

---

Title	The influence of Japanese sporting culture and motivation on sport participation and life aspirations
Author(s)	Chee Keng John Wang, Woon Chia Liu, Haruo Nogawa and Yanlin Sun
Source	<i>Asia Pacific Journal of Sport and Social Science</i> , 4(2), 113-123
Published by	Taylor & Francis (Routledge)

---

Copyright © 2015 Taylor & Francis

This is an Accepted Manuscript of an article published by Taylor & Francis in *Asia Pacific Journal of Sport and Social Science* on 05/11/2015, available online: <http://www.tandfonline.com/10.1080/21640599.2015.1065567>

Notice: Changes introduced as a result of publishing processes such as copy-editing and formatting may not be reflected in this document. For a definitive version of this work, please refer to the published source.

Citation: Wang, C. K. J., Liu, W. C., Nogawa, H., & Sun, Y. (2015). The influence of Japanese sporting culture and motivation on sport participation and life aspirations. *Asia Pacific Journal of Sport and Social Science*, 4(2), 113-123. <http://dx.doi.org/10.1080/21640599.2015.1065567>

**The Influence of Japanese Sporting Culture and Motivation on Sport Participation and Life Aspirations**

Wang, Chee Keng John,<sup>1,3</sup> Liu, Woon Chia,<sup>1</sup> Nogawa, Haruo.<sup>2</sup> & Sun, Yanlin.<sup>3</sup>

<sup>(1)</sup> National Institute of Education, Nanyang Technological University, Singapore

<sup>(2)</sup> Juntendo University, Japan, <sup>(3)</sup>Tianjin University of Sport, China)

**Email:** john.wang@nie.edu.sg

### **Abstract**

The purpose of the study was to examine the relationship between Japanese sporting culture, sport motivation, participation and life aspirations. Confirmatory factor analysis was conducted to examine the three measurement models and hierarchical regressions were used to determine the predictors of sport participation and life aspirations. The results showed that sporting culture strongly predicted sport participation and life goals among Japanese university students. In addition, intrinsic motivation predicted sport participation, but not other forms of motivation. Introjected and intrinsic motivation predicted intrinsic life goals, whereas external and introjected regulations predicted extrinsic life goals. The results present an important facet of the influence of Japanese sport culture.

**Keywords:** sport culture, confirmatory factor analysis, sport participation, exercise regulation

## **Introduction**

In the mid-19<sup>th</sup> century, modern sport was brought to Japan from the West initially in high schools, colleges, and universities, and gradually, in primary and secondary schools through physical education. After the Second World War, PE was compulsory in the school curriculum for the promotion of health and nation building (Hata & Sekine, 2010). Today, Japan has emerged as a sporting power that demands global attention. Indeed, sport has become an integral part of the culture of Japan. The Japanese people have an idea of life time sport and lifelong integrated education (Hata & Sekine, 2010). The sporting culture of Japan may have a strong influence in the motivation of Japanese people to participate in sport as well on their life aspirations. However, literature in this area is non-existent, at least in journal publication in the English language.

In addition to cultural influence, one key factor that can determine participation in physical activity and sport is the quality and quantity of motivation one possesses. To date, several researchers (e.g. Wang, Liu, Lochbaum, & Stevenson, 2009) have studied motivation in sport and physical activity from the self-determination theory perspective (SDT; Deci & Ryan, 1985; Ryan & Deci, 2000). SDT is a theory that is concerned with supporting people's natural or intrinsic tendencies to behave in effective and healthy ways. The basic premise of the theory is that human beings are active in their pursuit of those behaviours and activities which will result in positive growth and a unified, coherent sense of self (Deci & Ryan, 1985, 1991). From the SDT perspective, there are three innate psychological needs that are essential for the development of the self, personal development and well-being (Deci & Ryan, 1985, 1991). These three needs

are the need for autonomy, for competence, and for relatedness . The need for autonomy is defined as the need to experience oneself as initiator of one's own behaviour (deCharms, 1968). The need for competence refers to the need that individuals have to produce desired outcomes and to experience effective mastery over their environment (Harter, 1978; White, 1959). The need for relatedness refers to the need to experience satisfactory relationships with others and a sense of belonging to a social group (Ryan, 1993). The SDT proposes that all individuals are motivated to satisfy these needs and it is this desire that energises and directs them to participate in certain activities. In addition, it proposes that an individual's motivational or behavioural regulation, which can range from intrinsic motivation to amotivation, is contingent on the extent to which these psychological needs are met.

