

## 1 Sport Commitment and Participation in Masters Swimmers:

## 2 The Influence of Coach and Teammates

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11  
12 **Abstract**

13 This study investigated how coach and teammates influence masters athletes' sport commitment,  
14 and the effect of functional and obligatory commitment on participation in masters swimming. The  
15 sample consisted of 523 masters swimmers (330 male and 193 female) aged between 22 and 83  
16 years ( $M = 39.00$ ,  $SD = 10.42$ ). A bi-dimensional commitment scale was used to measure  
17 commitment dimensions and perceived influence from social agents. Structural Equation Modelling  
18 analysis was conducted to evaluate the influence of social agents on functional and obligatory  
19 commitment, and the predictive capabilities of the two types of commitment towards sport  
20 participation. Support provided by coach and teammates increased functional commitment,  
21 constraints from these social agents determined higher obligatory commitment, and coach  
22 constraints negatively impacted functional commitment. In addition, both commitment types  
23 predicted training participation, with functional commitment increasing participation in team  
24 training sessions, and obligatory commitment increasing the hours of individual training. The  
25 findings suggest that in order to increase participation in masters swimming teams and reduce non-  
26 supervised training, coach and teammates should exhibit a supportive attitude and avoid over  
27 expectation.

28 *Keywords* – Sport commitment, obligatory commitment, functional commitment, social support,  
29 masters swimming.

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3 Sport commitment has been defined as “a psychological construct representing the desire and  
4 resolve to continue sport participation” (Scanlan, Carpenter, Schmidt, Simons, & Keeler, 1993, p.  
5 6). In spite of this definition, the majority of studies on sport commitment have focused on its  
6 antecedents rather than its potential behavioural and psychological outcomes, such as participation  
7 in sport activities. Initially, sport commitment has been investigated as a uni-dimensional construct  
8 determined by enjoyment in doing the activity, personal investments in the activity, benefits and  
9 opportunities derived from the activity, attraction toward alternative activities, and constraints  
10 provided by social environment (see e.g., Scanlan, Carpenter, Schmidt, Simons, & Keeler, 1993;  
11 Scanlan, Simons, Carpenter, Schmidt, & Keeler, 1993), with social support more recently added as  
12 a determinant (Scanlan, Russell, Beals & Scanlan, 2003; Scanlan, Russell, Wilson & Scanlan,  
13 2003). To date, studies based on this uni-dimensional construct have reported conflicting results  
14 about the relationship between commitment and behavioural outcomes (Weiss, Weiss, & Amorose,  
15 2010; Casper, Gray, & Stellino, 2007). For example, Weiss and colleagues (Weiss et al., 2010)  
16 study of young competitive female gymnasts did not find any direct effects of psychological  
17 commitment on behavioral outcomes, measured as effort and intensity of training. In contrast,  
18 Casper and colleagues (Casper et al., 2007) study of adult recreational tennis players found that  
19 tennis commitment predicted participation frequency.

20 Wilson and colleagues (Wilson, Rodgers, Carpenter, Hall, Hardy, & Fraser, 2004) expanded  
21 the initial uni-dimensional construct of sport commitment and distinguished between two different  
22 types of sport commitment: functional and obligatory. This distinction was based on Brickman’s  
23 (Brickman, 1987) suggestion to consider commitment as composed by feelings of obligation and by  
24 functional resolve. This bi-dimensional construct presents similarities with self-determination  
25 theory (Deci & Ryan, 1985; 2002). Functional commitment, similarly to autonomous motivation,

1 reflects the will of a person to do something (“I want to”), instead obligatory commitment, such as  
2 controlled motivation, is determined by sense of duty and constriction in doing something (“I have  
3 to”). As Wilson and colleagues asserted, it is reasonable to expect different outcomes from  
4 different types of commitment. In fact, studies investigating sport commitment and motivation in  
5 physical exercise contexts have found that functional commitment and autonomous motivation are  
6 predictive of higher participation in physical activity, while obligatory commitment and controlled  
7 motivation do not have any effects (Wilson et al., 2004; Wilson, Rodgers, Blanchard, & Gessell,  
8 2003). Alternatively, studies based on self-determination theory (Mullen & Markland, 1997;  
9 Pelletier, Fortier, Vallerand, & Brièr, 2001; Ryan & Deci, 2000; 2007) suggest that autonomous  
10 motivation increases participation in sport activities, while controlled motivation determines  
11 intention to quit among sport practitioners. Both these groups of findings suggest differential  
12 effects of sport commitment on participation, implying the need to consider a bi-dimensional  
13 construct of sport commitment in order to predict sport participation.

