[1]DEVELOPMENT OF A MOTIVATION-BASED TAXONOMY OF ADULT SPORT PARTICIPANTS USING A SELF-DETERMINATION THEORY PERSPECTIVE

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Introduction

Self-determination theory (SDT; Deci & Ryan, 1985, 1991; Ryan & Deci, 2000) has been prominent in investigations of the motivational dynamics of sport participation. SDT posits that motivation for participation in an activity may be either intrinsic, extrinsic, or amotivated. When individuals engage in a behaviour to obtain rewards, pay, or as a result of coercive pressures, the behaviour is said to be extrinsically motivated. In contrast, when the motive for a behaviour is the enjoyment derived from the process of participation, the behaviour is said to be intrinsically motivated. A motivation is evident when there is a lack of intention to participate in an activity. According to Deci and Ryan (1985) extrinsic motivation can be differentiated into four sub-types, referred to as "external regulation", "introjected regulation", "identified regulation" and "integrated regulation". For definitions of these types of extrinsic motivation see Deci and Ryan (1985). In addition, Deci (1975) and Vallerand and associates (Vallerand et al., 1992, 1993) suggested that intrinsic motivation can be differentiated into "intrinsic motivation to know", "intrinsic motivation to accomplish" and "intrinsic motivation to experience stimulation". These types of motivation (from amotivation to intrinsic motivation) are proposed to lie on a continuum ranging from lower to higher degrees of self-determination (Deci & Ryan, 1985). Research in a variety of life domains has shown that higher self-determination is associated with positive consequences whereas lower self-determination is associated with negative consequences.

Vallerand (1997) has suggested that pitting intrinsic against extrinsic motivation is not the most informative way to study human motivation. This is because various types of motives coexist within individuals in different degrees and they interact to influence behaviour. Hence, the purpose of the present study was to examine the configurations of motives for sport participation that characterise the motivation profiles of adult sport participants and to identify the configurations that correspond with the most and least positive consequences.

Methods and Procedure

Participants

Two independent samples were used. Sample 1 comprised 590 sports participants with a gender breakdown of 353 males (59.9%) and 236 females (40.1%). One participant did not indicate his/her gender. Participants' ages ranged from 18 - 67 yr. ($M = 23.35$ yr., $SD = 7.54$ yr.) with 90% in the range 18 - 32 yr. Participants' years of experience in their sport ranged from 1 - 50 yr. ($M = 9.84$ yr., $SD = 6.41$ yr.) with 90% in the range 1-17 yr. The sports represented were track and field, field hockey, netball, triathlon, golf, skiing, soccer, rugby, horse riding, cricket, weightlifting, badminton, lacrosse, tennis, volleyball, cycling, swimming, canoeing, basketball, judo, gymnastics, kickboxing, squash, water polo, and lawn bowling.

Following the removal of two cases owing to missing data, Sample 2 comprised 555 participants. There were 305 males (55%) and 250 females (45%). The age of participants ranged from 18 - 62 yr. ($M = 23.48$ yr., $SD = 6.56$ yr.) with 90% in the range 18 - 30 yr. Participants' years of experience ranged from 1 - 57 yr. ($M = 10.43$ yr., $SD = 6.41$ yr.) with 90% in the range 1 - 17 yr. The sports represented in Sample 2 were the same as those in Sample 1 with the addition of figure skating and surfing.

Instrumentation

To assess the reasons for sport participation, the Sport Motivation Scale (Pelletier et al., 1995) was used. In addition, other variables were assessed such as intrinsic interest and effort, using the Intrinsic Motivation Inventory (McAuley, Duncan, & Tammen, 1989); positive and negative affect, using the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988); attitude toward sport participation and intention

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for future participation, with questions constructed based on recommendations by Ajzen and Fishbein (1980); integrated intention (Chatzisarantis, Biddle, & Meek, 1997); satisfaction, and persistence.

Procedure

Participants were approached by trained proctors and informed about the general purpose of the study. Prior to signing an informed consent form, they were assured that there would be no potential danger involved and that their answers would be kept in confidence. Participants first completed the demographic questionnaire followed by the Sport Motivation Scale, and finally, the measures that assessed the motivation consequences.

Results

To investigate the configurations of motives, a series of hierarchical cluster analyses were conducted on the first sample following the removal of 55 multivariate outliers identified using the Mahalanobis' distance method. Cluster analyses were conducted using all seven methods available in the SPSSWIN software. The subscale scores of the SMS were used for the classification of participants into clusters. The goal of cluster analysis in this instance was to reorganise the sample of sport participants into groups that were homogeneous in terms of the combination of motives that characterised their participation in sport. The cluster solution that discriminated significantly among the greatest number of dependent variables was selected as the most externally valid (see Table 1).