Intrinsic motivation represents the motivation involved when one is doing something for its own sake and not for external rewards. Extrinsic motivation is doing something as a means to an end. A state of amotivation also exists as one of the regulatory processes in SDT and refers to a relative lack of motivation, where an absence of contingency between actions and outcomes is perceived and reasons for continuing involvement cannot be found (Pelletier et al., 1995; Vallerand & Fortier, 1998). According to Deci and Ryan (1985), amotivation is labelled as the 'external boundary' of extrinsic motivation, and is seen as being similar to feelings of helplessness.

SDT also posits that there are at least three main types of extrinsic regulatory processes: external regulation, introjected regulation, and identified regulation. External regulation is characterised by behaviour that is controlled by external forces, such as rewards or fear of punishment.

Introjected regulation is behaviour controlled by internal pressure to act, such as avoidance of guilt and shame. Identified regulation involves taking part in actions because behaviour is seen as personally important.

Previous work in sport and physical activity contexts has often shown intrinsic motivation and identified regulation to predict positive behavioural, cognitive, and affective outcomes (Ryan, Williams, Patrick & Deci, 2009). These correlates include positive affect (Ntoumanis, 2005; Standage, Duda & Ntoumanis, 2005), effort (Ntoumanis, 2001), interest (Goudas, Biddle & Fox, 1994), intention to be physically active in leisure time (Standage, Duda & Ntoumanis, 2003), and physical activity and sport participation (Biddle, Treasure & Wang, 2008). In contrast, more extrinsic forms of motivation (i.e. external and introjected regulations) have been shown to be positively related to less desirable outcomes, such as boredom and burnout (Li, Wang, Pyun & Kee, 2013), and negatively related to attitudes toward physical activity and intention to be physically active (Lim & Wang, 2009; Standage et al., 2003; Wang & Biddle, 2007), and sport and physical activity participation (Wang, Koh, Biddle, Liu & Chye, 2011; Yli-Piipari, Wang, Jaakkola & Liukkonen, 2012).

Recent studies in SDT have included the goals or life aspirations that people pursue through social behaviour. Kasser and Ryan (1996) distinguish two broad categories of goals on the basis of their content. Intrinsic goals or life aspirations include goals related to personal growth, meaningful relationships, and community contributions. Intrinsic goals are related to positive outcomes (e.g. well-being, reduced stress, higher confidence, better learning) because their attainment directly satisfies the three basic psychological needs. Conversely, extrinsic goals

include more materialistic life outcomes such as achieving wealth, image, and fame. Extrinsic goals or aspirations are associated with poorer well-being because they do not lead to the satisfaction of the three basic psychological needs (Vansteenkiste, Simons, Lens, Sheldon & Deci, 2004). A recent study by Wang and his colleagues shows that environmental conditions can influence athletes' life aspirations and that highly competitive athletes may pursue both types of life goals concurrently (Wang, Sproule, McNeill, Martindale & Lee, 2011). However, the influence of sporting culture on life aspirations is not known.

The purpose of the present study, therefore, was to examine the influence of sporting culture and motivational regulation on sport participation and life aspirations among a group of Japanese university students. It was hypothesized that 1) sporting culture strongly predicts sport participation and life aspirations, 2) more self-determined behavioural regulation (intrinsic and identified regulation) will positively predict sport participation and intrinsic goals, and 3) more controlled regulations (introjected and external regulations) will positively predict extrinsic goals.

## **Method**

### ***Participants and Procedure***

A total of 418 university students aged between 18 to 23 years old ( $mean = 18.58, sd = .76$ ) took part in the study. They consisted of 101 males and 312 females (5 missing) from the medical school (26%) and school of nursing (74%) of one university in Japan. Participants were informed that there were no right or wrong answers, assured of the confidentiality of their responses, and encouraged to ask questions if necessary. The procedure for conducting this study was cleared by the university's ethical review committee.