14 Two of the main factors affecting participation in sport activities are the presence of social  
15 support and lack of social network (Allender, Cowburn, & Foster, 2006). Several studies in youth  
16 and adult sports identified in coaches and sport-peers two of the most relevant social agents  
17 influencing commitment and motivation (e.g., DeFreese & Smith, 2013; Gillet, Vallerand, Amoura,  
18 & Baldes, 2010; Medic, Starkes, Young, & Weir, 2012; Torregrosa, Viladrich, Ramis, Azocar,  
19 Latinjak, & Cruz, 2011). For example, Medic and colleagues (2012) found that masters runners  
20 who trained with a coach exhibited a more self-determined motivational profile compared to  
21 athletes with no coach. Additionally, research in youth sport (Torregrosa et al., 2011) has found that  
22 a climate of task-orientation created by coach and teammates was the main predictor of  
23 commitment towards the activity. Studies based on sport commitment theories have examined  
24 social influence in terms of support and constraints provided by social agents. For example, Weiss  
25 and Weiss’s (2003) study of young gymnasts showed how athletes who perceived high support and  
26 low constraints from coach, teammates and parents were more attracted to their sport and athletes

1 who perceived high-level constraints and low support felt a sense of entrapment. More recently,  
2 research has considered the causal effect of social agents on commitment, in particular Young and  
3 Medic (2011) identified eight specific social agents supposed to influence sport commitment in the  
4 context of masters swimming: coach, training partners, sport peers, non-swimmer friends, life  
5 partner, own children, other family members and health professionals. Constraints from own  
6 children were the sole predictor of functional commitment, with support from coach and constraints  
7 from training partners, life-partner and own children positive predictors of obligatory commitment.  
8 Health professionals' support was found to negatively predict obligatory commitment. To date,  
9 although this is the only study that has considered the effect of social influence on functional and  
10 obligatory commitment, it does suggest that different sources of social influence may impact the  
11 two commitment types differently.

12       The aim of this study was to investigate the roles played by coach and teammates in the  
13 development of sport commitment, and subsequently the influence of commitment upon  
14 participation in masters swimming. The first objective was to examine the influence on  
15 commitment provided by these two social agents in isolation (i.e., without considering the influence  
16 of other antecedent variables in bi-dimensional commitment model). Considering antecedents of  
17 sport commitment in isolation has some precedents in existing literature (e.g., Sousa, Torregrosa,  
18 Viladrich, Villamarin & Cruz, 2007; Young & Medic, 2011). For example, Young and Medic  
19 focused on the sole influence on commitment provided by social agents. Our choice to focus on  
20 coach and teammates was not only due to the relevance they have shown in literature but also to  
21 consider the potential for social support to increase masters' sports participation. To date, few  
22 studies have investigated the relationship between the bi-dimensional construct of sport  
23 commitment and behavioural outcomes. Therefore, the second objective of this study was to  
24 explore the effects of commitment type on the masters swimmers' choice of training climate. Based  
25 on Rubin and Rahe's (2010) suggestions that athlete's attain the greatest benefits from training in a

1 team under the supervision of a coach, we chose to compare hours for team training and  
2 unsupervised training climates.

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## Method

### 5 **Participants**

6 Five hundred and twenty-three Italian masters swimmers were recruited for the current study  
7 (male,  $n = 330$ ; female,  $n = 193$ ) with a mean age of 39.00 years ( $SD = 10.42$ ), ranging between 22  
8 and 83. Participants had on average 26.10 years of experience in swimming ( $SD = 13.23$ ) ranging  
9 from a minimum of 1 year to a maximum of 69 years of practice. Participants trained on average  
10 5.89 hours per week (ranging from 1 to 16 hours;  $SD = 2.31$ ), comprising both team (4.52 hours;  $SD$   
11  $= 2.32$ ) and non-supervised individual training (1.37 hours;  $SD = 2.09$ ).

### 12 **Measures**

13 *Descriptive variables.* Initial questions asked to participants for demographic information  
14 regarding age, gender, nationality, and years of swimming practice.

15 *Sport commitment.* In order to evaluate functional and obligatory commitment and the  
16 influence from each social agent (coach and teammates), we used a bi-dimensional commitment  
17 scale (Wilson et al., 2004) that has previously been adapted for use in adult sport (Young & Medic,  
18 2011). The questionnaire was translated into Italian language by the authors of the paper, and a  
19 preliminary pilot was conducted on 10 masters athletes (Santi, Saccinto, & Pietrantonio, 2013). Six  
20 subscales of the questionnaire were utilized: functional commitment (three items, e.g., “I am  
21 determined to keep doing my sport”), obligatory commitment (5 items, e.g., “I feel obligated to  
22 continue my sport involvement”), coach support (three items, e.g., “My coach encourages me to do  
23 my sport”), coach constraints (three items, e.g., “I have to keep doing my sport to please my  
24 coach”), team support (three items, e.g., “My teammates supports my sport involvement”), and  
25 team constraints (three items, e.g., “My teammates will think that I am a quitter if I stop doing my

1 sport”). Subscales and items are reported in Table 1. Answering options were offered on a Likert  
2 scale ranging from 1, “not at all true for me”, to 5, “very true for me”.

3 *Sport participation frequency.* Participation frequency was measured through two  
4 questions: 1) “In consideration of your weekly swimming training, how many hours do you train  
5 with a team supervised by a coach?” and 2) “In consideration of your weekly swimming training,  
6 how many hours do you train completely alone and without a supervision of a coach?”. Participants  
7 were asked to provide a response on a visual analogue scale ranging from 0 to 20 hours per week.

