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# PREVALENCE OF INDECISION AMONG JAPANESE ADULTS: A COLLECTIVIST LIFESTYLE CONCEPT?

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PREVALENCE OF INDECISION AMONG  
JAPANESE ADULTS:  
A COLLECTIVIST LIFESTYLE CONCEPT?

Thesis Proposal

BY

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March 11, 2015

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## Overview

*Procrastination* is an intentional delay of necessary action or decision. *Chronic procrastination*, the difficulty of starting or finishing tasks on time, has become a common problem. In fact, 20-25% of people self-identified as *chronic procrastinators*. Three identified procrastination behaviors: decisional, arousal, and avoidance procrastination was discussed. Procrastination may be affected by individual factors such as fear of failure, self-consciousness, self-handicapping, and information-oriented tendencies (Ferrari, 1991a; 1991c). Moreover, procrastination may or may not be affected by demographic variables such as gender, age, and marital status (Harriott & Ferrari, 1996; Ferrari et al., 1995; Hammer & Ferrari, 2002; Ferrari, O'Callanhan, & Newbegin, 2005; McCown & Roberts, 1994; Özer, Demir, & Ferrari, 2009)

A few researchers have been investigating the prevalence rates of procrastinations in several countries: however, mostly in the individualistic societies. Therefore, the present study investigated the rates of procrastination in relation to a collective culture, which has mixed individualistic tendencies, especially targeted to Japanese adult men and women. Results were analyzed around how demographic characteristics relate to one's procrastination tendencies and data collected was compared with previously published data collected in the individualistic countries. In addition, procrastination

scores with the present sample examined with several cultural-related factors, including individualism versus collectivism.

## Chapter I: Introduction

*Procrastination* is an intentional delay of necessary action or decision. Although everyone procrastinates from time to time, it does not mean everyone is a procrastinator (Ferrari, 2010). *Procrastination* is not equivalent to delaying or postponing but “to voluntarily delay an intended course of action despite expecting to be worse off for the delay” (Steel, 2007, p.66). People with *chronic procrastination* hardly ever start or finish tasks on time (Ferrari, 2010). In fact, 20-25% of people self-identified as *chronic procrastinators* (Ferrari, O’Callaghan, & Newbegin, 2005; Ferrari, Diaz-Morales, O’Callaghan, Diaz, & Argumedo, 2007). *Chronic procrastinators* delay or postpone in a variety of situations (Ferrari, Johnson, & McCown, 1995), regardless of the knowledge that this delay will create negative effects on the individual (Simpson & Pychyl, 2009).

In over thirty years of studies, researchers revealed that *procrastination* has become a common problem. Burka and Yuen (1983) suggested that fear and anxiety are the primary motives for chronic procrastinators, which is a way to protect their vulnerable self-esteem. Clinical psychologists like Burka and Yuen and psychiatrists indicated that fear and anxiety may cause many functional disorders (Ferrari & McCown, 1994). Furthermore, Ferrari (2010) revealed that chronic procrastination

causes number of problems in one's life. For example, procrastination behavior sabotages their future performance, damages other people's perception of the person, and much more personal, academic, work-related, financial, and health problems (Ferrari, 2010). Procrastination may be an intentional self-motivating strategy (Ferrari, Johnson, & McCown, 2005); however, it is considered as a harmful and foolish behavior (Briody, 1980, as cited in Steel, 2007), and more than 95% of procrastinators wish to reduce it (O'Brien, 2002, as cited in Steel, 2007).

### **Three Forms of Chronic Procrastination**

The common way to conceptualize procrastination among researchers is to divide it into three forms. Ferrari (1992b) first proposed the three forms of procrastination: arousal, avoidance, and decisional procrastination. He investigated procrastination using Lay's (1986) General Procrastination Scale (GP), McCown and Johnson's (1989) Adult Inventory of Procrastination (AIP), and later Mann's (1982) Decisional Procrastination Questionnaire (DP). From the findings of low correlations between the first two measures, he discussed that "both inventories may assess different forms of task delay" (Ferrari, 1992b, p.102). Through the further investigation, he suggested that the measures showed differences because the GP assesses *arousal procrastination* whereas the AIP assesses *avoidant procrastination*.



Arousal procrastinators are the people who purposefully wait until the last minute to experience arousal when the deadline to the task approaches. They experience a “high” when they rush to complete a task (Ferrari, O’Callaghan, & Newbegin, 2005). They tend to delay tasks to seek for a thrilling experience. Arousal procrastinators may believe that they work best under pressure (Ferrari, Barnes, & Steel, 2009). This may be doubtful. In fact, people made these claims often had poorer performance (Tice & Baumeister, 1997). Moreover, some researchers found that procrastinators showed no significant differences in exam performance or grades compared with non-procrastinators (Pychyl, Morin, & Salmon, 2000).

The second form of procrastination is *avoidant procrastinators* are the people who delay on completing tasks in different kind of situations. By doing so, they may claim that their poor performance is due to lack of effort or greater rates of time pressure but not because of lack of personal ability (Ferrari et al., 1995; Ferrari, O’Callaghan, & Newbegin, 2005). Some people avoid starting or completing a task due to the outcome involved may intimidate their self-esteem (Ferrari & Pychyl, 2000), or avoid receiving self-relevant information about one’s skills and competence (Ferrari, 1991b). They delay performing tasks to avoid or escape impostor tendencies, fear of

failure, social isolation, and success, or aversive tasks caused by frustration and boredom (Ferrari, 1995).

Furthermore, the third form of procrastination: *decisional procrastination* may be measured by Mann's (1982) Decisional Procrastination Questionnaire (DP). The *decisional procrastinators* are the people who show a strong tendency toward an inability to make timely decisions (Ferrari, 1991a), especially under stressful conditions (Ferrari et al., 1995). There may be a way of coping with conflicts in decision-making so that one may avoid confrontations (Janis & Mann, 1977, as cited in Ferrari, 1991a). People who self-reported as decisional procrastinators were not lazy. In addition, decisional procrastinators were not lacking ability to make decisions quickly (Effert & Ferrari, 1989), although they seemed to be distracted easily and often daydream (Harriott, Ferrari, & Dovidio, 1996).

Arousal and avoidant procrastination are considered behavioral procrastination (i.e., Ferrari & Emmons, 1994; Ferrari & McCown, 1994; Harriott & Ferrari, 1996) while decisional procrastination is considered cognitive procrastination (Effert & Ferrari, 1989). Researchers have been discussing whether there is a clear distinction between arousal and avoidant procrastination. Some studies found that the contexts of arousal and avoidance procrastination were highly correlated (Ferrari, Diaz-Morales,

O’Callaghan, Diaz, & Argumedo, 2007). In Ferrari and Diaz-Morales’s (2007b) study, the two inventories measuring arousal and avoidant procrastination (GP and AIP) showed almost identical correlations with the construct of time orientation. Fee and Tangney (2000) also showed significant relationships of the two inventories with some traits, including self-conscious affect, conscientiousness, and perfectionism. Additionally, Simpson and Pychyl (2009) revealed that the arousal-based personality traits did not provide evidence to support the conception of the arousal procrastinators. They added that GP is not a measure of arousal procrastination. Furthermore, Steel (2010) reviewed the validity of the arousal, avoidance, and decisional model by performing a meta-analysis and a factor analysis. From the findings, he suggested that there was no significant distinction among the three measures, especially between the avoidant and arousal procrastination.

Although there are some associations between the two delay types, each procrastination type may be affected by different individual factors that will be discussed in the next section. Ferrari, Doroszko, and Joseph (2005) suggested that it is important to determine the separate contributions of both procrastination typologies, or so-called “pure procrastination” types by controlling for the scale of the other scale.

Hence, the present study will obtain “pure procrastination” types to distinguish motives for each procrastination behavior.

### **Procrastination affected by Individual Factors**

Previous researchers investigated what individual factors influence procrastination behaviors. For instance, decisional procrastination predicts course and career decision-making (Burnett et al., 1989) and related to measures of low self-concept and inefficient problem-solving (Burnett, 1991). In addition, Ferrari and McCown (1994) found that obsessional thoughts had association with decisional procrastination.

Decisional procrastinators showed significantly higher self-defeating behavior patterns (Ferrari, 1994). Furthermore, Effert and Ferrari (1989) found that decisional procrastination was negatively associated with self-esteem and competitiveness, but positively associated with cognitive failures, speed, and impatience. They discussed that decisional procrastinators may underestimate the time needed to complete a task. As a result, the person must work faster to complete the task.

Regarding avoidant procrastination, avoidant procrastinators related to inefficient time management, time loss, impulsivity, neuroticism, and depression (McCown, Johnson, & Petzel, 1989). Moreover, the scores on the AIP scale reflect frequent task delays (Ferrari et al., 1995), low self-control (Ferrari & Emmons, 1995), low

self-esteem, and self-defeating behaviors (Ferrari, 1994). Furthermore, scores on the AIP were predictors of delays in filing tax returns, paying telephone bills, and returning postage paid survey (McCown & Johnson, 1989). In addition, Scher and Ferrari (2000) indicated that avoidant procrastinators seemed to suppress the recall of the previous day's tasks as a way to cope with their frequent tendency to delay tasks or simply forget what they originally planned to do.

In terms of arousal procrastination, compared to non-procrastinators, arousal procrastinators reported significantly more regret in their life on leisure time activities and community service (Ferrari, Barnes, & Steel, 2009). Furthermore, in Ferrari and Tice's (2000) studies, people with high GP had tendencies to avoid preparing for a significant, self-relevant task before an evaluation. Instead, they spent more time on unimportant, trivial tasks. Ferrari and Tice suggested that these may occur as a behavioral self-handicap, which is making barriers to manipulate the attributional uncertainty of an evaluation (Snyder, 1990).

