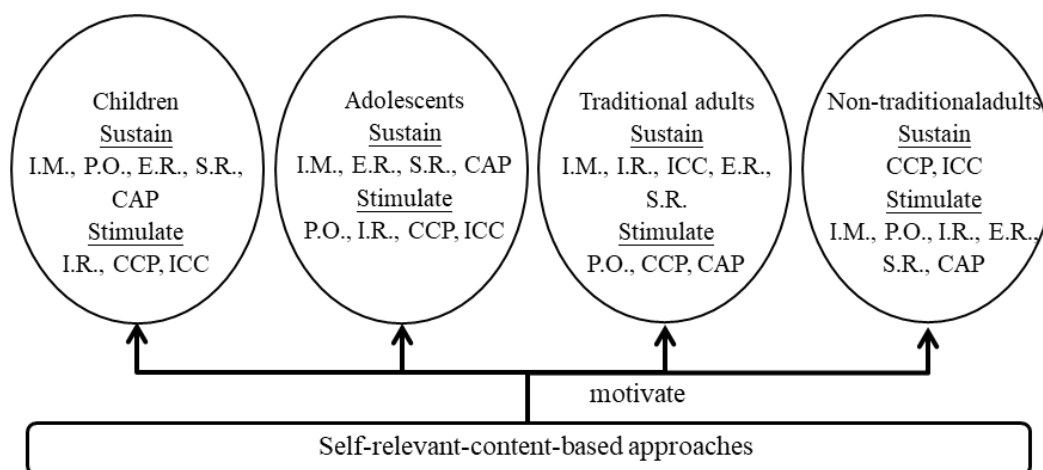
Figure 2: The Model of Self-relevant-content-based Approaches for Japanese CFL Learners

As illustrated in the model, the present study listed the self-relevant-content-based approaches that Chinese teachers can use to provide relevance for Japanese CFL learners. Chinese teachers are encouraged to provide Japanese CFL learners with activities related to learners themselves to sustain their significantly higher motivations and stimulate their lower motivations. For example, Japanese children and adolescents learning Chinese are influenced mainly by instrumental motivation, such as 'for a better job and occupational goal', 'for good education and accomplishment', and 'for future financial benefits'. Therefore, teachers should pay more attention to students' current educational and future occupational needs to strengthen their four language skills.

Using authentic materials to satisfy L2 learners' needs is emphasized in communicative language teaching (Larsen-Freeman and Anderson 2011). Therefore, teachers should compile or select daily-life relevant, authentic textbooks and allow learners, in or out of class, to have the opportunity to practice what they have learned. Although foreign language learning is closely connected to culture, what should teachers do when they have a group of Japanese CFL learners with low motivation to cultural issues no matter how old

they are? Teachers are advised to take their time to get to know students and let them know why cultural knowledge is essential. Teachers can also help their students to understand that comprehending Chinese-Japanese culture is helpful when mastering Chinese language skills. An excellent alternative is to schedule popular Chinese skits or films into the syllabus to let students watch and learn if the course progress permits.

Most Japanese traditional adults are motivated to learn Chinese by I.R., such as 'to better themselves', 'to find better education opportunities', 'to become a better-educated person', 'to get something meaningful out of life', and 'to learn new things'. Identified-regulated leaners' learning behaviors are carried out because of personal value and importance (Ryan and Deci 2020). Therefore, delivering utility value sustains Japanese traditional adults' motivation to learn Chinese. Utility value emphasizes the importance of content for the students' valuable short-term and long-term goals and provides relevance by piquing students' interests (Ormrod et al. 2019). For example, a teacher may have students who want to qualify as Chinese teachers or translators. These students will find Chinese exciting and give it great utility value. Their teacher can emphasize the relevance of the content to future work and goals and so emphasize its interest and utility, thus stimulating motivation to learn.