## 8 **Procedures**

9 Prior to recruitment, ethical permission to conduct the study was obtained from the  
10 institution ethics committee of the first author. Recruitment for this investigation was performed  
11 over a 5-week period (From 11 June 2012 to 13 July 2012). Participants were contacted either in  
12 person whilst participating in an annual FINA world masters championship, or via email using two  
13 Italian swimming websites (NuotoMania.it® and NuotoAcqueLibere.com®). All participants were  
14 invited to complete an online questionnaire realised on Qualtrics, an online survey software. The  
15 instructions for completion of the questionnaire contained relevant information to minimise social  
16 desirability effects via a focus on the need to give responses with honesty and that the information  
17 provided would be anonymous and treated with the strictest confidentiality.

## 18 **Data analysis**

19 Descriptive statistics, data distribution and Cronbach’s alpha analyses were performed using  
20 SPSS 20.0 with data subsequently analysed using AMOS Graphics 20.0. Two confirmatory factor  
21 analyses (CFA) were conducted in order to examine the structural validity of the commitment  
22 dimensions and social determinants. Structural equation modelling (SEM) analyses were then  
23 conducted to examine the predictive capabilities of the social determinants upon the two types of  
24 sport commitment, functional and obligatory, and the subsequent effect on two outcomes relating to  
25 individual and team training behaviors.

## 26 **Results**

1 Distribution analysis indicated that asymmetry and kurtosis were acceptable for all  
2 variables. Cronbach's alpha values (functional commitment = .77; obligatory commitment = .73;  
3 coach support = .92; coach constraints = .66; teammates support = .91; teammates constraints = .63)  
4 confirmed the internal consistency reliability of the translated version of the questionnaire, making  
5 it possible to analyse data using SEM. SEM provides a fit for the whole model, in particular: a ratio  
6 between Chi-square and degrees of freedom lower than 5 indicates an acceptable model;  
7 Comparative Fit Index (CFI), Non-normed Fit Index (NNFI) and Incremental Fit Index (IFI) must  
8 be equal to 0.90 or higher; finally a Root Mean Square Error of Approximation (RMSEA) lower  
9 than .10 is acceptable, while an RMSEA lower than .05 is considered excellent (Byrne, 2010).

10 Initially, the CFA for the commitment dimensions showed a poor fit. An item from the  
11 obligatory commitment scale ("I feel it is necessary for me to continue my sport involvement") was  
12 subsequently removed due to its poor loading (.28), and two items in the same scale were allowed  
13 to correlate due to the similarity of their content ("I feel that my sport involvement is a duty" and "I  
14 feel obligated to continue my sport involvement"). The CFA for the final model (Figure 1) showed  
15 an acceptable fit ( $X^2=33.7(12)$ ;  $CFI=0.98$ ;  $NNFI=0.97$ ;  $IFI=0.98$ ;  $RMSEA=.059$  [90% CI=.036-  
16 .083]) and estimates evidenced that all items had significant loadings according to Hair, Tatham,  
17 Anderson, and Black (1998), who asserted that, with a sample of 350 participants or more, factor  
18 loadings higher than .30 should be considered to have practical significance. Additionally, results  
19 showed that there was no significant correlation between functional and obligatory commitment  
20 highlighting these as two different constructs.

21 Initial CFA for social determinants also showed an unacceptable fit. Items from the coach  
22 and teammates subscales with the same content (e.g., "my coach encourages me to do my sport",  
23 "my teammates encourage me to do my sport") were subsequently allowed to correlate, as items  
24 with similar wording tend to covary (Byrne, 2010). Modification indices identified that in both  
25 subscales one item related to constraints had also a significant loading on support. This was likely  
26 due to the wording of the two items, "my coach/my teammates will be disappointed if I quit my

1 sport”, not exclusively expressing a sense of constriction. However, as the two items were  
2 significant also for constraints, there was no reason to remove them, therefore a regression path was  
3 drawn from coach support and teammates support on these two items (Byrne, 2010). The CFA for  
4 the modified model (Figure 2) showed an acceptable fit ( $X^2=102.3(40)$ ;  $CFI=0.98$ ;  $NNFI=0.97$ ;  
5  $IFI=0.98$ ;  $RMSEA=.055$  [90% CI=.042-.068]) confirming structural validity of social determinants  
6 and suggesting all items had significant loadings above .30.