### ***Measures***

***Sporting culture measure.*** The sporting culture measure developed by Wang, Lim, Wee and Soon (2011) consists of 19 items measuring five dimensions. 1) *Accessibility / Opportunities.* There are three items measuring accessibility to sporting facilities and opportunities to participate in sports. 2) *Knowledge / Awareness.* There are four items that assess the knowledge of participants in local sport events and sports news. 3) *Pride in sporting achievements.* Three items are used to measure participants' pride in relation to national glory. 4) *Value of sports.* Four items are used to assess participants' perception of the value of sports. 5) *Sporting identity.* Five items assess the participants' self-identity in sport.

Responses are indicated on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). In this study, the sport identity subscale was not used as this is at odds with the rest of the items. Rather than responding to agree or disagree with the statements, this subscale requires respondents to circle the number of their friends (1 to 7) involved in sport and to decide to what extent they agree or disagree with the statement. The subscale alphas in this study ranged between .82 and .86 (accessibility,  $\alpha = .82$ ; national pride,  $\alpha = .83$ ; knowledge,  $\alpha = .82$ ; values,  $\alpha = .86$ ).

***Exercise regulation questionnaire (BREQ-2).*** The BREQ-2 is one of the most widely used measures of the continuum of behavioural regulation in exercise psychology research. The BREQ-2 (Mullan, Markland & Ingledew, 1997) was developed to measure external, introjected, identified and intrinsic forms of regulation of exercise behaviour. Respondents answered the question 'Why do you engage in exercise?' External regulation and introjection were assessed

through four items each. Identified and intrinsic motivation were measured through three items each. Answers to all the 14 items were given on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The alpha coefficients ranged between .71 and .83 (external regulation,  $\alpha = .78$ ; introjected regulation,  $\alpha = .70$ ; identified regulation,  $\alpha = .71$ ; intrinsic regulation,  $\alpha = .83$ ).

***Life aspiration inventory.*** The life goals of the student were measured by the Life Aspiration Inventory (Kasser & Ryan, 1996). There were 21 items which assessed six life goals. Student athletes were asked to rate the importance of aspiration on a five-point Likert scale. Extrinsic aspiration scores (wealth, fame, image) and intrinsic aspiration scores (personal growth, meaningful relationships, community contributions) were calculated by computing the mean of the corresponding subscale scores. In this study, the alphas ranged between .71 and .87 (wealth,  $\alpha = .78$ ; fame,  $\alpha = .75$ ; image,  $\alpha = .76$ ; personal growth,  $\alpha = .81$ ; meaningful relationships,  $\alpha = .71$ ; community contributions,  $\alpha = .87$ ).

***Sports participation.*** Four items measured frequency and duration of vigorous physical activity and moderate intensity physical activities. The frequency of sports participation ranged from 1 to 6 (1 = occasionally, 2 = once a fortnight, 3 = once a week, 4 = twice a week, 5 = 3 times a week, and 6 = 4 or more times a week). The duration of sports participation and vigorous and moderate physical activities was assessed according to a 6-point scale (1 = less than 30 minutes, 2 = more than 30 minutes to 1 hour, 3 = more than 1 to 3 hours, 4 = more than 2 to 3 hours, 5 = more than 3 to 5 hours, 6 = more than 5 hours). The mean of the four items was computed as an indicator of participation in sport.

## Data Analysis

Confirmatory factor analyses (CFAs) were conducted in order to examine the factor structure of the Sporting Culture measures, BREQ-2 and the life aspiration inventory using EQS 6.2 for Windows (Bentler & Wu, 1998). In the initial analysis, there was some evidence of multivariate non-normality in the distribution. Therefore, the Robust Maximum Likelihood method was used for the estimation method because it performs well with small sample sizes and excessive kurtosis (Holye & Panter, 1995).

The following fit indices were used to evaluate the adequacy of the models: chi-square statistic, Bentler-Bonett Nonnormed Fit Index (NNFI), Comparative Fit Index (CFI), and Root Mean Squared Error of Approximation (RMSEA). Fit indices of close to .90 were used as acceptable and the RMSEA of below .10 indicates a good fit with the data (Hu & Bentler, 1999).