Knowles et al. (2020) pointed out that adult learners come with experience, and this experience provides the basis for much of the learning activities. Therefore, during discussion or in written form, having Japanese non-traditional adults relate their perceptions and experiences of the topic (e.g. Sharing Chinese cultural products they bring to class) is a great way to provide relevance. In Chinese classes, as in many other classes, Japanese non-traditional adults are supposed to preview what they will learn before coming to class (although they often do not). To encourage this, teachers can refer to the participatory approach in language learning (Larsen-Freeman and Anderson 2011) and have them write or record a short reflective text (50 to 100 words) on what Chinese events they are interested in before class. Whatever task a teacher sets will make good use of adult learning characteristics if it allows students to reflect on a personal or vicarious experience and explain how that experience relates to topics they are

interested in connecting to Chinese. By providing relevance in this way, the Japanese non-traditional adults' reflections can also provide fodder for class discussion and help them process information on a deeper level.

Using Mezirow's (2009) transformative learning theory, discussing with the Japanese non-traditional adults how their experiences relate to the topic allows Chinese teachers to clarify students' understanding and correct any misunderstanding. Discussions of this kind also stimulate related comments and responses from other students. In addition, teachers can stimulate awareness of 'social responsibility' motivation by assigning topics involving 'how to let the world know more about my country' or 'solutions to creating win-win economic prosperity by cooperating with Taiwan and world trade' and assigning students to think in Chinese. Such assignments stimulate language learning and social responsibility.

Based on professional perspectives and its findings, the present study recommends self-relevant content to provide relevance for Japanese students in CFL classes. Relatedness provides utility value for Japanese CFL learners. The author recommends using the concrete examples above to sustain and stimulate motivation to learn Chinese.

Furthermore, incorporating principled eclecticism into different-level Chinese classes is helpful because taking a pluralist approach to language teaching is helpful for language teachers to select what works within their dynamic contexts (Alharbi 2017; Brett 2020). However, the key to effectively using principled eclecticism is a thorough and holistic understanding of all L2 learners, learning theories, and pedagogies (Brown 2002). The present study contributes to Chinese teachers understanding the correlation between the Japanese students' Chinese language proficiency and their motivation.

Findings from various studies on motivation to learn Chinese or other foreign languages are diverse and changing (Arthur and Beaton 2000), so perfect and universal teaching principles virtually do not exist. The present study contributes to understanding motivation types and differences between the four Japanese students age groups for TCSOL teachers and future research. TCSOL teachers are advised to pay attention to each learner's motivation. To maintain

student motivation, teachers should deliberate how to effectively use these motivational factors in teaching Chinese to the four different age groups of Japanese learners.

Moreover, while extrinsic motivation has a negative predictive effect on students' academic achievement, intrinsic motivation has positive predictive effects (Areepattamannil et al. 2011). Therefore, future research needs to explore how the intrinsic motivation of differently-aged Japanese learners can be amplified and used as the main drive to learn Chinese.

Analytical tools, factor analyses and MANOVA have their analytic limitations on revealing the proportion of each motivation among Japanese learners. Therefore, in future research to construct the motivation weight system for Japanese learners, Analytic Network Process (ANP), a multi-criteria theory of measurement, can be used to derive relative priority scales of absolute numbers from individual judgments (or from actual measurements normalized to a relative form) (Saaty 2016). Self-report measures have fundamental limitations, such as sample characteristics, missing data, social desirability bias, item limitations, and brevity of the scale. The scale development as the primary research tool is critical to building knowledge in the quantitative approach for human and social sciences (Morgado et al. 2017). The present study has established the validity and reliability of the Q-JLMLC, although limitations cannot be excluded entirely. For example, younger Japanese learners (sample characteristics) may imagine their future situations (social desirability bias) before answering several items (item limitations). To decrease such limitations, in-depth interviews to support numerical data and longitudinal studies to compare possible changes for Japanese learners' motivation can be used in future research.