7 For the main analyses, SEM was employed to investigate the effect of social agents on  
8 commitment, and then the different types of commitment upon participation frequency. The  
9 structural model (Figure 3) showed a good fit in explaining sport participation ( $X^2=357.6(179)$ ;  
10  $CFI=0.97$ ;  $NNFI=0.96$ ;  $IFI=0.97$ ;  $RMSEA=.045$  [90% CI=.038-.052]). Social agents were shown to  
11 have an effect on both functional and obligatory commitment. In particular, support provided by  
12 both coach ( $\beta =.15$ ) and teammates ( $\beta =.37$ ) enhanced functional commitment, whilst constraints  
13 from both social agents determined an increase in obligatory commitment ( $\beta =.20$  coach;  $\beta =.31$   
14 teammates), and coach constraints determined a decrease in functional commitment ( $\beta =-.19$ ).  
15 Other beta coefficients were not significant. When considering the effects of commitment type on  
16 participation, functional commitment was the sole predictor of supervised team training hours ( $\beta$   
17  $=.16$ ), but was not significant in predicting individual training, while obligatory commitment  
18 predicted individual training ( $\beta =.10$ ), but not supervised team training. Collectively, the model  
19 explained the 21% of the variance for functional commitment and the 21% for obligatory  
20 commitment, and accounted for 3% of supervised team training participation and 1% of non-  
21 supervised individual training.

## 22 Discussion

23 The aim of this study was to investigate how support and constraints provided by coach and  
24 teammates influence sport commitment and consequently participation in masters swimming. Our  
25 findings show that support from coach and teammates enhances functional commitment in masters  
26 swimmers while it has no effect on obligatory commitment. This suggests that a supportive attitude



1 by social agents leads to a voluntary approach to sport, despite the fact that research to date has  
2 shown little association between social support and functional commitment. This is in contrast to  
3 significant associations between social support and obligatory commitment (Wigglesworth, Young,  
4 Medic, & Grove, 2012; Young & Medic, 2011; Young, Piamonte, Grove, & Medic, 2011). For  
5 example, studies adopting the bi-dimensional construct of commitment have found some evidence  
6 to suggest a negative influence from social support on obligatory commitment (Young & Medic,  
7 2011; Young, Piamonte, Grove, & Medic, 2011). In particular, Wigglesworth and colleagues  
8 (2012) found an inverse association between social support and obligatory commitment in male  
9 masters swimmers. In contrast, our findings are in line with other motivation-based studies that  
10 have found perceived social support from both coach (Gillet, Vallerand, Amoura, & Baldes, 2010),  
11 and teammates (DeFreese & Smith, 2013) to have a positive effect on self-determined motivation,  
12 highlighting that perceived social support from coaches and teammates is associated with greater  
13 report of voluntary commitment to sport.

14 With regards social constraints, our study results suggest perceived pressure and obligation  
15 from coach and teammates lead to increased obligatory commitment, and that high coach  
16 constraints lead to a decrease in functional commitment. This is in line with previous studies where  
17 perceived social constraints from other people (Wilson et al., 2004) or from sport peers (Young &  
18 Medic, 2011) have been found to increase obligatory commitment. Our findings support, therefore,  
19 the previous literature on sport commitment and highlight that perceived social constraints  
20 determine a sense of duty in carrying on the activity (Wilson et al., 2004; Young & Medic, 2011).  
21 To date, little is known about the causal effect of constraints on functional commitment, in  
22 particular in Young and Medic's study (2011), constraints from own children showed a positive  
23 effect on functional commitment. In contrast, in our study coach constraints were found to  
24 negatively affect the will of masters athletes. However, this result is partially supported by Weiss  
25 and colleagues' (2003, 2006) findings who found an association between those athletes with a low

1 attraction towards the activity and the perception of high constraints from social agents including  
2 coach.

3       The present investigation shows that both functional and obligatory commitments predict the  
4 amount of weekly training hours undertaken by masters swimmers. In particular functional  
5 commitment was the sole predictor of hours of swimming training in a team supervised by a coach,  
6 while obligatory commitment was found to predict hours of non-supervised individual training.  
7 Support for the effect of sport commitment in increasing participation frequency can be found in the  
8 existing literature that has adopted a uni-dimensional approach to the construct (Casper et al.,  
9 2007). Indeed, the fact that a voluntary approach to activity is predictive of the choice to participate  
10 in physical activity is supported by Wilson and colleagues' (2004) findings. Although no previous  
11 studies on sport commitment have identified that a commitment determined by a sense of obligation  
12 results in increased training hours, there are similarities with Duncan, Hall, Wilson, and Jenny's  
13 (2010) findings, which suggest that the controlled motivation of regular female exercisers is  
14 predictive of the exercise intensity adopted.

15       In summary, the findings of our study suggest that, in the context of masters swimming,  
16 support provided by coach and teammates increases group participation through an enhancement of  
17 functional commitment. Furthermore, perceived pressure from coach and teammates increases the  
18 obligatory commitment and consequently the individual training undertaken. High pressure from  
19 the coach may therefore have a negative effect on participation in the swimming team by reducing  
20 the functional commitment of masters athletes. Teammates support and constraints held a stronger  
21 impact on functional and obligatory commitments when compared to respective influences of the  
22 coach. This may have occurred because teammates represent a social network which makes  
23 possible the sharing of goals, lifestyles and difficulties, developing a sense of relatedness between  
24 members (Allender et al., 2006; Hassell, Sabiston, & Bloom, 2010). Our results also support the  
25 need to adopt a bi-dimensional construct for the measurement of sport commitment as the two  
26 forms of commitment have differential effects on the behaviors in different training climates.