Table 1

Hierarchical Cluster Solutions and Associated Degrees of External Validity among Sample 1 (N = 535)

Cluster Procedure	Number of Clusters	External Validity
1. Between-groups linkage	1	___
2. Within-groups linkage	3	9/9
3. Nearest neighbour	1	___
4. Furthest neighbour	4	6/9
5. Centroid clustering	2	2/9
6. Median clustering	2	3/9
7. Ward's method	3	8/9

Note. The "external validity" column indicates the number of dependent variables on which the clusters differed significantly from a possible nine. The alpha level used for mean comparisons was set at .005 after Bonferroni adjustment.

The within-groups linkage procedure, which produced the best external validity, identified three clusters representing two types of profiles. The first profile was characterised by high levels of both controlling and self-determined motivation and the second profile was characterised by high levels of self-determined motivation but low levels of controlling motivation. To test the cross-sample validity of this two-cluster solution, a *k*-means confirmatory cluster analysis was conducted on Sample 2 following the removal of 41 multivariate outliers (see Figure 1).

Figure 1. *K*-means cluster solution based on Sample 2.
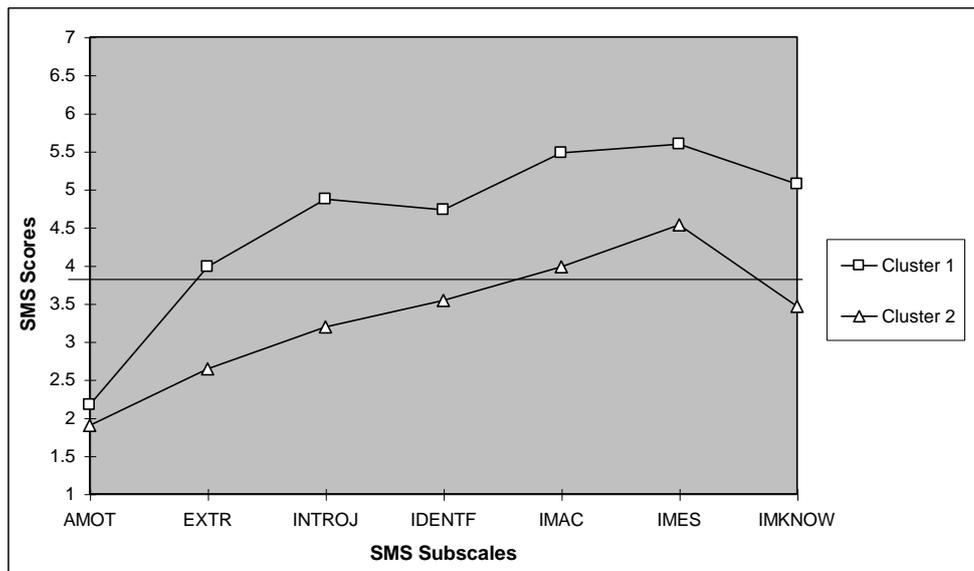
The results of the confirmatory cluster analysis showed that the two clusters that emerged in Sample 2 were very similar to those from Sample 1 (see Figure 1). In addition, a series of independent samples *t*-tests showed that participants in Cluster 1 (i.e., high on both controlling and self-determined motivation) reported significantly higher mean scores on the dependent variables compared to Cluster 2 (i.e., traditional self-determined profile) (see Table 2).

Table 2
Comparison of Motivation Consequences by Clusters among Sample 2 (N = 514)

Consequences	Cluster 1	Cluster 2	*df*	*t*	*ES*
Enjoyment/Intrinsic Interest	4.17	3.73	511	7.73**	.68
Effort/Importance	4.32	3.88	512	6.86**	.60
Positive Affect	4.03	3.54	456	8.13**	.73
Negative Affect	1.78	1.59	507	3.75**	.33
Attitude Toward Sport	6.15	5.78	509	5.91**	.52
Intention	6.39	6.08	512	3.49*	.30
Integrated Intention	6.29	5.96	463	3.68**	.32
Satisfaction	6.01	5.54	464	4.18**	.37
Persistence	89.27	85.09	409	2.15*	.20

Note. Cluster 1 is characterised by both controlling and self-determined motivation. Cluster 2 is characterised by only self-determined motivation. * *p* < .05, ** *p* < .005 after Bonferroni adjustment. *ES* = Effect size.

Discussion and Conclusions

The present study showed that two configurations of motives for sport participation characterise the motivational profiles of adult sport participants. The first is characterised by both controlling and self-determined motives. The second is characterised by self-determined motives only. The first cluster was associated with more positive consequences compared to the second cluster. It is important to highlight that effect sizes were moderate for nearly half of the motivation consequences, suggesting that motivation profiles are an important source of information among adult sports participants. The present findings have important implications for advancing theory as this typology sheds new light on the processes underlying motivational dynamics in sport. The findings also extend past research by showing that various patterns of participation motives are potentially relevant to the degree to which various motivational consequences are experienced.

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