In general, procrastinators have greater public self-consciousness, self-handicapping, information-oriented tendencies, social anxiety and lower in self-esteem (Ferrari, 1991a; 1991c). Moreover, procrastinators had strong tendency to avoid decision-making and self-identity information (Ferrari, 1991b), and subscales of

perfectionistic self-presentation (Hewitt & Flett, 1994). It must be noted that frequent procrastination are negatively associated with general self-efficacy (Ferrari, 1992b), but their verbal and abstract intelligence are not different than non-procrastinators (Ferrari, 1991a; 1991c). As Rothblum (1984) discussed, procrastination involves a complex interaction of affective, cognitive, and behavioral components. It is important to understand which procrastination form is affected by those individual factors.

In addition to those individual factors, *social desirability* must be included in this study. Social desirability is the tendency of individuals to present a favorable social image of themselves (Reynold, 1982). Social desirable bias (SDR bias) mostly occurs when responding to socially sensitive questions (King & Brunner, 2000). SDR bias has been seen in many studies on topics such as domestic violence, sexual practices, and dietary intake (Van de Mortel, 2008), and therefore researchers have to identify which data may be systematically biased toward participants' perception of being socially acceptable (King & Brunner, 2000).

Besides traditionally sensitive topics such as sexual or drug-related behaviors (Carpenter, 2009), SDR bias may also have an impact on one's responses for rather less sensitive topics. For example, Ferrari and colleagues found that there were significant relationships between social desirability and perceptions of institutional values, goal

orientation, value commitment, major satisfaction, and self-reported gains with undergraduate students (Ferrari & Cowman, 2004; Ferrari, McCarthy, & Milner, 2009).

Since procrastination is a sensitive topic to some extent, SDR bias needs to be considered in the present study.

### **Procrastination Tendencies across Demographic Characteristics**

Several researchers demonstrated that procrastination was associated with demographic characteristics in adult populations. The majority of previous studies showed no gender, age, or marital status difference of cognitive and behavioral procrastination tendencies (Harriott & Ferrari, 1996; Ferrari et al., 1995; Hammer & Ferrari, 2002; Ferrari, O'Callanhan, & Newbegin, 2005) though there were some exceptions. In Özer, Demir, and Ferrari's (2009) study, more female students reported academic procrastination than male students. Furthermore, the main reasons females procrastinated was fear of failure and laziness whereas primary reasons of that for males were risk-taking and rebellion against control. Another example is that adults in their 40s had greater tendencies in procrastination behavior than did university students in their 20s (McCown & Roberts, 1994). In addition, procrastination behavior was more common among currently married individuals than those who were divorced, widowed, or separated (Harriott & Ferrari, 1996). Regarding other demographic profiles, there

was a significant difference in procrastination by number of children, educational levels, and employment status (Harriott & Ferrari, 1996; Hammer & Ferrari, 2002; Ferrari, Doroszko, Joseph, 2005; Ferrari, Özer, & Demir, 2009).

In addition, there was a greater tendency toward procrastination in white-collar workers than in blue-collar workers (Hammer & Ferrari, 2002). The researchers described these results that job insecurity of blue-collar workers is higher than white-collar workers which produce more work effort in order to avoid job termination (Brockner, Grove, Reed, & DeWitt, 1992, as cited in Hammer & Ferrari, 2002). Among white-collar professional employees, there was no significant difference between professional status categories and arousal procrastination, however, corporate and business professional employees reported significantly higher avoidant procrastination, than the other white-collar professional employees such as sales employees and mid-level managers (Ferrari, Doroszko, & Joseph, 2005). Ferrari and colleagues suggested that mid-level managers might not relate frequently to avoidant procrastination because such delays might impact the performance of superiors and subordinates, and cause termination (Ferrari, Doroszko, & Joseph, 2005).

### **Demographics in International Studies**



The cross-cultural studies of procrastination have been conducted among adult populations in several countries, such as the United States, the United Kingdom, Spain, Turkey, Venezuela, Peru, Australia, and Italy (Ferrari & Pychyl, 2000; O'Callaghan & Newbegin, 2005; Diaz-Morales et al., 2006; Morales et al., 2006; Ferrari et al., 2007; Özer, Demir, & Ferrari, 2009; Ferrari, Özer, & Demir, 2009; Özer et al., 2012). In the study of the United States, United Kingdom, and Australia, there were significant differences of arousal and avoidance procrastination among the three countries (Ferrari, O'Callanhan, & Newbegin, 2005). Adults from the United Kingdom demonstrated higher prevalence rates of arousal procrastination than the United States adults, or the Australian adults. In terms of avoidant procrastination, again adults from the United Kingdom reported the higher prevalence rates than the United States adults or adults from Australia. For GP and AIP scores, there were no significant differences across the three countries on demographic items including age, gender, marital status, and number of children (Ferrari, O'Callanhan, & Newbegin, 2005).

Regarding procrastination studies targeted at Japanese people, Hayashi (2007) first established a Japanese version of GP (J-GPS), which seems to measure tendencies of arousal procrastination. With regard to prevalence rates of procrastination, Japanese people reported the lowest ratings on GP scale in Hayahi's study in 2007 and in 2009,

compared to other international samples from the United Kingdom, the United States, and from Australia (Ferrari, O'Callaghan, & Newbegin, 2005). The ratings on each procrastination scale of the current study then will be compared with the ratings of people in other countries in previous studies (i.e., Ferrari et al., 1995; Ferrari et al., 2007; Ferrari, Özer, & Demir, 2009). The difference between Japan and those countries listed above is that Japan is a collectivist country whereas the rest are individualist countries.

Furthermore, using the J-GPS, Hayashi investigated the relationships among trait procrastination, the automatic thoughts, depression, and anxiety of Japanese college students (Hayashi, 2009). The results showed that the influence of trait procrastination to anxiety was mediated through automatic thought of criticism of self and behavior and difficulty in achievement whereas trait procrastination on depression was mainly mediated through automatic thought of criticism of self and behavior only.

In his studies (Hayashi, 2007, 2009), demographic information included gender and age but not other variables such as marital status, educational status, number of children, and occupational types. Furthermore, how gender and age influenced Japanese procrastination behavior was not investigated because his study focused on exploring automatic thoughts and emotions following procrastination behavior. Also, other factors,

such as when and what circumstances procrastination frequently occur, were not included. Moreover, both of his studies (Hayashi, 2007, 2009) targeted at Japanese college students, and procrastination behavior of older aged people or non-students is unknown.

In Diaz-Morales, Ferrari, Argumedo, and Diaz's (2006) study, Spanish adult participants demonstrated a significant gender difference, however no significant age difference was seen in any of the three measures. In addition, there was no significant difference of number of children whereas there was a significant difference of current marital status. Married people demonstrated higher decisional procrastination.

Furthermore, a cross-cultural study of adult men and women has been conducted in six nations including Spain, Peru, Venezuela, the United Kingdom Australia, and the United States. (Ferrari, Diaz-Morales, O'Callaghan, Diaz, & Argumedo, 2007).

There was no significant gender difference, however, a significant difference for each of the six countries was found. In addition, there was a significant difference between nations on the GP scale. The further analysis demonstrated that adults from the United Kingdom had significantly stronger chronic arousal procrastination than adults from Peru, the United States, and Spain while adults from Venezuelan and Australia reported the lowest prevalence rates. Moreover, adults from the United Kingdom

claimed significantly higher chronic avoidant procrastination compared to adults from Peru, the United States, and Australia, with adults from Spain and Venezuela reported the lowest prevalence (Ferrari, et al., 2007).

Regarding Turkish adult samples, Ferrari, Özer, and Demir (2009) examined the prevalence of chronic procrastination with the three scales (GP, AIP, and DP) using Turkish adults. Results showed no significant difference of gender, age, or marital status on chronic procrastination. However, there was a significant difference of number of children, particularly on decisional procrastination. Moreover, participants with more than three children showed higher decisional procrastination tendencies than did the other groups with less number of children or none. As Harriott and Ferrari (1996) discussed, an increased number of children may cause more stress and responsibility on an individual (Ferrari, Özer, & Demir, 2009). In addition, educational levels of participants seemed to be another procrastination predictor. There was a significant education level difference on chronic procrastination. In addition, participants with less than a graduate degree showed higher rates of decisional procrastination than did those with at least a graduate degree. In terms of occupational types, administrators reported less procrastination tendencies than did their staff.

To understand more non-English speaking samples, Mariani and Ferrari's (2012) examined the demographic difference for Italian adults on the three procrastination scores. There was no significant gender difference on AIP scores. Educational level had significant differences on the three procrastination scores, particularly on AIP scores and GP scores but not on DP scores. No significant difference was found on age by educational level (Mariani & Ferrari, 2012). Further procrastination studies are needed in other non-English speaking countries with different cultures.

### **Two Constructs of Culture: Individualism versus Collectivism**

Culture is a complex concept to define. In many cases, culture is divided into two categories: individualism and collectivism (Triandis, 1995). Individualism is “a social pattern that consists of loosely linked individuals who view themselves as independent of collectives” (Triandis, 1995, p.2). Triandis explains that the individuals provide priority to their personal goals over the goals of others because they are motivated by their own preferences, rights, needs, and the contracts they have developed with other people.

In addition, Triandis (1995) suggested that *collectivism* is “a social pattern of consisting of closely linked individuals who see themselves as parts of one or more

collectives (family, co-workers, tribe, nation)” (p.2). He continues by arguing that comparing to individualists, people in collectivistic countries are more in agreement to provide their priorities to the goals of these collectives over their own personal goals because they are motivated by the norms of those collectives. They tend to lay emphasis on a sense of being connected to members of these collectives.