In the initial analysis, the descriptive statistics, correlation, and internal consistency of the main variables were computed. For the main study, a series of hierarchical regressions were conducted the first of which used sporting culture (step one) and the four types of motivation regulation (step two) to predict sport participation. The second and third sets of regression analysis used sporting culture and the four behavioural regulations as the independent variables of intrinsic and extrinsic goals, separately. To check for the multicollinearity, we computed the tolerance values. A value smaller than .10 indicates an almost perfect linear combination of the independent variable and should not be added to the regression equation (Hair, Anderson, Tatham & Black, 1998).

## Results

The results of the CFA of the Sporting Culture measure showed that the data fit the hypothesized model well. The fit for the hierarchical model was satisfactory ( $\chi^2_{\text{scaled}} = 191.43$ ,  $df = 71$ , NNFI = .929, CFI = .945, RMSEA = .066; 90% CI of RMSEA = .055, .077). For the BREQ-2, the fit indices were also acceptable ( $\chi^2_{\text{scaled}} = 189.41$ ,  $df = 65$ , NNFI = .933, CFI = .934, RMSEA = .068; 90% CI of RMSEA = .057, .080). The results of the CFA of the life aspiration inventory supported the hierarchical structure of the measurement model ( $\chi^2_{\text{scaled}} = 242.88$ ,  $df = 85$ , NNFI = .934, CFI = .946, RMSEA = .067; 90% CI of RMSEA = .057, .076).

Table 1 presents the means, standard deviations, and correlation of the main measures. The descriptive statistics indicated that the participants reported moderately strong sporting culture, particularly in relation to the values of sports, and pride in the nation's sporting achievements. Their motivation towards sport participation tended to be regulated by identified and intrinsic motivation, rather than by external and introjected regulations. In addition, the participants reported higher intrinsic goal aspiration than extrinsic goals. The bivariate correlations revealed that sporting culture was correlated positively with introjected, identified and intrinsic regulations, as well as life aspirations and sports participation. Intrinsic life aspirations had positive associations with introjected, identified and intrinsic regulations, whereas extrinsic goals were related to external and introjected regulations. Both life aspirations were highly correlated. Sport participation was positively associated with sporting culture and intrinsic regulations.

# Table 1 about here.

Preliminary analyses revealed no issues with multicollinearity, and the tolerance values ranged from .68 to .99. In the first set of hierarchical regression analyses, the sporting culture index was entered in the first step, followed by the four behavioural regulations in step two to predict sport participation. The results showed that sporting culture was a significant predictor of sport participation, explaining 13.2% of the total variance in sport participation. In step two, sporting culture and intrinsic motivation were significant predictors of sport participation. The model predicted 15.7% of the variance in sport participation (see Table 2).

#Table 2 about here

In terms of intrinsic goal pursuits, sporting culture was a significant predictor in step one ( $R^2 = .22, p < .001$ ). In step two, sporting culture, introjected and intrinsic regulations were significant predictors of intrinsic goal pursuits. The model predicted 34.3% of variance in intrinsic goal pursuits. In terms of extrinsic goal pursuits, sporting culture was a significant predictor of extrinsic goal pursuit ( $R^2 = .14, p < .001$ ). In step two, sporting culture, external regulation, and introjected regulation were positive predictors of extrinsic goals ( $\Delta R^2 = .18, p < .001$ ). The model accounted for a total of 31.2% variance in extrinsic goal pursuit. Table 3 shows the betas, standard errors of betas, standardised betas of the hierarchical regressions.

#Table 3 about here

In summary, the results showed that sporting culture was a strong predictor of sport participation and life aspirations (both intrinsic and extrinsic goal pursuit). Intrinsic motivation was also a

significant predictor of sport participation. Surprisingly, introjected regulation emerged as a significant predictor of intrinsic goal pursuits, whereas external and introjected predicted extrinsic goal pursuits.