1           While our study has highlighted potential relationships between sources of social influence,  
2           commitment and training behaviors, a number of limitations should be noted. First, the choice to  
3           investigate the influence of social agents in isolation does not allow for consideration of our results  
4           in relation to all the antecedents of the Sport Commitment Model. On the other hand, the focus on  
5           social agents increases knowledge regarding the role played by social factors, providing further  
6           directions for the implementation of social support based interventions aimed to increase sport  
7           commitment and participation. A second issue regards the measurement of training participation  
8           frequency, which was measured by asking participants to self-report the amount of training hours  
9           undertaken. Although this approach allowed us to achieve a larger population sample, self-report  
10          measures present the potential for the participants to report a false attendance level and mask  
11          under/over-training. We did, however, adopt anonymous surveying, via the internet, an approach  
12          that has been previously found to avoid interferences and reduce social desirability effect (e.g.,  
13          McBurney, 1996). The adoption of appropriate measures will allow researchers to consider the  
14          social desirability bias and evaluate the accuracy of data (Paulhus, 2002). For example, in order to  
15          control the potential bias associated with self-reported data, the coaches can directly measure level  
16          of team participation. Moreover, although the training participation measure used in our study was  
17          acceptable, we suggest that future studies measure this variable using a pre-validated self-report  
18          instrument to ensure data collection is both accurate and consistent with previous studies in this  
19          area. Third, because we used a cross-sectional design we were unable to measure participation  
20          related constructs such as drop-out, or make conclusions with regards to causality. However,  
21          research on motivation and commitment has highlighted the relationship between non-volitional  
22          perceptions and intention to quit the activity (e.g., Lukwu & Lujan, 2011; Ryan & Deci, 2007;  
23          Weiss & Weiss, 2006). The majority of studies that have considered this issue have registered  
24          participation 1-year post completion of the first survey (Lukwu & Lujan, 2011; Weiss & Weiss,  
25          2006); therefore a longitudinal study design would permit this outcome to also be assessed.

1 Future research on this topic should also consider more in-depth study of participation in  
2 masters sports. For example, qualitative studies may be able to understand which coach and  
3 teammates' behaviours and communication styles are perceived more supportive/constrictive.  
4 Considering the wide age range in masters sports, future studies may investigate how the  
5 relationship between antecedents and commitment dimensions or between commitment and  
6 participation changes as a function of age. For example, in a previous study on masters swimmers,  
7 age emerged as a moderator on the relationships between the various antecedents and two types of  
8 commitment (Young, Piamonte, Grove, & Medic, 2011). A greater knowledge of these aspects  
9 would therefore allow evaluation of the effectiveness of social support-based interventions.  
10 Interventions of this nature have the capacity to provide athletes with essential support to increase  
11 participation within the group (Rosenfeld & Richman, 1997).

12 A further consideration for future research is the ongoing development of the bi-dimensional  
13 commitment scale used in this study. The current findings supported the internal consistency  
14 reliability of this instrument, confirming the factorial validity of the two different commitment  
15 types, as well as social support and constraints variables related to coach and teammates. However,  
16 some items need to be reworded in order to ensure the effective measurement of sport commitment  
17 determinants. Based upon issues experienced in this investigation, we recommend that the items  
18 "my coach will be disappointed if I quit my sport" and "my teammates will be disappointed if I quit  
19 my sport" should be reconsidered because we think these items are likely to be misinterpreted by  
20 respondents.

21 Future studies also need to explore possible extensions of the proposed model to different  
22 populations as it is likely the effect of social agents may vary based on the population studied  
23 (Weiss & Weiss, 2006, 2007). For example, Weiss and Weiss (2006, 2007) have highlighted the  
24 importance of other social agents, such as parents or best friend, when developing sport  
25 commitment in youth sport context. There is a possibility that the importance of social support may  
26 vary across different contexts. For example, previous research has reported an inverse relationship

1 between the importance of social support from certain agents and athlete age, suggesting social  
2 support is most important for young athletes (Weiss & Weiss, 2007). We suggest that conducting  
3 this research among a more heterogeneous sample would allow for the extension of these findings  
4 to a larger population, permitting practitioners to develop interventions focused on the promotion of  
5 participation in sport and physical activity. In addition, while this investigation outlines the  
6 importance of sport commitment towards effective participation in competitive sports, there is little  
7 understanding of the effects the various types of commitment have towards a number of different  
8 outcomes synonymous to participation in sport, such as adherence to treatment during rehabilitation  
9 following sport injury.