Collective countries include Brazil, India, Russia, and Japan. Individualistic countries include the United States, France, England, and Germany. In Western cultures where mostly individualistic countries are located, the self is seen as an incorporated whole composed of abilities, preferences, feeling states, attitudes, and attributes (Markus & Kitayama, 1991). On the other hand, in East Asian cultures, where mostly collective countries are located, self is viewed as relational, contextual, and as continued by important roles and relationship (Kanagawa, Cross, & Markus, 2001). Previous research showed that Japanese are well-known for being collectivists as opposed to individualists in the United States (Eisenstadt, 1996; Jansen, 2000). The Japanese naturally connect themselves to social contexts and are malleable in the situations. In contrast, people from the U.S. shape themselves through unique internal attributes that are stable and consistent across situations (Cousins, 1989; Kanagawa, Cross, & Markus, 2001, as cited in Miyamoto et al., 2013). Procrastination studies in the past have been

conducted mostly in individualistic countries. Approximately 70 percent of the world population is collectivist (Triandis, 1995), therefore, it is important to investigate prevalence rates of chronic procrastination more in collectivistic countries.

#### **Four Constructs of Culture: Vertical vs. Horizontal Dimensions of Individualism and Collectivism**

Since Hofstede (1980) considered individualism and collectivism opposite, the majority of researchers have also believed it. However, Triandis (1995) pointed out that it is not easily dividable. People may be high or low on both, or high in one and low in the other. For instance, the U.S. individualism is not the same as Swedish individualism (Triandis & Gelfand, 1998).

Markus and Kitayama (1991b) identified different types of self. For instance, they used the term individualism parallel as an independent and separate construal of the self. Likewise, they used the term collective parallel as holistic, connected, and interdependent construal of the self. In referring to their terms, Triandis (1995) described that there are four kinds of self: independent or interdependent and same or different. As he also identified more than 60 culture-specific attributes himself, Triandis (1995) categorized four main constructs of culture (Singelis, Triandis, Bhawuk, & Gelfand, 1995). They are *Horizontal Collectivism* (interdependent/same), *Vertical*

*Collectivism* (interdependent/different), *Horizontal Individualism* (independent/same), and *Vertical Individualism* (independent/different). In both individualist and collectivist cultures, inequality is acceptable and rank has its privileges in the vertical dimension. On the other hand, people are expected to be similar on most attributes, especially on status in the horizontal dimension (Triandis, 1995).

More specifically, Horizontal Collectivism (H-C) describes the conception of the self as a part of the in-group and seeing all members of the in-group as the same and equality is emphasized (Triandis, 1995). The horizontal-collectivist culture is historically demonstrated by the Israeli kibbutz (Erez & Earley, 1987, as cited in Shavitt, Torelli, & Riemer, 2011). The H-C people view themselves as being similar to others and lay emphasis on common goals in a group. They tend to see themselves as a part of the group. Therefore, the self is interdependent and being independent is important (Triandis, 1995; Shavitt, Torelli, & Riemer, 2011).

Vertical Collectivism (V-C) describes the conception of the self as a part of in-group and accepting inequalities within the in-group (Triandis, 1995). In vertical-collectivist cultures such as Korea, Japan, and India, people lay emphasis on honor and benefit of the in-group and willing to comply with authorities and sacrifice their personal goals (Shavitt, Torelli, & Riemer, 2011). They think the self is different



from the self of interdependent and the self of others. Serving for the in-group is so important that sacrificing and inequality is accepted (Triandis, 1995).

Moreover, Horizontal Individualism (H-I) describes the conception of an autonomous individual and equality is stressed (Triandis, 1995). In horizontal-individualist societies such as Sweden, Denmark, Norway, and Australia, people prefer to be unique and different from groups (Feather, 1994; Triandis & Singelis, 1998). Still, they view themselves being at an equal status with other people in the group and not interested in having high status (Feather, 1994; Nelson & Shavitt, 2002). For the H-I people, the self is independent and the same as the self of others (Triandis, 1995).

In contrast, Vertical Individualism (V-I) describes the conception of an autonomous individual and acceptance of inequality (Triandis, 1995). In vertical-individual cultures such as the U.S., Great Britain, and France, people value being independent and view themselves as different from others (Triandis, 1995; Shavitt, Trelli, & Riemer, 2011). They are competitive and want to do their best (Triandis, 1995). In addition, people are interested in gaining positions of high status and distinguishing themselves from others through achievement, power, and competition, and inequality is expected (Triandis, 1995; Shavitt, Trelli, & Riemer, 2011).

Briefly, people in: H-C may be cooperative, V-C may be dutiful, H-I may be unique, and V-I may be achievement-oriented. V-C is considered general tendencies of the many Japanese population; however, there are some evidences of shifts toward individualism (Markus & Kitayama, 1991b; Iwao, 1993). For example, young Japanese people seemed to be moving to more horizontal and individualism directions compared to older generation. Markus and Kitayama (1991b) described that among Japanese people, H-C may place high because being different may create a sense of embarrassment. V-I may also be high due to a strong sense of hierarchy in the society where special required language forms and other social norms for each type of status are needed.

Although there are various ways to distinguish cultural variations, Singelis et al. (1995) proposed that measuring these four constructs is a more desirable method than either the more abstract constructs of individualism and collectivism, or the basic elements of these constructs such as family integrity, self-reliance, and hedonism. They also suggested that constructs of collectivism and individualism are related to health, social behavior, and social phenomena.

### **Procrastination and Different Behavioral Patterns in Cultures**

Furthermore, Triandis (1995) suggested that collectivists may often feel difficult to make decisions whereas individualists may decide quickly. Due to the difference of their decision making process, collectivists tend to take time to make decisions and individualists often make decisions inadequately because too few people were involved in the process. Decision-making may be based on group agreement among collectivists while it may be based on majority vote among individualists.

In terms of collectivists in particular, Gaenslen (1986) argued that decision makers who realize the importance of the evaluation criteria for their careers may view decision-making situations as opportunities to demonstrate the proper behavior toward their colleagues. It is considered that since each organization, community, or any other sort of groups have their own evaluation criteria, it may be important to respect other's thoughts during the decision making process. Therefore, people in collectivist cultures than those in individualist societies might have a stronger tendency to be chronic decisional procrastinators.

In the process of investigating various factors of cultures, Hofstede (1980) found out that some behavioral patterns can be seen more often in individualistic culture and others are more common in collectivistic culture. The relationship between behavioral patterns and cultural constructs may be a predictor of types of procrastination.

For example, individualists are low in *uncertainty avoidance*. Uncertainty avoidance is a tendency of being tidy and structured in one's lifestyle. It contains certain expectations and rules from the society (Hofstede, 1980). This tendency can be seen more often in collectivists such as Japanese people. They tend to have high uncertainty avoidance because they prefer to be precise, to be punctual, and to plan everything carefully to avoid future uncertainty. Dealing with situations of uncertainty creates anxiety and leads to procrastination. Therefore, uncertainty avoidance also relates to task avoidance (Hofstede, 1984b).

It seems that collectivists and non-procrastinators share similar characteristics such that strong uncertainty avoidance. From these relations, people in collectivist cultures may show lower prevalence of chronic avoidant procrastination than those in individualist cultures.

In addition, people in collectivism cultures put a great emphasize on groups and try to maintain harmony and loyalty within a group or in public (Hofstede, 1994). On the other hand, people in individualism cultures are more likely to be self-centered and emphasize their individual goals, success or achievements at work or private wealth (Hofstede, 1994; Hoecklin 1995). Additionally, Triandis (1995) discusses the advantages and disadvantages of collectivism and individualism syndrome. According

to his study, “pure” individualism indicates that selfishness, anomie, crime, and narcissism. Moreover, “pure” collectivism means ethnic cleansing, oppression of human rights, and exploitation of the group’s members for the benefit of the in-group. In terms of sensation-seeking behavior, characteristics in both collectivism and individualism seem to trigger one’s arousal experiences. For that reason, prevalence rates of chronic arousal procrastination among people in collectivism societies may be similar of those in individualism societies.

### **Rationale**

The prevalence of procrastination was studied in many countries, mostly in the individualistic societies, such as the United States, the United Kingdom, Australia, Spain, Peru, Venezuela, and Turkey (Ferrari & Pychyl, 2000; O’Callaghan & Newbegin, 2005; Diaz-Morales et al., 2006; Morales et al., 2006; Ferrari et al., 2007; Özer, Demir, & Ferrari, 2009; Ferrari, Özer, & Demir, 2009, Özer et al., 2012). In addition, although Hayashi (2007, 2009) has already conducted a research about procrastination behavior of Japanese to some extent, participants were limited only to college students and procrastination tendencies by demographic characteristics were not investigated. Also, only arousal (GP) procrastination was explored. Therefore, the purpose of this study is to investigate the prevalence of procrastination in a collectivistic country, especially

targeted to Japanese adult men and women and how demographic characteristics will be related to their procrastination behavior.

To determine the latest culture in Japan, Triandis's (1995) four constructs of Horizontal Collectivism, Vertical Collectivism, Horizontal Individualism, and Vertical Individualism will be explored. By doing so, whether or not types of cultural self affect their procrastination behaviors may be discovered. In addition to this analysis, the study will discover the prevalence rates of procrastination in relation to collective cultures and compare the results with previous data collected in the individualistic countries.

### **Statement of Hypotheses**

Hypothesis 1: The prevalence rates of chronic decisional procrastination among Japanese people will be higher than that of on people in individualistic countries.

Hypothesis 2: Participants who lean to the collectivism dimension on Individualism-Collectivism scale will be stronger decisional procrastinators than do lower on individualism dimension.

## METHOD

### Participants

Participants were Japanese adults who lived in Japan at the time of data collection. A total of 2,610 adults residing in Japan participated in the present study; 1,047 (40.9%) were men and 1,516 (59.1%) were women. 39 individuals did not respond to demographic questions. Seven persons were eliminated because they were under 20 years of age. Therefore, the final sample was 2,602. After the elimination, the age range of participants was between 20 and 100 ( $M = 44.27$ ,  $SD = 1.91$ ).