## **Conclusions**

The main purpose of the present study was to examine the relationship between sporting culture and motivation regulation on sport participation and life aspirations among Japanese university students. This is the one of the first studies to have looked into the sporting culture of Japan using the sporting culture index developed by Wang, Sproule et al. (2011). This study further confirmed the psychometric properties of the sporting culture measure through confirmatory factor analysis. The measurement model of the sporting culture was best represented by a hierarchical model. Instead of using sport participation as one of the factors of sporting culture index (Wang, Sproule et al., 2011), the present study used sport participation as a dependent variable of sporting culture. There are two reasons for this. First, a country with a strong sporting culture should encourage its people to participate in sport. Since the study measured the last seven days of vigorous and moderate intensity physical activities and the frequency and duration of recent sport involvement, sport participation could be used as an outcome variable of sporting culture. Second, the correlation between sporting culture and sport participation is moderate ( $r = .36$ ); it does not have a high correlation coefficient, as compared with the other four subscale of the sporting measure ( $r$  ranged between  $.67$  to  $.70$ ). Therefore, sport participation should not be included as a subscale of sporting culture.

In general, Japanese university students reported a relatively high sporting culture, identified and intrinsic regulations, and intrinsic life aspiration (with means higher than 3.30 on a 5-point scale). This seems to be an ideal outcome for a country with a strong sporting culture. However, the correlation between intrinsic and extrinsic life aspiration is exceptionally high ( $r = .78$ ). It would appear that Japanese university students see both forms of life aspiration as equally important.

The results of the current study supported the first hypothesis that sporting culture is a strong predictor of sport participation and life aspirations, in pursuit of both intrinsic and extrinsic goals. Interestingly, sporting culture in Japan has a stronger influence on sport participation than motivation. Sporting culture predicted 13.2% of the total variance in sport participation, whereas the motivation variables only added a small amount of variance ( $\Delta R^2 = .025$ ). This shows that cultural influence on sport cannot be ignored. Yan and McCullagh (2004) suggest culture-associated differences may result in variation of motivation to participate in physical activities or sports.

In psychology research, it is well established that people's life aspirations partly reflect the cultural and economic conditions in which they live (Ingrid, Majda & Dubrevka, 2009). Furthermore, although researchers have largely ignored the influence of culture on life aspirations in the sporting domain, this study shows that a strong sporting culture also influences its people towards goal pursuits in their lives. Previous studies have shown that there are cultural differences in terms of the relative contributions of goals to well-being. For example, Ryan and

his colleagues (Ryan et al., 1999) found that both extrinsic and intrinsic aspirations were related to various indices of well-being among samples from USA and Russia. In addition, both intrinsic and extrinsic goals predicted life satisfaction in people from Russia (Ryan et al., 1999) and China (Lekes et al., 2009), although not in the USA sample. According to SDT, intrinsic aspirations enhance both hedonic enjoyment and a sense of purpose in life (eudemonia), whereas extrinsic aspirations undermine this (Chatzisarantis & Hagger, 2007). The fact that Japanese university students report high intrinsic and extrinsic aspirations could be related to the wealth and development of the country. In rich countries, such as Japan, financial success may be seen as a necessary source of security rather than opportunity and possibilities of self-expression and self-growth (Frost & Frost, 2000). This again shows that culture has a significant impact of life aspirations (Diener & Diener, 1995; Kasser & Ahuvia, 2002).

In terms of the second hypothesis, it was predicted that more self-determined behavioural regulation (intrinsic and identified regulations) would positively predict sport participation and intrinsic goals. However, the results of the current study only partially supported this hypothesis. Intrinsic motivation predicted sport participation and intrinsic goal pursuit. However, identified regulation did not emerge as a significant predictor of either sport participation or intrinsic life aspiration. On the other hand, introjected regulation did predict intrinsic goal pursuit. Many studies have shown that more self-determined motivation (intrinsic and identified regulations) predict sport participation and intrinsic goal pursuit (e.g., Vansteenkiste et al., 2004; Wang, Sproule et al., 2011). This is because they promote the satisfaction of the three basic psychological needs (competence, autonomy, and relatedness), according to SDT (Ryan & Deci, 2000). More controlling regulations (introjected and external) fail to satisfy these three needs

