

Developing a Scale to Explore Runners' Motivation to Participate in a Mass Participation Sport Event

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Mass Participation Sport Events (MPSE), a population-based intervention designed to facilitate individuals to increase their levels of physical activity and shape healthier lifestyles (Funk et al., 2011), are experiencing a historic growth trend in recent years. In total, 13.9 million participants completed road races in the US in 2011, the eighth consecutive year that a new US record was set (Running USA, 2012). In the midst of this Second Running Boom, it has become increasingly essential to understand participant motivation. While sport scholars have developed an array of multi-attribute scales focused either on individuals' motives for engaging in physical activities or motives for attending sporting events (Funk et al., 2009; Markland & Ingledew, 1997; Masters et al., 1993), researchers have yet to introduce a survey tool to adequately capture reasons for participating. Therefore, the integration of both approaches should facilitate academic efforts to build a coherent body of knowledge that is truly grounded in the MPSE phenomenon.

In order to create a valid measure of MPSE motivation, it is necessary to consider participants' motives for engaging in physical activity, as well as event-specific contextual attributes, which appeal to participants. Accordingly, the refined Exercise Motivation Inventory (EMI-2) (Markland & Ingledew, 1997) and SPEED scale (Funk et al., 2009) provide a useful foundation from which to construct an insightful, reliable, and parsimonious instrument. Funk et al. (2011) suggested that the EMI-2 is one of the most popular and comprehensive measures used to identify generic exercise motives. This instrument evaluates 14 specific motives, which represent a wide range of mental and physical benefits linked to exercise (e.g., affiliation, appearance, challenge, competition, enjoyment, health pressures, etc.) (Ingledew & Markland, 2008). The EMI-2 has been shown to provide a valid assessment of individuals' personal motives for engaging in exercise across gender (Markland & Ingledew, 1997), age groups (Dacey et al., 2008), and level of physical activity (Dacey et al., 2008; Markland & Ingledew, 2007). However, the application of generic exercise motives is necessary but not sufficient to fully explain sport event participation, as this approach neglects to consider event-specific attributes. Hence, the SPEED scale (Funk et al., 2009) offers valuable insight into event-related factors that motivate sport event attendance. This measure "conceptualizes spectator motivation as representing five motivational content facets: socialization, performance, excitement, esteem, and diversion" (Funk et al., 2009, p. 129). While this content "represent(s) a convergence of constructs from previous instruments" (Funk et al., 2009, p. 129), the authors' attempt to satisfy practitioner demands for shorter and more efficient measures prevented them from incorporating generic exercise motives into their parsimonious instrument.

From an empirical perspective, the process of scale development, especially model specification and measurement validation, continues to be challenging. Edward and Bagozzi (2000) introduced the concepts of reflective and formative measures. They emphasized that the value of understanding the nature and direction of relationships between unidimensional latent constructs and their indicators, as well as the relationships among higher order model structures, cannot be overestimated. Any potential oversight or ambiguity may result in the increased likelihood of committing a Type I error in model specification. For example, within the Motivation of Marathoners Scale (MOMS) (Masters et al., 1993), given multidimensional nature of the focal construct, the second-order construct (Achievement Motive) should be formed rather than reflected by the first order construct of Competition & Personal Goal Achievement. Subsequently, Jarvis et al. (2003) asserted that conceptual and mathematical distinctions between reflective and formative measurement models have been neglected in the previous consumer research. They suggested that a multiple indicators and multiple causes (MIMIC) model (Jöreskog & Goldberger, 1975) provides a rigorous approach to conventional scale validation and enables researchers to conceptualize and configure models with correct causality specifications. With this in mind, the purpose of the current research is to

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utilize a MIMIC model to develop an instrument to advance our understanding of the formation of participants' motives within the unique context of MPSE.

In order to examine individuals' exercise and event-related motives for participation in MPSE, a multivariate post-event survey was distributed to participants of a running event held in the northeastern US (N=2,324). Demographic profile of participants included 57% were female, 59% were between the ages of 25 and 44, and 59% were married or living with partners. The majority of participants were Caucasian (88%), educated (83% were college graduates), and affluent (61% had an annual household income greater than \$75,000). In accordance with the scale development procedure illustrated by Ross, James and Vargas (2006), a panel of experts was invited to review and edit a pool of 18 selected items from the original EMI-2 (Markland & Ingledew, 1997) and SPEED scale (Funk et al., 2009) to ensure face and content validity before exploratory factor analysis was performed. All nine first-order facets were assessed using two 7-point Likert scales (anchored at [1] strongly disagree and [7] strongly agree) randomly placed throughout the survey. The principal axis factoring (PAF) and promax rotation revealed that 7 first-order factors should be retained; this finding was supported by additional criteria including Kaiser's rule of eigenvalues greater than 1 (Kaiser, 1970), scree plot assessment (Zwick & Velicer, 1982) and Parallel Analysis (Horn, 1965; Fabrigar et al., 1999). An evaluation of Cronbach alphas and average variance explained (AVE) provided evidence to support satisfactory reliability, as well as convergent and discriminant validity of the 7 first-order constructs. Next, a MIMIC model was estimated with the retained seven factors (14 items) as proximal antecedents of participants' motives in general and two further items adopted and adapted from the Relative Autonomy Index (RAI; Grolnick & Ryan, 1987) as reflective indicators of the construct. After removing the construct (Health Prevention) with non-significant parameters, the final model, consisting of 6 dimensions measured by 12 items: Well-being (M=4.53), Self-confidence (M=4.72), Competition (M=5.18), Exercise Enjoyment (M=5.85), Social (M=5.08), and Event Excitement (M=6.29), displayed a good model fit ($\chi^2=2315.7$, $df=56$; RMSEA=.056; SRMR=.03; GFI=.929; NNFI=.938; CFI=.933) with all weights statistically significant at $p<.001$, and a R^2 of .62.

In summary, the refined MPSE motivation scale conceptually offers a comprehensive yet parsimonious instrument with which to assess runners' exercise and event related motives to participate in MPSE. Furthermore, this measure presents an empirical illustration of how MIMIC models can be used as a rigorous tool for a scale development and validation with correct model specifications (i.e., describe participants' motivation as a reflective first-order and formative second-order construct). Future research may not only utilize the current hybrid model to understand participation motives within other MPSE contexts, but might also evaluate participants' motives collectively with regards to potential outcome variables, such as future intention for physical active leisure (Funk et al., 2011). Finally, the key practical implications are twofold. MPSE organizers can use this scale to customize marketing materials to convince individuals of the values associated with the aforementioned assorted motivations that event participation can deliver to participants. Additionally, event practitioners can conduct marketing segmentation analyses based on individuals' motive scores generated from the current scale.