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1 **Tables and figures**

2 *Figure 1.* CFA of commitment dimensions. Model fit:  $X^2=33.7(12)$ ;  $CFI=0.98$ ;  $NNFI=0.97$ ;  
3  $IFI=0.98$ ;  $RMSEA=.059$  [90% CI=.036-.083]. Large circles represent latent SCS-Ita factors. Small  
4 rectangles represent manifest SCS-Ita items. Standardized factor loadings ( $\lambda$ s) are placed along the  
5 pathway from latent dimension factors to each manifest SCS-Ita item (all significant at  $p<0.001$ ).  
6 Small circles represent residual error variances. Correlation between functional and obligatory  
7 commitment is not significant.

8

9 *Figure 2.* CFA of social determinants. Model fit:  $X^2=102.3(40)$ ;  $CFI=0.98$ ;  $NNFI=0.97$ ;  $IFI=0.98$ ;  
10  $RMSEA=.055$  [90% CI=.042-.068]. Large circles represent latent SCS-Ita factors. Small rectangles  
11 represent manifest SCS-Ita items. Standardized factor loadings ( $\lambda$ s) are placed along the pathway  
12 from latent dimension factors to each manifest SCS-Ita item (all significant at  $p<0.001$ ). Small  
13 circles represent residual error variances. Correlation between teammates constraints and coach  
14 support is not significant. All other correlations are significant at  $p<0.001$ .

15

16 *Figure 3.* Structural equation modelling predicting dimensions of commitment and participation  
17 behaviors from social determinants. Model fit:  $X^2=357.6(179)$ ;  $CFI=0.97$ ;  $NNFI=0.96$ ;  $IFI=0.97$ ;  
18  $RMSEA=.045$  [90% CI=.038-.052]. Pathway coefficients represent standardized estimates using  
19 maximum likelihood estimation procedures. Small circles represent residual error variances.  
20 Standardized estimates  $> 0.10$  are significant at  $p < 0.05$ . All other standardized estimates are non-  
21 significant; dashed lines represent non-significant paths.

1 *Table 1. Subscales and items of the Sport Commitment Scale – Italian Version (SCS-Ita).*

	Sport Commitment Scale	SCS-Ita
Item number	<i>Original item wording</i>	<i>Italian translation</i>
1	I am determined to keep doing my sport	Sono determinato nel continuare a praticare il mio sport
2	I am dedicated to keep doing my sport	Dedico del tempo al mio sport
3	I am committed to keep doing my sport	Sono coinvolto nel continuare a praticare il mio sport
4	I feel that my sport involvement is a duty	Sento che impegnarmi nel mio sport è un dovere
5	I feel obligated to continue my sport involvement	Mi sento obbligato a continuare nel mio impegno sportivo
6	I feel forced to continue my sport involvement	Mi sento forzato a continuare nel mio impegno sportivo
7	I feel compelled to continue my sport involvement	Mi sento costretto a continuare nel mio impegno sportivo
8*	I feel it is necessary for me to continue my sport involvement	Sento che sia necessario per me continuare nel mio impegno sportivo
Coach 1	My coach encourages me to do my sport	Il mio allenatore mi incoraggia a praticare il mio sport
Coach 2	My coach supports my sport involvement	Il mio allenatore supporta il mio impegno nello sport
Coach 3	My coach thinks it is okay for me to do my sport	Il mio allenatore pensa che per me vada bene praticare il mio sport
Coach 4	I have to keep doing my sport to please my coach	Devo continuare a fare il mio sport per fare piacere al mio allenatore
Coach 5	My coach would be disappointed with me if I quit my sport	Il mio allenatore sarebbe deluso se lasciassi il mio sport
Coach 6	My coach will think that I am a quitter if I stop doing my sport	Se smettessi di praticare il mio sport il mio allenatore penserebbe che io mi arrenda facilmente
Teammates 1	My teammates encourage me to do my sport	I miei compagni di squadra mi incoraggiano a praticare il mio sport
Teammates 2	My teammates support my sport involvement	I miei compagni di squadra supportano il mio impegno nello sport
Teammates 3	My teammates think it is okay for me to do my sport	I miei compagni di squadra pensano che per me vada bene praticare il mio sport
Teammates 4	I have to keep doing my sport to please my teammates	Devo continuare a fare il mio sport per fare piacere ai miei compagni di squadra
Teammates 5	My teammates would be disappointed with me if I quit my sport	I miei compagni di squadra sarebbero delusi se lasciassi il mio sport
Teammates 6	My teammates will think that I am a quitter if I stop doing my sport	Se smettessi di praticare il mio sport i miei compagni di squadra penserebbero che io mi arrenda facilmente