and thus should not enhance participation and intrinsic goals. However, Thøgersen-Ntoumanis and Ntoumanis (2006) found that introjected regulation is highest in the maintenance stage of regular exercisers. The contribution of introjected regulation to sport participation and intrinsic goal aspiration may also be due to the cultural impact in Japan. In the context of the present study, Japanese university students may partially internalize these cultural norms and participation in sport and strive for intrinsic goals. One previous study has shown that introjected regulation positively predicted persistence in competitive swimming but not over the longer term (Pelletier, Fortier, Vallerand & Bri  e, 2001). Therefore, there could be a detrimental effect of this form of motivation in the long term. In terms of the third hypothesis, the results of the current study provide support that more controlled regulations (introjected and external regulations) positively predict extrinsic goals. This is consistent with the findings of previous studies (Wang et al., 2011).

In summary, the current study extends the literature on the effect of sporting culture and motivational regulation on sport participation and life aspirations. Sport in itself is a culture and social process. However, no study has been conducted using a sporting culture index to determine the extent to which sport has an influence on a social group. This study contributes to the literature by exploring Japanese sporting culture using the sporting culture measure developed by Wang, Sproule et al. (2011). It provides empirical evidence of the influence of sporting culture on sport participation and life aspirations. A few limitations need to be mentioned. First, the original sporting culture measure included self-identity in the instrument. However, the self-identity subscale uses a different response scale and was deemed inappropriate for inclusion. Second, sport participation is used as an outcome variable of a culture. Future

studies will need to re-examine the factor structure of the sporting culture measure to provide greater robustness. Third, because the study focused on individuals from one culture, the generalizability of the findings to other culture is not known. Future cross-cultural studies need to be conducted. Fourth, the data are cross-sectional and thus no causal relationship can be established. Finally, there could be other determining factors, such as politics, race, ethnicity, gender, and sport policy that could additionally influence the sporting culture of a particular country.

## References

- Bentler, P. M., & Wu, E. (1998). EQS for Windows (Version 5.7). Encino, CA: Multivariate Software.
- Biddle, S. J. H., Treasure, D. C., & Wang, C. K. J. (2008). Motivational characteristics and youth physical (in) activity. In A. L. Smith & S. J. H. Biddle (Eds.), *Youth physical activity and inactivity: Challenges and solutions* (pp. 193-214). Champaign, IL: Human Kinetics.
- Chatzisarantis, N. L. D., & Hagger, M. S. (2007). The moral worth of sport reconsidered: Contributions of recreational sport and competitive sport to life aspirations and psychological well-being. *Journal of Sports Sciences* 25, 1047-1056.
- deCharms, R. (1968). *Personal causation: The internal affective determinants of behavior*. New York: Academic Press.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.
- Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In R. Dienstbier (Ed.), *Nebraska symposium on motivation* (pp. 237-288). Lincoln, NE: University of Nebraska Press.
- Diener, E., & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology*, 68, 653-663.
- Frost, K. M., & Frost, C. J. (2000). Romanian and American life aspirations in relation to psychological well-being. *Journal of Cross-Cultural Psychology*, 31(6), 726-751.
- Goudas, M., Biddle, S., & Fox, K. (1994). Perceived locus of causality, goal orientations and perceived competence in school physical education classes. *British Journal of Educational Psychology*, 64, 453-463.

- Hair, J. F. J., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5 ed.). New Jersey: Prentice-Hall International.
- Harter, S. (1978). Effectance motivation reconsidered: Toward a developmental model. *Human Development, 1*, 34-64.
- Hata, T., & Sekine, M. (2010). Philosophy of sport and physical education in Japan: Its history, characteristics and prospects. *Journal of the Philosophy of Sport, 37*, 215-224.
- Holye, R. H., & Panter, A. T. (1995). Writing about structural equation models. In R. H. Holye (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 158-176). Newbury Park, CA: Sage.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*(1), 1-55.
- Ingrid, B., Majda, R., & Dubravka, M. (2009). Life goals and well-being: Are extrinsic aspirations always detrimental to well-being? . *Psychological Topics, 18*, 317-334.
- Kasser, T., & Ahuvia, A. C. (2002). Materialistic values and well-being in business students. *European Journal of Social Psychology, 32*, 137-146.
- Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin, 22*(3), 280-287.
- Lekes, N., Gingras, I., Philippe, F. L., Koestner, R., & Fang, J. (2010). Parental autonomy-support, intrinsic life goals, and well-being among adolescents in China and North America, *Journal of Youth and Adolescence, 39*(8), 858-869.