The current occupations of participants were as follows: 726 were office workers (28.7%); 399 were students (15.9%); 347 were part-time employees (13.7%); 305 were self-employed (12.1%); 240 were housewives (9.5%); 256 were unemployed (10.1%); 92 were company executives (3.6%); 51 were full-time worker (2.0%), and 107 were other (4.2%). The range of the number of people who have supervised others was between 1 and 440. Those who have been supervised over 10 or fewer people were the biggest category ( $n = 457$ , 76.56%), 11-30 were 100 (16.95%), and 33 or more was 40 (6.78%).

Regarding educational level, 134 (5.3%) had less than a high school education, 1146 (45.6%) held a high school diploma, 285 (11.3%) were vocational/technical school graduates, 315 (12.5%) were community college graduates, 561 (22.3%) were college or university graduates, 68 (2.7%) were post-graduate school graduates, and 3 (0.1%) said "other".

In terms of marital status, a majority of the participants ( $n = 1469$ , 59.1%) were married, while 122 (4.9%) were divorced or separated, 101 (4.1%) were widowed and the rest ( $n = 794$ , 31.9%) were single. Within those who were married, 318 (24.3%) have been married for 10 years or fewer, 325 (24.8%) have been married for 11 to 26 years, 407 (31.1%) have been married for 27 to 41 years, and 258 (19.7%) have been married for 42 years or more. The married years of those participants ranged from 1 to 77 years.

For those who had children, about 71.6% ( $n = 1077$ ) of the participants had 1 or 2 children and the rest had 3 or more ( $n = 426$ , 28.4%). More specifically, a majority of the participants reported they had 1 son ( $n = 658$ , 63.1%) or 1 daughter ( $n = 655$ , 62.9%) while about 30% of the participants had 2 sons ( $n = 323$ , 31.0%) or 2 daughters ( $n = 327$ , 31.4%). The rest had 3 or more sons ( $n = 61$ , 5.9%) or daughters ( $n = 60$ , 5.8%). The maximum number of children was 8. With regard to living areas, 35.8% ( $n$



= 888) lived in urban area and 57.1% ( $n = 1,416$ ) lived in suburbs while 7.2% ( $n = 178$ ) lived in rural areas.

### **Instruments**

**Psychometric scales.** The participants filled out the demographic information including age, gender, marital status, number of children, educational status, and occupational types. They also filled out some scales as follows.

***Decisional Procrastination Scale (DP; 5 items; Mann, 1992).*** The DP scale measures decisional procrastination which may be described as the purposive delay in making decisions within some limited time frame. People who score high on the DP scale may be considered decisional procrastinators (Effert & Ferrari, 1989). The sample items include, “I put off making decisions” and “I delay making decisions until it is too late.” The scale uses a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree), and that was translated and back-translated into Japanese. In Mariani and Ferrari’s (2009) study, the internal consistency of the scale was Cronbach alpha 0.79 ( $M = 10.42$ ,  $SD = 4.03$ ). In the present study, the internal consistency of the DP scale was Cronbach alpha 0.64 ( $M = 14.72$ ,  $SD = 3.45$ ), which was moderately high.

***Japanese version of General Procrastination Scale (J-GPS; 13 items; Hayashi, 2007).***

Lay’s General Procrastination Scale (GP) (Lay, 1986) has 20 items. Hayashi (2007)

developed J-GPS, which is a translation from Lay's General Procrastination Scale (GP) (Lay, 1986) although 7 items were eliminated after a factor analysis was conducted.

This short GP scale was used for the current study. The GP scale measures slow behavior across different situations related to personality variables such as low self-control, rebelliousness, and extraversion. Sample items include: "I am continually saying I'll do it tomorrow" and "When preparing to go out, I am seldom caught doing something at the last minute." This questionnaire uses a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree). Cronbach's alpha for the GP scale was 0.84 ( $M = 44.47$ ,  $SD = 10.66$ ) (Mariani & Ferrari, 2012) whereas that for the J-GPS was 0.87 ( $M = 40.95$ ,  $SD = 15.73$ ) (Hayashi, 2007). Hayashi (2007) concluded that J-GPS had sufficient reliability and validity. In the present study, the Cronbach's alpha for the J-GPS was 0.83 ( $M = 34.92$ ,  $SD = 7.5$ ), which indicated a high reliability of this scale.

***The Adult Inventory of Procrastination (AIP; 15 items, McCown & Johnson, 1989).***

Participants also completed AIP scale, which is designed to measure individuals' behavioral tendency to delay either beginning or completing tasks. The items include "I don't get things done on time" and "I am not very good at meeting deadlines." These items use a 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree) that will be translated and back-translated into Japanese. In terms of the reliability, in Ferrari

et al.'s (2007) studies for example, Cronbach's alpha of the AIP scale was 0.86 ( $M = 35.33$ ,  $SD = 7.29$ ), indicating good internal consistency and the test-retest reliability after six months was 0.76 (Mariani & Ferrari, 2012). In the current study, Cronbach's alpha for the AIP was 0.83 ( $M = 39.91$ ,  $SD = 8.54$ ), which is considered a high reliability of this scale.

***A short version of Marlowe-Crown Social Desirability scale (MCSD; 13 items;***

**Reynold, 1982).** Social desirability is one's tendency to present a favorable social image of themselves (Reynold, 1982). MCSD may help researchers to identify which data may be systematically biased toward participants' perception of being socially acceptable (King & Brunner, 2000, as cited in Van de Mortel, 2008). The original Marlowe-Crown Social Desirability scale is 33 items ( $r = 0.88 - 0.91$ ) with a set of socially desirable but improbable statements (King & Bruner, 2000). The short version of MCSD is a 13-item true or false questionnaire with acceptable reliability ( $r = 0.74 - 0.82$ ) correlates with the original scale (Van de Mortel, 2008). The items include "I have never been irked when people expressed ideas very different from my own" and "I have never deliberately said something that hurt someone's feelings."

Ferrari, Bristow, and Cowman (2005) investigate the role of social desirability tendencies in student perceptions of institutional mission and values. The revised

13-item MCSD Scale in their study maintained strong internal reliability ( $r = 0.67$ ,  $M = 6.32$ ,  $SD = 2.84$ ). The scale was translated and back-translated into Japanese.

***Individualism and Collectivism Scales (IC; 16 items, Triandis & Gelfand, 1998).***

This is a modified version of Singelis et al. (1995) 32-item questionnaire with the 7-point Likert scale (from 1 = strongly disagree to 7 = strongly agree). As Triandis (1998) suggest, there are different kinds of individualism and collectivism. Each variable contains 4 items. For example, H-I includes “My personal identity, independent of others, is very important to me,” and “I rely on myself most of the time.” V-I includes “When another person does better than I do, I get tense and aroused,” and “Competition is the law of nature.” H-C includes “The well-being of my coworkers is important to me” and “If a co-worker gets a prize I would feel proud.” Lastly, V-C includes “It is important to me that I respect the decisions made by my groups” and “Family members should stick together, no matter what sacrifices are required.” In the present study, the Cronbach’s alpha for the IC scale was 0.71 ( $M = 4.64$ ,  $SD = 1.34$ ), which is moderately high internal consistency.

All items were translated from English to Japanese, and then back-translated into Japanese.

**Translation Process**

The scales of, DP, AIP, IC, and MCSD (the short version) scales are developed in English and therefore were translated and back-translated into Japanese. Regarding Lay's GP, it had already been translated by Hayashi (2007) and newly developed as J-GPS, which was used in this study. J-GPS has 13 items instead of 20 items. For the present study, the researcher used Beaton, Bombardier, Guillemin, and Ferraz's (2002) study as a guide for the translation process of these scales. The translation process was performed by three bilingual translators, including the researcher herself. By doing so, they compared their versions to identify discrepancies such as ambiguous wording and other problems. The written survey in Japanese was developed after a discussion of two translators. The new survey was then back-translated to English by the third translator who was blind to the original survey. Finally, a final form of survey was developed in Japanese by the three translators. The translated survey was compared with the original survey to ensure the validity of the translation.

## **Procedure**

**Participant recruitment.** Participants were asked to complete a brief demographic sheet. They were also asked to complete Mann's (1982) Decisional Procrastination (DP) scale, Lay's (1986) General Procrastination Scale (GP), McCown and Johnson's (1989) Adult Inventory of Procrastination (AIP), Triandis and Gelfand's

(1998) Individualism and Collectivism scales (IC), and Reynold's (1982) short version of the Marlowe-Crown Social Desirability scale (MCSD). Japanese versions of demographic items and scales listed above were used for this study.

**Pilot test.** Prior to the actual study, a pilot test was performed with a paper-and-pencil survey for about ten participants to assess survey items for use throughout the study. This helped the researcher to ensure that the survey instructions and question items were understandable. The pilot study indicated the survey was understandable, acceptable, readable, and appropriate. The information obtained through the pilot test was incorporated into the main study.

**Data collection.** The survey was developed both online and in paper-and-pencil formats. The survey tool Qualtrics was used for the online format. The survey questions were entered into the online form, and a link was distributed through the social networking site Facebook. On Facebook, opportunity sampling, which the survey was posted on the researcher's wall, was used. Because not everyone had account on Facebook or even access to the Internet, there might be significant demographic differences such as age, income, and education between people who had both Internet access and Facebook account, and those who did not. To alleviate this disadvantage, the snowball sampling technique was used. It provided the participant recruiting

information at the end of the survey to invite at least two other people who might potentially participate in the study. Because initial participants were likely to nominate people that they knew well, it was extremely possible that they shared the same traits and characteristics. Therefore, the obtained sample might not be representative of the entire population. In addition to the online survey, the paper-and-pencil surveys were randomly distributed. Utilizing these combined methods may have been useful to relieve the disadvantages noted above to recruit various people including those who were not easily accessible.