2 \*removed item

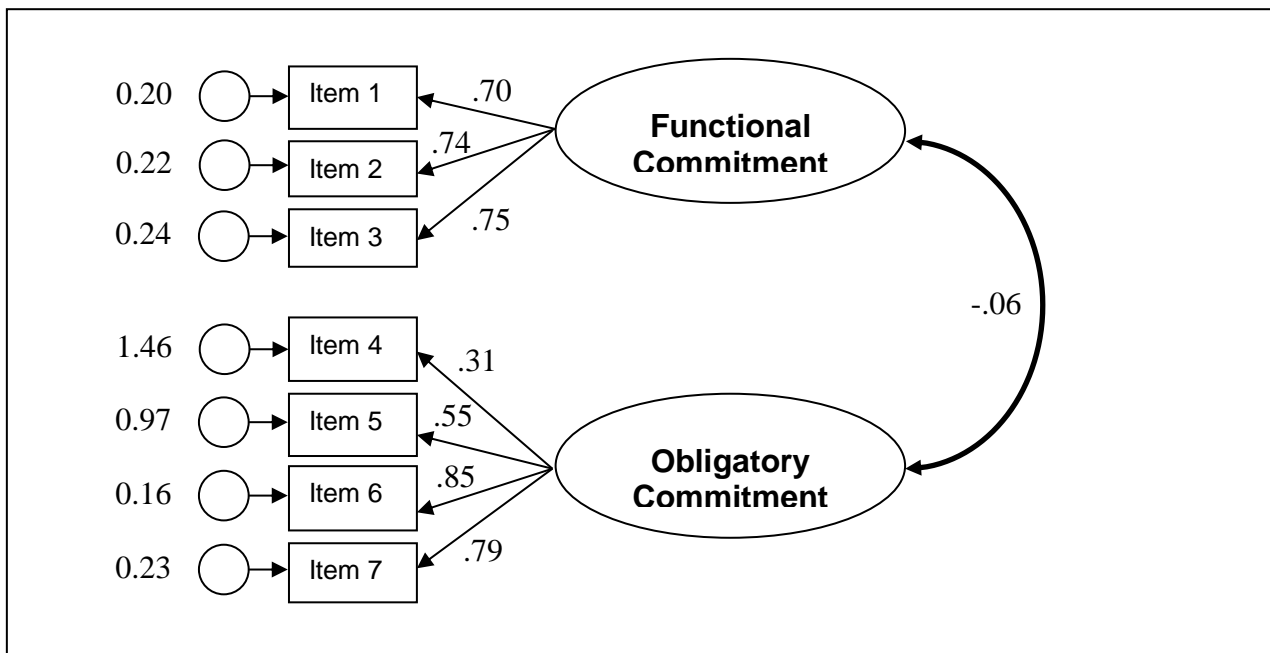


Figure 1.