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Appendix A: The Revised Q-JLMLC Based on Confirmatory Factor Analysis

4. I learn Chinese to find better job opportunities.

5. I learn Chinese to better myself.

6. I learn Chinese to find better education opportunities.

7. I learn Chinese to become a better-educated person.

8. I learn Chinese to get something meaningful out of life.

10. I learn Chinese to make friends with native Chinese speakers.

11. I feel bad if I couldn't speak Chinese to my Chinese friends.

12. I learn Chinese because I want to learn about Chinese customs.

13. I learn Chinese to know about how Chinese people live.

14. I learn Chinese to help people who cannot speak Chinese.

15. I learn Chinese because fluent Chinese is a symbol of good education and accomplishment.

21. I learn Chinese because I am interested in Chinese TV shows.

27. I learn Chinese because I am interested in Chinese movies.

30. I learn Chinese to be able to read Chinese newspaper and magazines.

31. I learn Chinese because I am interested in Chinese songs.

38. I learn Chinese because increasing Chinese proficiency will have financial benefits for me.

40. I learn Chinese to win a scholarship to a university in Chinese speaking countries.

47. I learn Chinese to let the world know more about my country.

48. Learning Chinese will give me higher status in my job.

49. I learn Chinese in order to achieve an occupational goal.

51. I learn Chinese because I want to be part of the Chinese resource in my country.

52. I learn Chinese because I can contribute to my country's economic prosperity.

54. Learning Chinese helps me communicate with my children.

55. I learn Chinese to keep up with my children.

57. I learn Chinese to answer questions asked by my children.

59. I learn Chinese to communicate with international specialists in my own academic field.
60. I learn Chinese to comprehend the research literature in my own academic field.
68. I learn Chinese to understand presentations presented in Chinese by international peers in conferences.
70. I learn Chinese in order to obtain an academic degree.
79. I learn Chinese to share a common interest with my spouse.
81. I learn Chinese because I like learning new things.
82. I learn Chinese in order to obtain high scores in examinations.
83. I learn Chinese to pass examinations.

Please scan the QR Code for the complete Q-JLMLC (Appendix A') due to the word and page limits.

Appendix B to D

Please scan the QR Code for details from Appendix B to D due to the word and page limits.

各年齡層日本學習者華語文學習動機比較之研究

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摘要

在教育及第二語言習得領域，對維持學習者學習動機的關注已逾 60 多年。相關研究多以日本大學生為對象，且其成果對理論和實踐發展皆有相當程度的貢獻，但是，針對已有全職工作的非傳統成人學習者及 18 歲以下的華語學習動機之研究仍然屈指可數。儘管過去研究已經證明除了國籍和程度之外，年齡也是影響學習的關鍵變項。

為維持日本華語學習者動機尋找有效良方，本研究採調查法，利用探索性及驗證性因素分析 (exploratory and confirmatory factor analysis) 歸納日本華語學習者之動機類型，並以多變量變異數分析 (multivariate analysis of variance, MANOVA) 比較其差異。

本研究歸納出不同年齡層之日本華語學習者有八種動機類型，分別是「工具性動機」、「個人取向」、「認同調節」、「中華文化製品」、「融入華人社群」、「外在調節」、「社會責任」和「學術華語」。除了 Gardner 和 Lambert 的語言學習動機理論之外，此分類的結果也都分別支持了 Boshier 的成人教育參與者的動機取向、Deci 和 Ryan 的動機自我決定理論，以及 Dörnyei 等人的語言學習動機動態理論。

本研究也發現：一、兒童、青少年和 18 歲以上全職在學的傳統成人華語學習者的工具性、外在調節及社會責任動機明顯高於非傳統成人華語學習者；二、兒童華語學習者的個人取向動機分別顯著高於傳統和非傳統成人華語學習者；三、傳統成人華語學習者在認同調節動機上明顯高於兒童、青少年和非傳統成人華語學習者；四、非傳統成人華語學習者在中華文化製品動機上明顯高於兒童華語學習者；五、傳統和非傳統成人華語學習者的融入華人社區動機分別顯著高於兒童和青少年華語學習者；六、兒童和青少年華語學習者在學術華語方面的動機顯著高於非傳統成人華語學習者。

　　本研究根據結果，並結合以切身相關增強動機的觀點，提出自我切身相關之本位內容方法模式來激發、維持日籍華語學習者學習的動機，同時，也對未來進一步研究如何讓不同年齡的日本華語學習者具有更高的動機，以驅動其終身學習華語之動力有所貢獻。

關鍵詞：華語學習動機　日籍華語學習者　對日華語教學　兒少華語教學
　　　　　成人華語教學