The paper-and-pencil surveys were distributed to people who lived in the large-, medium-, and small-sized cities. Participants were recruited by the researcher during a two-month period from universities, corporations, and local companies from the three cities. In terms of self-reported residence, most participants ( $n = 1,418$ , 57.1%) reported they lived in suburban settings or urban cities ( $n = 887$ , 35.7%). 178 (7.2%) reported they lived in rural areas. In addition to the simple recruiting method, again, the snowballing sample technique was applied. Participants who already filled out the survey recruited potential participants from among their acquaintances. Therefore, participants for the current study were from 28 out of 47 prefectures, nearly 60% of the

country. This helped to reach hidden populations, covered areas from north to south, including 7 out of 8 regions in Japan.

Participants were instructed that their responses were to be kept strictly anonymous and that there was no person identifying information collected in the survey. When they agreed to participate in the study, participants read a standard script informing them that their involvement in the study was completely voluntary. After the sufficient number of participants completed the survey, the data was entered manually from the paper-and-pencil survey into Predictive Analysis Software (PASW) for data analysis. The data from the Qualtrics website was not successfully downloaded, therefore, it had to be entered manually.



## Results

### Preliminary Analysis

**Internal consistency.** The internal consistency of all three scales in this study was performed. More specifically, Cronbach's alpha of the *Decisional Procrastination* (DP) scale was 0.70, and the short version of the *Marlowe-Crowne Social Desirability Scale* (MCSD) scale was 0.65. For the Individualism and Collectivism (IC) Scales, Cronbach's alpha was 0.64 for the Individualism scale and 0.76 was for the Collectivism scale. Taken together, all the scales had acceptable internal consistency, ranging from 0.64 to 0.76.

**Social desirability.** People with high social desirability have the tendency to respond with socially appropriate answers when filling out surveys, so that they may look more favorable to others (Ones, Viswesvaran, & Reiss, 1996). The inventories used in the present study include items that may be considered by a respondent to yield socially desirable responding. Therefore, it was important to examine *social desirability* (measured by Reynolds' 1982 MCSD) before performing any primary analysis to ensure that there was no bias toward their responses.

Zero-order correlations among MCSD scores and Horizontal Individualism (H-I), Vertical Individualism (V-I), Horizontal Collectivism (H-C), and Vertical Collectivism

(V-C) scales were performed with DP scores. Table 1 presents the zero-order correlations between scales. As noted in Table 1, there were significant correlations between MCSD scales and DP scale, and between MCSD scales and *VI* scale, but not with the other three IC scales. Consequently, all further analyses were controlled for social desirability tendencies (Table 1).

Table 1

*Zero-Order Correlations among Decisional Procrastination Scale and Subscales*

Measures	<i>DP</i>	<i>H-I</i>	<i>V-I</i>	<i>H-C</i>	<i>V-C</i>	<i>MCSD</i>
<i>DP</i>	-					
<i>HI</i>	.067***	-				
<i>VI</i>	.044*	.231***	-			
<i>HC</i>	.021	.194***	.197***	-		
<i>VC</i>	.005	.187***	.238***	.249***	-	
<i>MCSD</i>	-.250***	-.028	-.103***	.025	.025	-

Note. *DP* = Decisional Procrastination scale; *H-I* = Horizontal Individualism scale; *V-I* = Vertical Individualism scale; *H-C* = Horizontal Collectivism scale; *V-C* = Vertical Collectivism scale; *MCSD* = a short version of Marlowe-Crowne Social Desirability scale; \*  $p < .05$ ; \*\*\*  $p < .001$

**Demographic characteristics difference.** A gender [men vs. women] by age [20-35 vs. 36-59 vs. 60 years or older] analysis of covariance (ANCOVA; controlling for social desirability) was performed on DP scores. Table 2 presents mean scores for gender and age. There was no significant main effect of gender,  $F(1, 150) = 0.18, p = .90$ , or age,  $F(2, 150) = .249, p = .78$ . In addition, no interaction effects for gender and age were found,  $F(2, 150) = 0.37, p = .97$ .

Table 2

*Main and Interaction Effects of Chronic Decisional Procrastinators by Personal Characteristics*

<i>Gender and Age</i>					
Characteristics		<i>n</i>	%	<i>M</i>	<i>SD</i>
Gender	Age				
Men	20-35	56	74.6	20.98	1.37
	36-59	11	14.6	20.73	1.27
	60+	8	10.6	21.00	1.20
Women	20-35	40	48.8	20.95	1.22
	36-59	23	28.0	20.83	1.15
	60+	19	23.2	21.00	1.20
Total	20-35	96	61.1	20.97	1.30
	36-59	34	21.7	20.79	1.18
	60+	27	17.2	21.00	1.18
<i>Gender and Marital Status</i>					
Characteristics		<i>n</i>	%	<i>M</i>	<i>SD</i>
Gender	Marital status				
Men	Single	46	67.6	20.98	1.34
	Not married	22	32.4	20.77	1.15
Women	Single	31	38.8	20.93	1.10
	Not married	49	61.2	20.84	1.12
Total	Single	77	52.0	20.96	1.24
	Not married	71	48.0	20.82	1.23

Next, a second gender [men vs. women] by marital status [single vs. not married])

ANCOVA (controlling for social desirability) was performed on DP scores. Four types

[single vs. married vs. divorced/separated vs. widowed] of marital status were grouped

into two categories before the analysis because some samples were too few. Table 2

presents the mean scores on these variables.

There was no significant main effect of marital status,  $F(2, 141) = .362, p = .70$ , nor interaction effect between gender and marital status,  $F(2, 141) = .540, p = .58$ .

Moreover, several ANCOVAs (controlling for social desirability) were conducted on DP scores as specifically described below. Before running the analysis, 7 educational levels were grouped into 3 categories, because some samples were not enough for an analysis.

First, a gender [men vs. women] by educational levels [below high school vs. high school vs. above high school] ANCOVA (controlling for social desirability) was conducted. There was no significant difference on DP scores,  $F(2, 141) = .362, p = .70$ .

Next, a gender [men vs. women] by living area [urban vs. suburb vs. rural area] ANCOVA (controlling for social desirability) analysis showed no significant difference on DP scores,  $F(2, 151) = .701, p = .50$ . Then, a gender [men vs. women] by number of children [none, 1, 2, 3 or more] ANCOVA (controlling for social desirability) was conducted on DP scores. The result indicated that there was no significant difference on DP scores,  $F(3, 151) = .909, p = .44$ . In terms of occupation, two analyses were performed. A gender [men vs. women] by occupation [office worker, company executive, part-time employee, self-employee, student, housewife, unemployed,

full-time employee] ANCOVA was first performed. The results revealed that there was no difference of occupation type,  $F(7, 146) = 1.087, p = .38$ . Then, gender [men vs. women] by number of years they have worked [1-10 years vs. 11-30 years vs. 31-60 years] ANCOVA was conducted. There was no significant difference on DP scores,  $F(1, 25) = 1.087, p = .38$  (Table 3).

Table 3

*Mean Ratings on Decisional Procrastination Scores by Personal Characteristics*

Chronic Decisional Procrastinators				
Characteristics	<i>n</i>	%	<i>M</i>	<i>SD</i>
Living areas				
Urban	54	35.1	20.91	1.15
Suburbs	88	56.5	20.99	1.37
Rural	13	8.4	20.54	0.78
Children				
None	103	64.8	20.94	1.28
1	11	6.92	20.45	0.82
2	26	16.4	21.15	1.29
3 or more	19	11.9	20.79	1.18
Occupation types				
Office worker	32	20.4	21.00	1.27
Company executive	5	3.2	20.20	0.45
Part-time employee	18	11.5	20.83	1.04
Self-employed	12	7.6	20.17	0.58
Student	57	36.3	20.96	1.44
Housewife	17	10.8	21.18	1.07
Unemployed	10	6.4	21.20	1.04
Full-time employee	3	1.9	20.67	1.55
Characteristics	<i>n</i>	%	<i>M</i>	<i>SD</i>

Worked years				
1-10	122	77.7	20.89	1.23
11-30	29	18.5	21.07	1.23
31-60	6	38.2	20.33	0.52

### Primary Analysis

**Hypothesis 1.** The prevalence of chronic decisional procrastination among Japanese people will be higher than that of people in individualistic countries.

Table 4 showed that on average Japanese people in the present study reported higher ratings on DP scores ( $M = 14.71$ ,  $SD = 3.42$ ) than that of some samples in individualistic countries such as the Spanish sample ( $M = 11.37$ ,  $SD = 4.9$ ), Italian sample ( $M = 10.42$ ,  $SD = 4.03$ ), and U.S. samples ( $M = 10.90$ ,  $SD = 4.3$ ;  $M = 11.86$ ,  $SD = 3.86$ ) (Harriott & Ferrari, 1996; Diaz-Morales, Ferrari, & Cohen, 2008; Ferrari & Dovidio, 2000; Hammer & Ferrari, 2002; Mariani & Ferrari, 2012).

In terms of prevalence rates, only a few studies performed prevalence analyses for DP scale. For instance, 19.3% ( $N = 41$ ) of participants in the United States claimed to be indecisive, when DP scores were summed from ratings of 4.00 or higher (Harriott & Ferrari, 1996). In addition, 17.5% ( $N = 358$ ) of Turkish sample were found to be high decisional procrastinators when the z-scores on the DP scale were regressed against other scale, and vice versa (Ferrari, Özer, & Demir, 2009).