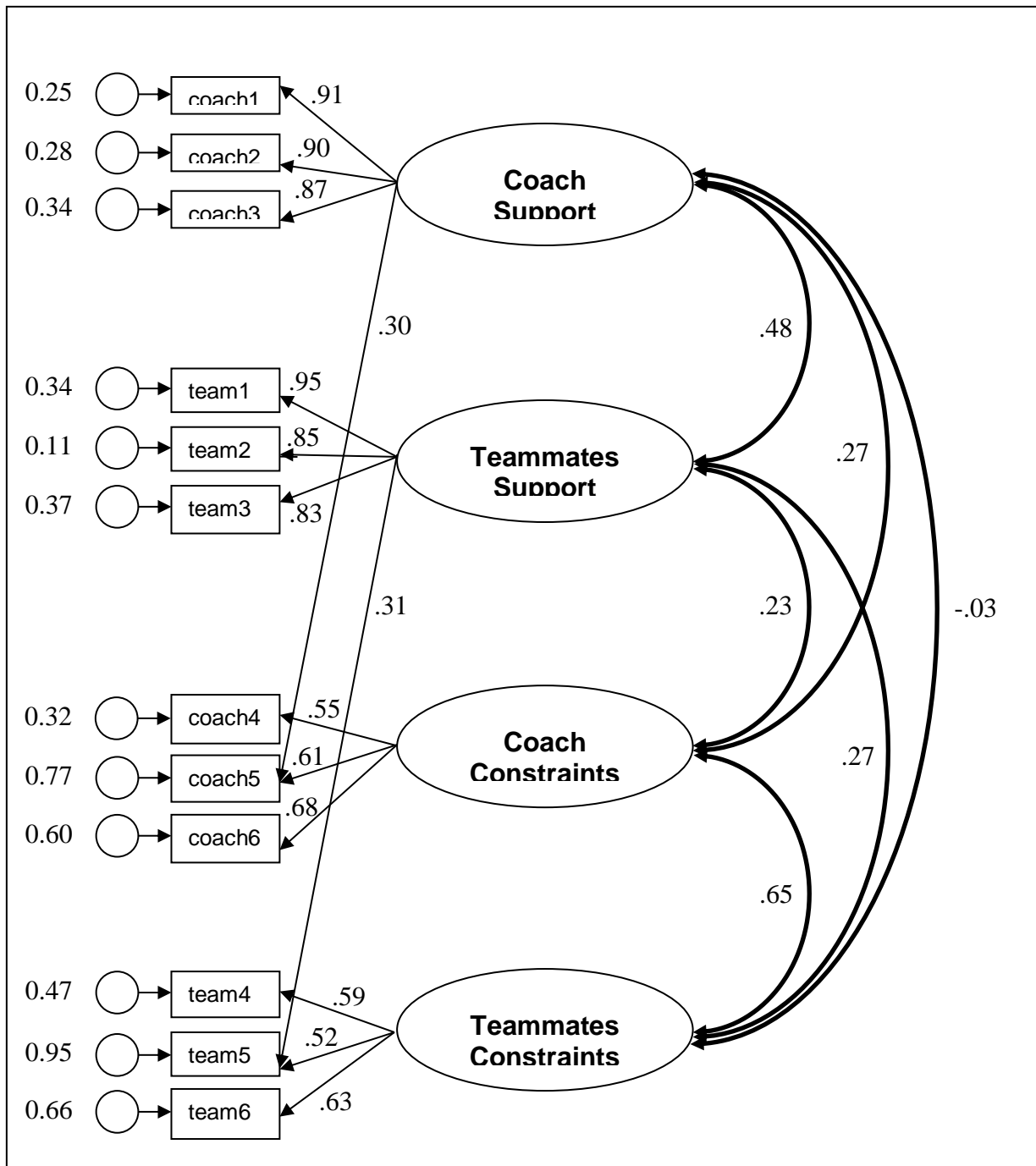


Figure 2.

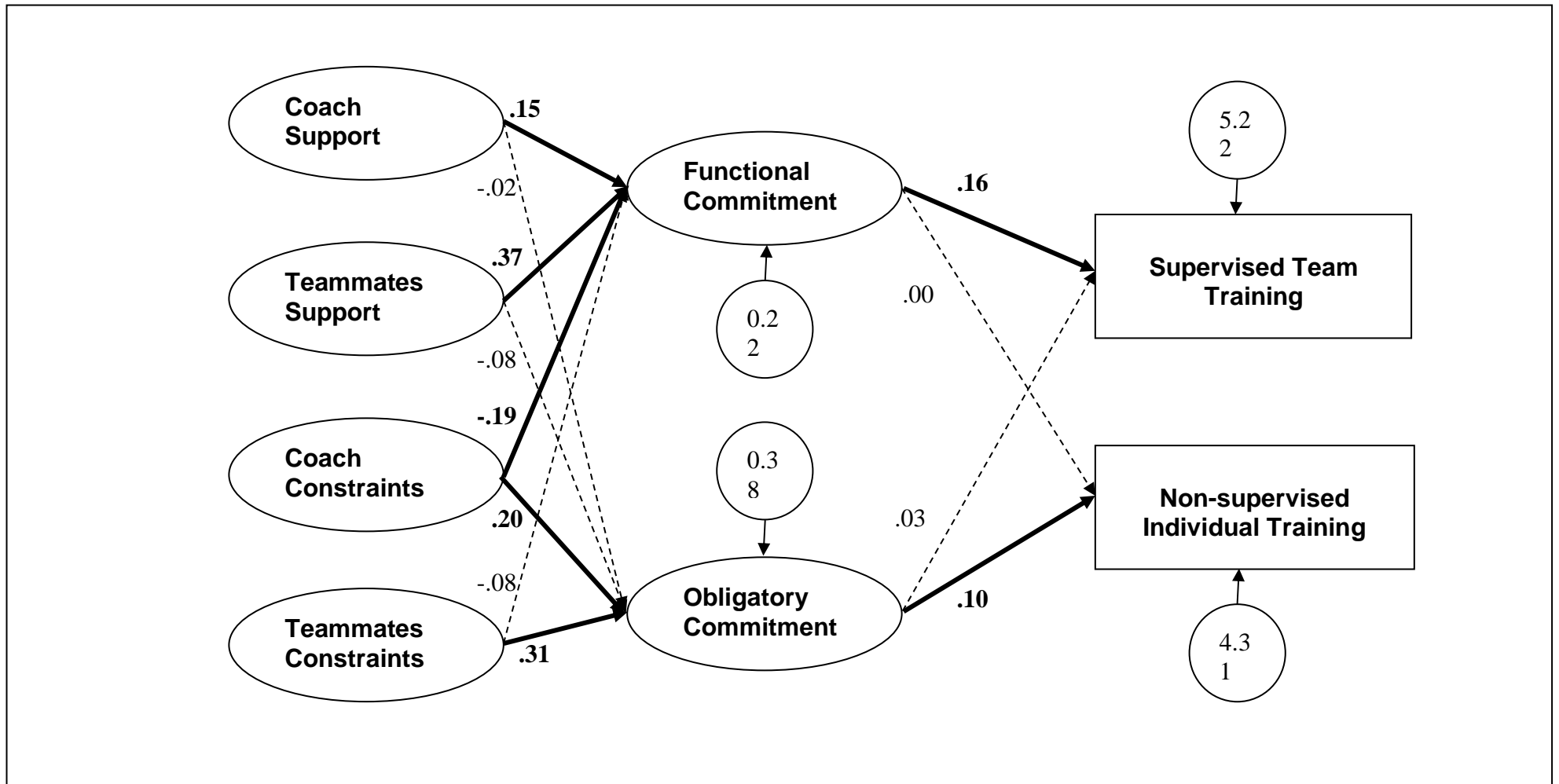


Figure 3.