- Li, C., Wang, C. K. J., Pyun, D. Y., & Kee, Y. H. (2013). Burnout and its relations with basic psychological needs and motivation among athletes: A systematic review and meta-analysis. *Psychology of Sport and Exercise, 14*(5), 692-700.
- Lim, B. S. C., & Wang, C. K. J. (2009). Perceived autonomy support, behavioural regulations in physical education and physical activity intention. *Psychology of Sport and Exercise, 10*(1), 52-60.
- Mullan, E., Markland, D., & Ingledrew, D. K. (1997). A graded conceptualisation of self-determination in the regulation of exercise behaviour: Development of a measure using confirmatory factor analytic procedures. *Personal and Individual Differences, 23*, 745-752.
- Ntoumanis, N. (2001). Empirical links between achievement goal theory and self-determination theory in sport. *Journal of Sports Sciences, 19*, 397-409.
- Ntoumanis, N. (2005). A prospective study of participation in optional school physical education based on self-determination theory *Journal of Educational Psychology, 97*, 444-453.
- Pelletier, L. G., Fortier, M. S., Vallerand, R. J., & Briere, N. M. (2001). Associations Among Perceived Autonomy Support, Forms of Self-Regulation, and Persistence: A Prospective Study. *Motivation and Emotion, 25*(4), 279-306.
- Pelletier, L. G., Fortier, M. S., Vallerand, R. J., Tuson, K. M., Briere, N. M., & Blais, M. R. (1995). Towards a new measure of intrinsic motivation, extrinsic motivation, and amotivation in sports: The Sport Motivation Scale (SMS). *Journal of Sport and Exercise Psychology, 17*, 35-53.
- Ryan, R. (1993). Agency and organisation: Intrinsic motivation, autonomy and the self in psychological development. In J. Jacobs (Ed.), *Nebraska symposium on motivation:*

- Developmental perspectives on motivation* (Vol. 40, pp. 1-56). Lincoln: University of Nebraska Press.
- Ryan, R. M., Chirkov, V. I., Little, T. D., Sheldon, K. M., Timoshina, E., & Deci, E. L. (1999). The American dream in Russia: Extrinsic aspirations and well-being in two cultures. *Personality and Social Psychology Bulletin*, 25(12), 1509-1524.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78.
- Ryan, R. M., & Deci, E. L. (2001). On Happiness and Human Potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, 52, 141-166.
- Ryan, R. M., Williams, G. C., Patrick, H., & Deci, E. L. (2009). Self-determination theory and physical activity: The dynamics of motivation in development and wellness *Hellenic Journal of Psychology*, 6, 107-124.
- Standage, M., Duda, J. L., & Ntoumanis, N. (2003). A model of contextual motivation in physical education: Using constructs from self-determination and achievement goal theories to predict physical activity intentions. *Journal of Educational Psychology*, 95, 97-110.
- Standage, M., Duda, J. L., & Ntoumanis, N. (2005). A test of self-determination theory in school physical education. *British Journal of Educational Psychology*, 75, 411-433.
- Thogersen-Ntoumani, C., & Ntoumanis, N. (2006). The role of self-determined motivation in the understanding of exercise-related behaviours, cognitions and physical self-evaluations. *Journal of Sports Sciences*, 24, 393-404.
- Vallerand, R. J., & Fortier, M. S. (1998). Measures of intrinsic and extrinsic motivation in sport and physical activity: A review and critique. In J. L. Duda (Ed.), *Advances in sport and*