Table 4

*Means, Standard Deviations, and Internal Consistency on Decisional Procrastination Scale in Japan and Individualistic Countries*

<i>Countries</i>	<i>M</i>	<i>SD</i>	<i>Cronbachs' Alpha</i>
1. USA	10.90	4.30	0.80
2. USA	11.86	3.86	0.70
3. USA	12.40	5.02	0.87
4. Spain	12.46	4.33	0.78
5. Italy	10.42	4.03	0.79
6. Japan	14.11	3.63	0.70

Note. 1. Harriott & Ferrari (1996); 2. Ferrari & Dovidio (2000); 3. Hammer & Ferrari (2002); 4. Diaz-Morales, Ferrari, & Cohen (2008); 5. Mariani & Ferrari (2012); 6. Japanese sample in the present study

While previous research did not establish a guideline, one was needed to define “chronic” indecision (aka, chronic *decisional procrastination*) in the present study.

There are several ways to set cut-off values such as percentiles, quartiles, and standardized methods. The former two methods use raw scores whereas the latter uses standardized scores to create upper and lower limits. The percentiles and quartiles may be preferred for interpreting scores of individuals, though they may not be suitable for investigating a general tendency or trait of samples (see Wang & Chen, 2012).

The standardized methods have a number of advantages compared to percentiles and quartiles (Wang & Chen, 2012; Jorge & Doris, 2014). A major advantage of the standardized method is that they are calculated subjected to the distribution of the reference population such as mean and standard deviation which also reflect the

reference distribution. The second major advantage may be that z-scores describe the status of the entire population directly without resorting to a subset of individuals (Wang & Chen, 2012). Consequently, a standardized method using z-scores was applied in the current study.

In many prevalence studies, z-score cut-offs are set at -1.5 to +1.5 or -2.0 to +2.0 (i.e., Schmidt, 1996; Wimmer & Dominick, 2000). However, the cut-off value of -2.0 to +2.0 might be too extreme in some fields because it is based on the 95% rule (Wang & Chen, 2012). Some researchers (i.e., Schoenberga, Dawsonb, Duffc, Pattond, Scotte, & Adamse, 2006; Green & Rabiner, 2013) used +1.5 z-score as a cut-off point to detect the persons with strong tendencies on a particular trait. Therefore, in the present study, a cut-off value is set at 1.5 z-score of DP scores. To do so, DP scores were converted to standardized Z residual scores. Then, the percentage of people who obtained a Z residual score  $> 1.5$  on DP scores was calculated. In the present sample, 6.4% ( $N = 167$ ,  $Mage = 37.0$  years old) of Japanese adults out of a total sample of 2603 reported being Indecisive, with 86 women (52.1%) and 79 men (47.9%).



To investigate a rationale of the contradictory relation between the mean scores on the DP scale and the prevalence rate, the sample distribution was explored (Figure 1). The skewness of DP scores  $-.260$  ( $SE = .048$ ) was negatively skewed indicating an asymmetric tail extending toward more negative values. The kurtosis of  $-.097$  ( $SE = .096$ ) was also negative indicating a wider peak around the mean and thinner tails. These results may have described the contradictory relationship between low prevalence rates of Japanese people with high ratings of DP scores.

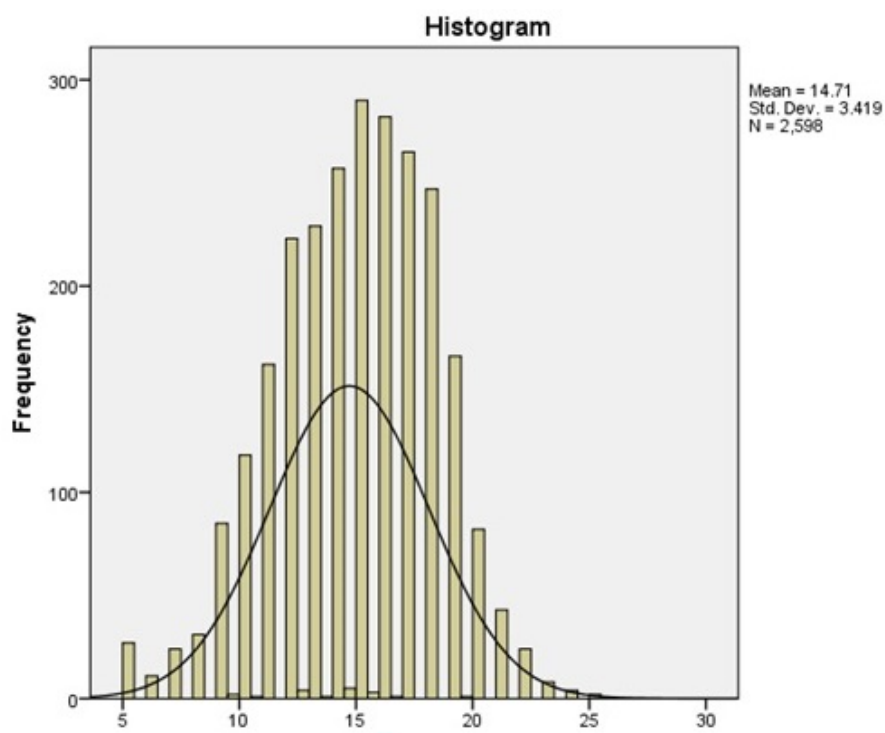


Figure 1. Histogram of Decisional Procrastination Scores

Since only a few prevalence studies have focused on sole DP scale, it was difficult to make comparisons among the current sample and various individualistic countries.

Although the results did not sturdily give enough evidence to support the first hypothesis, the tendencies of DP ratings for Japanese sample were explored for the first time.

**Hypothesis 2.** Participants who lean to the collectivism dimension on IC scales will be stronger decisional procrastinators than those lower on individualism dimension.

With regard to correlations between IC scores and DP scores, a medium-split was conducted to label the people above the median as high scorers on two dimensions of IC scale, which was also used in Triandis et al. (1990). The medium scores of H-I, V-I, and V-C were 17, and HC was 18. Participants who scored 17 or above on H-I and V-I were categorized into strong individualists. Those who scored 17 or above on VC and 18 or above on HC were categorized into strong collectivists.

An ANCOVA revealed that there was no significant mean difference between strong Individualists ( $M = 15.56$ ,  $SD = 3.65$ ) and strong Collectivists ( $M = 14.74$ ,  $SD = 3.54$ ) while controlling for MCSD scale ( $M = 14.92$ ,  $SD = 3.46$ ),  $F(1, 151) = 1.468$ ,  $p = .435$ . Therefore, the results did not support the second hypothesis (Table 5).

Table 5

*Descriptive Statistics of Two Constructs of Individualism-Collectivism Scale and Difference in Decisional Procrastination Scores*

<i>Two Constructs of IC Scales</i>	<i>N</i>	<i>%</i>	<i>M</i>	<i>SD</i>
<i>Strong Individualists</i>	786	42.6	14.92	3.46
<i>Strong Collectivists</i>	1060	57.4	14.74	3.54

## **Discussion**

One purpose of the present study was investigating the prevalence of indecision (decisional procrastination) on decision making among Japanese adults, as an example of collectivistic countries in Asia. The hypotheses of this study were related to cross-cultural comparisons between individualists and collectivists, and comparisons within Japanese society.

### **Hypothesis Testing**

The first hypothesis of this study was that the prevalence rates of chronic decisional procrastination among Japanese people would be higher than that of people in individualistic countries. Results found that there was a lower number of Japanese people who were classified as chronic decisional procrastinators compared to some other collectivistic countries, such as Turkey (Ferrari, Özer, & Demir, 2009) or more individualistic countries, such as the United States (Harriott & Ferrari, 1996). These were opposite to the hypothesis. Results may differ depending on which prevalence analysis is used; whether to use raw scores, z-scores, or to set a cut-off point to detect chronic decisional procrastinators.

Regardless of the low prevalence rate, the average decisional procrastination scores in the present study were around a neutral scale of 3 (i.e., “sometimes false/true for

me”) on 5-Likert scales, which was higher than other prevalence studies that were conducted in individualistic countries including the U.S., Spain, and Italy (Ferrari & Dovidio, 2000; Diaz-Morales, Ferrari, & Cohen, 2008; Mariani & Ferrari, 2012). This seems to be a contradiction with the low prevalence rate noted above. Two main reasons may have influenced the results.

One possible rationale may be the Japanese tendency for avoiding extreme responses on self-reported surveys. According to some researchers, response styles on Likert scales in collectivist cultures, such as Japan and China, showed a greater preference for midpoints and less preference for extreme values than those from the individualist cultures as the U.S. (Chen, Lee, & Stevenson, 1995; Lee, Jones, Mineyama, & Zhang, 2002).

Another rationale might be based on characteristics of Japanese people who value harmony as a group (Hofstede, 2009). Participants in the current study were informed that the study was conducted for a Japanese graduate student, who was going to school in the United States. They were also informed that her study targeted Japanese people. Therefore, it is possible that participants unconsciously gave average responses to fit into a group of the Japanese participants. These two rationales, then, describe the contradictory statements noted above.

Furthermore, the second hypothesis of this study was that participants who leaned to the collectivism dimension on Individualism-Collectivism scales would have a stronger tendency to procrastinate than those who were lower on individualism dimension when making decisions. Persons who had stronger individualistic tendencies were not significantly different on decisional procrastination scores compared to those who had little tendencies on individualistic characteristics (and vice versa), indicating no evidence to support the second hypothesis. Brew, Hesketh and Taylor (2001) noted that people in Japan consider social obligations, honoring trust, and harmonious relations more carefully when making decisions, which, in turn, makes decision-making more complicated. Thus, the process is longer to reach the final decision (Hawrysh & Zaichkowsky, 1990). Participants in the current study might have acted as a Japanese person on the basis of their normative understanding of how such a Japanese person should be profiled. Consequently, they did not act as an individual who were more individualistic or more collectivistic.