- exercise psychology measurement* (pp. 81-101). Morgantown, USA: Fitness Information Technology, Inc.
- Vansteenkiste, M., Simons, J., Lens, W., Sheldon, K. M., & Deci, E. L. (2004). Motivating learning, performance, and persistence: The synergistic effects of intrinsic goal contents and autonomy-supportive contexts. *Journal of Personality and Social Psychology*, 87(2), 246-260.
- Wang, C. K. J., & Biddle, S. J. H. (2007). Understanding young people's motivation towards exercise: An integration of sport ability beliefs, achievement goals theory, and self-determination theory. In M. Hagger & N. L. D. Chatzisarantis (Eds.), *Self-determination Theory in Exercise and Sport* (pp. 193-208). Champaign, IL: Human Kinetics.
- Wang, C. K. J., Koh, K. T., Biddle, S. J. H., Liu, W. C., & Chye, S. (2011). Physical activity patterns and psychological correlates of physical activity among Singaporean primary, secondary, and junior college students. *ICHPER-SD Journal of Research*, 6, 6-12.
- Wang, C. K. J., Lim, B. S. C., Wee, S. L., & Soon, F. M. (2011). Development of an inventory for measuring sporting culture. *International Journal of Asian Society for PE, Sport & Dance*, 9(2), 44-53.
- Wang, C. K. J., Liu, W. C., Lochbaum, M. R., & Stevenson, S. J. (2009). Sport ability beliefs, 2 x 2 achievement goals, and intrinsic motivation: The moderating role of perceived competence in sport and exercise. *Research Quarterly for Exercise and Sport*, 80(2), 303-312.
- Wang, C. K. J., Sproule, J., McNeill, M., Martindale, R. J. J., & Lee, K. S. (2011). Impact of the talent development environment on achievement goals and life aspirations in Singapore. *Journal of Applied Sport Psychology*, 23(3), 263-276.

- White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*, 66, 297-333.
- Yan, J. H., & McCullagh, P. (2004). Cultural influence on youth's motivation of participation in physical activity. *Journal of Sport Behavior*, 27(4), 378-390.
- Yli-Piipari, S., Wang, C. K. J., Jaakkola, T., & Liukkonen, J. (2012). Examining the growth trajectories of physical education students' motivation, enjoyment, and physical activity: A person-oriented approach. *Journal of Applied Sport Psychology*, 24(4), 401-417.

*Table 1. Descriptive Statistics and Intercorrelations of the Main Variables*

Subscales	Mean	SD	1	2	3	4	5	6	7	8
1. Sporting Culture	3.36	.64	1.00							
2. External Regulation	2.30	.84	.08	1.00						
3. Introjected Regulation	2.68	.89	.41**	.52**	1.00					
4. Identified Regulation	3.42	.74	.55**	.10*	.52**	1.00				
5. Intrinsic Regulation	3.59	.91	.56**	-.02	.38**	.68**	1.00			
6. Intrinsic Goals	3.37	.89	.44**	.22**	.47**	.40**	.42**	1.00		
7. Extrinsic Goals	2.91	.92	.37**	.38**	.49**	.27**	.27**	.78**	1.00	
8. Sport Participation	2.80	1.20	.36**	.10*	.26**	.27**	.30**	.18**	.15**	1.00

Note. \*  $p < .05$ , \*\*  $p < .01$ .

**Table 2. Hierarchical Regression Analyses of Predictors of Sport Participation**

		<i>B</i>	<i>SE B</i>	$\beta$
Step 1				
	Sporting Culture	.67	.09	.36**
Step 2				
	Sporting Culture	.48	.11	.26**
	External Regulation	.06	.08	.04
	Introjected Regulation	.12	.09	.09
	Identified Regulation	-.05	.11	-.03
	Intrinsic Regulation	.18	.09	.14*

Note. \*  $p < .05$ , \*\*  $p < .01$

**Table 3. Regression Analyses of Predictors of Intrinsic and Extrinsic Goals**

		<i>Intrinsic Goals</i>			<i>Extrinsic Goals</i>		
		<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Step 1							
	Sporting Culture	.60	.06	.44**	.53	.07	.37**
Step 2							
	Sporting Culture	.29	.07	.21**	.33	.07	.23**
	External Regulation	.05	.05	.05	.24	.06	.22**
	Introjected Regulation	.29	.06	.29**	.30	.06	.29**
	Identified Regulation	-.01	.07	-.01	-.13	.08	-.10
	Intrinsic Regulation	.19	.06	.20**	.10	.06	.10

Note. \*  $p < .05$ , \*\*  $p < .01$