Consensus decision-making, which seeks the consent of all participants in a group, is a favored style among Japanese adults (Noda, 1985). Although some identified themselves more as individualists while others identified themselves more as collectivists, Japanese people in general have a strong concern for the well-being of

their peers, subordinates, and supervisors. Because they have higher needs for affiliation than Western people, Japanese people living in Japan are willing to bear with the time-consuming consensus decision-making (Martinsons & Davison, 2007). Japanese adults who identified themselves more as individualists might have reflected a different decision-making style if they were living in a more individualistic society than their native Asian culture. In contrast, because they were told to fill out a survey as a Japanese person, they might put greater emphasis on their identity as a member of Japanese survey sample, rather than a distinct individual. Therefore, it is suggested that future researchers should work with different survey methods. Further details are explained later in another section.

### **Social Desirability**

Results suggested that there were significant correlations between Social Desirability scales and Decisional Procrastination scale. The Social Desirability scales were not related to the Decisional Procrastination scale in previous procrastination study (Ferrari & Pychyl, 2007). Some researchers found that among 12 countries, social desirability response bias for Japanese sample was the third highest (after Columbia and Ecuador), whereas the U.S., Ireland, and Australia were three countries reporting the lowest social desirability tendencies (Bernardi, 2006).

One reason for this might be due to a typical characteristic of collectivistic cultures. During survey interviews, people from collectivistic societies such as traditional Asian cultures tend to show higher social desirability because participants try to maintain positive relations with their interviewer (Jones, 1983; Johnson, 1998b). In the present study, referring explicitly to the subject matter of the study was avoided. Participants were only told that the study was about “Japanese lifestyle.” Perhaps, those persons who completed the survey actually informed the survey content to other, potential participants. This possibility may create more chances of social desirability bias on the potential participants when filling out a survey.

The other reason might be specific to Japanese society. Most Japanese people seem to be afraid of being ashamed or embarrassed (Taguchi, 1996). Therefore, it is possible that participants in the present study reflected in a fear that a delay in making decisions might be perceived as shameful by other Japanese people. Consequently, the participants might have attempted not to embarrass themselves on the survey by selecting somewhat socially favorable responses.

In addition, there were statistically significant correlations between Social Desirability scales and Vertical-Individualism scales. High scores on Vertical-Individualism scale (Triandis, 1998) are related to winning, competition, or



doing better than others, including “When another person does better than I do, I get tense and aroused,” and “Competition is the law of nature.” Because Japanese culture values harmony, caring only for oneself is considered reflective of a cold-hearted and selfish person (Taguchi, 1996). Moreover, Japanese people avoid conflict while believing harmony within a group setting is the appropriate way to reach a goal (Leung, Kochi, & Lu, 2002). Even when negotiating in business or in courts, people generally accept social harmony and often believe that harmonious agreement is more important than fairness (Ohbuchi, 1998; Leung, Kochi, & Lu, 2002). These possible explanations may indicate that receiving high scores on such items in the Vertical-Individualism scales might be socially unacceptable in a Japanese society.

Furthermore, there were no significant gender differences of chronic decisional procrastination, which was consistent with previous studies (Ferrari et al., 1995; Harriott & Ferrari, 1996; Hammer & Ferrari, 2002). Although the differences of chronic decisional procrastination by personal characteristics were not statistically significant, some results showed interesting findings. For example, participants who claimed to be single in their marital status showed slightly higher decisional procrastination scores than those persons who were married. Moreover, in terms of employment status, students, housewives, office workers, and unemployed participants were more likely to

show higher decisional procrastination scores compared to company executives and self-employed people. People who had less public/group responsibilities (e.g., students) and those who had less flexible time schedule may have increased their procrastinative behavior when making decisions compared to those persons who seemed to have more responsibilities toward work or home (e.g., company executives).

### **Limitations of the Present Study**

The present study has several limitations. One limitation might be regarding survey design. In the current study, matrix questions in a questionnaire were printed in one blank table. This design may have created some problems for the respondent when pointing their eyes from questions on the left to answer categories on the right. Future researchers should use fill characters or shaded stripes to make answering easier for participants. Moreover, a majority of online surveys were submitted incomplete. Many of them quit when they just started filling it out. This may be caused by anxiety feelings of participants which came from not knowing how many more pages left. The remaining pages before survey completion (i.e., “You have completed 3/5 pages”) should be shown to avoid respondent’ frustration.

Another limitation lies on data collection and data entry. The snowballing approach, which existing participants of the study recruit future participants from

among their acquaintances, was frequently used due to the low response rates via online surveys. In addition to the researcher herself, her acquaintances also distributed and collected paper surveys directly by hand. Prior to the survey collection, those agents were instructed to be sensitive when collecting and handling surveys. For instance, they were taught to keep responses as confidential as possible by asking participants to place their survey sheets in given envelopes. However, many surveys were being exposed such that many completed survey sheets were gathered and disorderly piled up in the back seat of their car, for example. This way of collecting might have made some participants uncomfortable because there was a possibility that their responses may be exposed to other people's eyes. After surveys were collected, the data was manually entered. This was economical but time consuming. It increased a chance for data entry errors.

The third limitation is a methodological issue. Although surveys were widely distributed including rural areas, half of the participants were from the researcher's hometown. Moreover, medium-sized cities were common living areas of participants while very few were from rural areas. Without clear classifications to define what a small, medium, or large city is, participants might have selected a wrong living area category. By doing so, it became unclear whether or not their living areas made

differences of decisional procrastinative behavior.

Additionally, not many previous studies focused on prevalence rates of chronic decisional procrastinators. Also, the guideline to define “chronic” indecision was not standardized. This made the hypothesis test difficult because the data of the current study was not able to be properly compared with that of other studies using the same data analysis.

### **Future Directions**

Some researchers suggested that social desirability of participants may cause a variety of falsifications among cross-cultural comparisons (Johnson & van de Vijver, 2002). Future procrastination studies especially in Asian cultures need to make sure to include social desirability scales in their surveys so that researchers may be able to statistically control for the scores in the process of data analysis. Also, some creative ideas might help potential participants to respond honestly. For example, participants may have performed a self-analysis, counting how many points they received in the psychology test section in the survey. Future studies might use some instructions to their survey that would include phrasing like: “Please answer honestly and avoid neutral answers so you may assess yourself correctly”.

Although the current study had a large sample, a much larger sample might be

needed to have sufficient data of chronic decisional procrastinators at the end. To collect a larger, more diverse population, future studies should collect samples more randomly from a variety of regions by efficiently using web-based surveys or paper surveys handled by well-trained agents. Offering incentives would be also a good idea to help increase response rates although it requires a larger budgets and it may affect a respondent's attitude about the survey itself.

To accomplish the outlines noted above, future researchers are recommended to obtain a sufficient financial support to conduct a research. If mostly using paper surveys, data outputs may be dependent on document scanning instead of a manual data entry to reduce errors. Researchers may also want to include guidelines of living areas for potential participants to correctly identify their living areas.

The two hypotheses in the present study were not supported. Regarding the first hypothesis, a clear guideline of chronic decisional procrastinators should be detected. In the future, it would be better to conduct a study on chronic decisional procrastination focusing on Asian countries and perform analysis based on the guideline. In this way, international comparisons may be easily done. In terms of the second hypothesis, priming effect (i.e., giving information that may influence future responses) might be utilized. In the current study, the decisional procrastination scale was placed before the

Individualism-Collectivism scales. Researchers on survey methodology indicated that the context and order in which questions appear in a survey may influence the answers given by participants (Dillman, Smyth, & Christian, 2009). The identity as a Japanese individual seemed to stress more than being an individualist/collectivist, because the brief purpose of the research noted in the beginning of survey. It may make a clear difference on results if the Individualism-Collectivism scales are placed before Decisional Procrastination scales. Their awareness of being an individualist or a collectivist might influence their responses when responding to questions of the Decisional Procrastination scale. It would be interesting in a future study to use this survey order and make an international comparison on decisional procrastination.

**Decisional procrastination.** The present study was the first attempt to investigate the prevalence of chronic decisional procrastination of Japanese adults living in Japan. Although the results did not sturdily give enough evidence to support two hypotheses for this study, it contributes to the previous knowledge about relations between demographic characteristics and chronic decisional procrastination. Clearly, further psychological research on Asian societies is needed, to investigate how adults living in this culture with its lifestyle might influence their indecision, or decisional procrastination.



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## Appendix A

### Demographic Questions (in Japanese)

## アンケート

年齢: \_\_\_\_\_ 歳 性別: 男性 女性  
 職業: 会社員・公務員 会社役員 パート・アルバイト  
 自営業 学生 家事専従 無職 その他 \_\_\_\_\_

(就業している方のみ)

現在の職業について何年(何ヶ月)になりますか? \_\_\_\_\_

職場で誰かを指導する立場にいますか? 何人ぐらいの指導に当たっていますか? \_\_\_\_\_

あなたの最終学歴は次のうちどれですか?

中学校卒業 高校卒業 専門学校卒業 短期大学卒業  
 大学卒業 大学院卒業 その他 \_\_\_\_\_

現在の交際について当てはまるものはどれですか?

未婚 既婚 [ \_\_\_\_\_ 年] 離婚/別居 死別

お子さんがいらっしゃる方:

全部で \_\_\_\_\_ 人 息子 \_\_\_\_\_ 人 娘 \_\_\_\_\_ 人

あなたのお住まいは次のどれに一番近いですか?

田舎町 都会 農業の盛んな町 郊外

あなたは自分が先延ばしする人間だと思っていますか? はい いいえ

他の人はあなたのことを先延ばしする人間だと思っていますか?

はい いいえ

先延ばしがあなたにとってどれぐらいの期間、悪影響を与えていますか?

\_\_\_\_\_ 年

先延ばしがあなたに悪影響を与えるのは次のどんな状況ですか? 当てはまるもの全てに○をつけて下さい。

家 仕事先 学校 家族/友人 同僚

## Appendix B

### Japanese Versions of Procrastination Scales

決断先延ばし尺度 (Japanese Version of Decisional Procrastination Scale)

1. 最終決断をするまでの間、つまらないことに時間をかけてしまう
2. 決断した後でも実行に移すまでぐずぐずしてしまう
3. どうしても必要でない限り自分で決断はしない
4. 手遅れになる前に決めることができる
5. 決断するのを先延ばしする

※ 項目 4 は逆転項目



先延ばし尺度 (Japanese Version of General Procrastination Scale (J-GPS))

1. もっと前にやるはずだった物事に取り組んでいることがよくある
2. 電話に着信があるとすぐに折り返し電話する
3. そう大変ではない仕事でさえ、終えるまで何日もかかってしまう
4. やるべきことを始めるまでに、時間がかかる
5. 旅行する際、適切な時間に空港や駅に到着しようとして、いつも慌しくなってしまう
6. どたんばでやるべきことに追われたりせず、出発の準備ができる
7. 期限が迫っていても、他のことに時間を費やしてしまうことがよくある
8. 期限に余裕をもって、物事を片付ける
9. どたんばになって、誕生日プレゼントを買うことがよくある
10. 必要なものでさえ、ぎりぎりになって購入する
11. たいてい、その日にやろうと思ったものは終わらせることができる
12. いつも「明日からやる」と言っている
13. 夜、落ち着くまでに、すべき仕事をすべて終わらせている

※ 項目 2, 6, 8, 11, 13 は逆転項目

大人先延ばし尺度 (Japanese Version of Adult Inventory of Procrastination)

1. 支払はいつも期限通りに行う
2. 約束にはいつも時間通りかそれより前に間に合う
3. 翌日に約束がある時は前の晩に当日着る服を用意しておく
4. 自分が考えていたよりも遅くなってしまうことがある
5. 時間通りに終わらないことがある
6. 締め切り通りに終わらせる方法を教えるセミナーでもあれば是非参加したい
7. 友達や家族は私が締め切りぎりぎりまでやらないものだと思っている
8. 大事なことは余裕を持って終わらせる方である
9. 締め切りに間に合わせるのがあまり得意ではない
10. 時間がなくなってしまう事がよくある
11. 病院に診察の予約を入れなくてはならないときなどは遅れずにすることができる
12. 知っている他の誰よりも私は時間に正確だ
13. 定期的にメンテナンスが必要なもの（例えば車のオイル交換など）に関してはできるだけ頻繁にするようにしている
14. 決まった時間にどこかへ行かなければならないとき、友達は私が少し遅れてくるものだと思っている
15. ここ数年の間に、ぎりぎりまでやらなかったせいで余分なお金を払ったことがある

※ 項目 1, 2, 8, 11, 12, 13 は逆転項目

## Appendix C

Japanese Version of Short Version of Marlowe-Crown Social Desirability Scale

社会的望ましさ尺度 (Japanese Version of Short Version of Marlowe-Crown Social Desirability Scale)

1. 誰かに勇気づけられないと仕事を続けることが 難しく感じる時がある
2. 自分のやり方が通用しないとき憤りを感じる時がある
3. 自分を過小評価しすぎて何かを諦めることがたまにある
4. 相手に権力がある場合、いくら相手が正しくても反逆したくなることがある
5. 相手が誰であっても私は常に聞き上手だ
6. 誰かを利用したことがある
7. 自分がミスをした時は必ず認めることができる
8. 自分が何かを得るよりも相手の過ちを許し、忘れるようにしたいと思っている
9. 意見が合わない人に対しても親切に接するよう心がけている
10. 自分と意見が全く違う人にも嫌な態度を見せたことはない
11. 他の人の運の良さを恨めしく思うことがよくある
12. 頼みごとをされると面倒に思える時がある
13. 意図的に誰かを傷つけることを言ったりやったりしたことは一度もない

## Appendix D

### Japanese Version of Individualism and Collectivism Scale

個人主義と集団主義尺度 (Japanese Version of Individualism and Collectivism Scale)

水平個人主義

他人よりもむしろ自分自身に依存する方である  
自分を頼りにする事が多く、めったに他人に頼らない  
ひとりの時間を楽しむことが多い  
自分の自己の確立や他人の自立は 非常に重要である。

垂直個人主義

仕事が他の人よりもできることは大事である  
勝つことが全てだと思っている  
競争することは自然の法則である  
他の人が自分よりも優れていたとき、緊張したり興奮することがある

水平集団主義

自分の同僚が仕事で賞をもらったら 誇りに感じるだろう  
自分の同僚が 元気で 幸せでいることは私にとって重要なことである  
喜びとは他の人と一緒に時間を過ごすことである  
他の人に協力するとき、良い気分になる

垂直集団主義

親子は可能な限り一緒にいるべきである  
自分の欲求を犠牲にしても、家族のために何かをするのが私の義務である  
家族はどのような犠牲を伴ってでも一緒にいるべきである  
グループ内で決定されたことを尊重するのは重要である

## Appendix E

### Demographic Questions

Demographic Questionnaire

Age (in years): \_\_\_\_\_ Gender: Male Female

Current Occupation:

How long (years/months) you held this position? \_\_\_\_\_

How many people, if any, do you supervise in this post? \_\_\_\_\_

Highest Education: (please circle what best describes you)

Some High School	High School graduate
Some College/University	College/University graduate
Some Graduate education	Graduate degree

Marital Status: (please circle what best describes you)

Single	Married [# of years _____ ]
Divorced/Separated	Widowed

Number of Children: Total: \_\_\_\_\_ # of sons? \_\_\_\_\_ # daughters? \_\_\_\_\_

Residence: Which situation best describes the community where you live?

Rural	Urban	Suburban
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Do you consider yourself a PROCRASTINATOR? YES NO

Would others consider you a PROCRASTINATOR? YES NO

How long (years/months) do you estimate that PROCRASTINATION has been a problem in your life? \_\_\_\_\_

Please circle ALL the situations where you find PROCRASTINATION to be a problem in your life:

Home	Work	School	Family/Friends Relations
Work Relations			



## Appendix F

### Procrastination Scales

Decisional Procrastination Scale

1. I waste a lot of time on trivial matters before getting to the final decision.
2. Even after I make a decision I delay acting upon it.
3. I don't make decisions unless I really have to.
4. I delay making decision until it's too late.
5. I put off making decisions.

4 is a reversed item.

### General Procrastination Scale

1. I often find myself performing tasks that I had intended to do days before.
2. I often miss concerts and sporting events because I don't get around to buying tickets on time.
3. I generally return phone calls promptly.
4. Even with jobs that require little else except sitting down and doing them, I find they seldom get done for days.
5. I usually make decisions as soon as possible.
6. I generally delay before starting on work I have to do.
7. In preparing for some deadlines, I often waste time by doing other things.
8. I often have a task finished sooner than necessary.
9. I always seem to end up shopping for birthday gifts at the last minute.
10. I usually buy even an essential item at the last minute.
11. I usually accomplish all the things I plan to do in a day.
12. I am continually saying "I'll do it tomorrow"
13. I usually take care of all the tasks I have to do before I settle down and relax for the evening

2, 6, 8, 11, 13 are reversed items.

Adult Inventory of Procrastination

1. I pay my bills on time.
2. I am prompt and on time for most appointments.
3. I lay out my clothes the night before I have an appointment so I won't be late.
4. I find myself running later than I would like to be
5. I don't get things done on time.
6. If someone were teaching a course on how to get things done on time I would attend
7. My friends and family think I wait until the last minute
8. I get important things done with time to spare.
9. I am not very good at meeting deadlines.
10. I find myself running out of time
11. I schedule doctor's appointments when I am supposed to without delay.
12. I am more punctual than most people I know
13. I do routine maintenance (e.g. changing the car's oil) on things I own as often as I should.
14. When I have to be somewhere at a certain time my friends expect me to run a bit late.
15. Putting things off till the last minute has cost me money in the past year.

## Appendix G

### A Short Version of Marlowe-Crown Social Desirability Scale

A Short Version of Marlowe-Crown Social Desirability Scale

1. It is sometimes hard for me to go on with my work if I am not encouraged.
2. I sometimes feel resentful when I don't get my way.
3. On a few occasions, I have given up doing something because I thought too little of my ability.
4. There have been times when I felt like rebelling against people in authority even though I knew they were right.
5. No matter who I'm talking to, I'm always a good listener.
6. There have been occasions I took advantage of someone.
7. I'm always willing to admit it when I make a mistake.
8. I sometimes try to get even rather than forgive and forget.
9. I am always courteous, even to people who are disagreeable.
10. I have never been irked when people expressed ideas very different from mine.
11. There have been times when I was quite jealous of the good fortune of others.
12. I am sometimes irritated by people who ask favors of me.
13. I have never deliberately said something that hurt someone's feelings.

## Appendix H

### Individualism and Collectivism Scale

## Individualism and Collectivism Scale

### Horizontal individualism

1. I'd rather depend on myself than others.
2. I rely on myself most of the time; I rarely rely on others.
3. I often do "my own thing."
4. My personal identity, independent of others, is very important to me.

### Vertical individualism

1. It is important that I do my job better than others.
2. Winning is everything.
3. Competition is the law of nature.
4. When another person does better than I do, I get tense and aroused.

### Horizontal collectivism

5. If a coworker gets a prize, I would feel proud.
6. The well-being of my coworkers is important to me.
7. To me, pleasure is spending time with others.
8. I feel good when I cooperate with others.

### Vertical collectivism

9. Parents and children must stay together as much as possible.
10. It is my duty to take care of my family, even when I have to sacrifice what I want.
11. Family members should stick together, no matter what sacrifices are required.
12. It is important to me that I respect the decisions made by my groups.