JOURNAL OF PHYSICAL ACTIVITY NUTRITION AND REHABILITATION

Journal of Physical Activity, Nutrition and Rehabilitation, 2025
www.panr.com.cy
info.panr@unic.ac.cy

Structural Validity and Reliability of the "Dance Motivation Inventory (DMI)" in the Greek Dance Environment

Koultzi, A., Pitsi, A., Masadis, Gr., Emmanouilidou, K., Koufou, N., Konstantinidis, Ch., Mavridou Z., & Bebetsos, E.

Department of Physical Education & Sports Sciences/D.U.Th.

Koultzi A. MSc in Physical Education, annakoultzi@gmail.com

*Pitsi A. Specialized Teaching Staff, apitsi@phyed.duth.gr

Masadis Gr. Ph.D. in Physical Education, gmasadis@phyed.duth.gr

Emmanouilidou K. Specialized Teaching Staff, kemmanou@phyed.duth.gr

Koufou N. Specialized Teaching Staff, nkoufou@phyed.duth.gr

Konstantinidis Ch. Ph.D. in Physical Education, konstanc@phyed.duth.gr

Mavridou, Z. MSc in Physical Education, zmavrido@phyed.duth.gr

Bebetsos Ev. Professor, empempet@phyed.duth.gr

Abstract

The objective of the study was to assess the structural validity and reliability of the questionnaire "Dance Motivation Inventory (DMI)" in the dance environment. The type of dance as a factor of motivational differentiation has been examined. Study's sample consisted of 768 dancers. The scale consists of 43 questions and nine factors. Statistical analysis included: descriptive statistics, exploratory/confirmatory factor analysis, reliability analysis, one-way Anova. The results of the confirmatory factor analysis demonstrated that the hypothesized model produced a significant, normed fit index and comparative fit index. The root mean square error of approximation was also considered to assess the degree extent to which the model of fit of. Composite reliability and average variance extracted of all dimensions of DMI demonstrated an acceptable reliability coefficient. The DMI is a reliable questionnaire for measuring dancers' motivation to participate. The type of dance partially differentiates the motivation to participate.

Keywords: motivation, amotivation, traditional and modern dance

1 Introduction

According to Robbins and Judge (2011), motivation is a set of processes that explain not only the intensity but also the direction and perseverance of the efforts made by a person to be able to achieve the goal he has set (Robbins & Judge, 2011). According to the above definition of motivation, there are three elements that characterize it: energy/intensity (the degree of effort made to achieve the goal set, which means that the enthusiastic participant is willing to make a lot of effort and work hard), direction (the goal for which the effort is made) and perseverance, i.e. the

*Corresponding author: e-mail: apitsi@phyed.duth.gr

continuity/duration of the effort made to achieve its goal, i.e. expresses the degree of commitment of the participant to the success of his/her goals.

Quite a large number of studies have been carried out that investigate the motivation of adults to participate in Greek dance lessons and not only. A common feature of all these, as will be shown below, is the use of questionnaires that were constructed to measure motivation to participate in various sports activities or in Physical Education class. More specifically: Doulias, Kosmidou, Pavlogiannis and Patsiaouras (2005) used the "Participation Motivation Questionnaire" (PMQ) by Gill, Gross and Huddleston (1983), which assesses motivation to participate in sports and which has been adapted for the Greek population by Patsiaouras, Keramidas and Papanikolaou (2004). The original questionnaire consists of 30 questions while the Greek version consists of 32 after adding two questions to the "friendship" factor. These questions are divided into 8 factors that explore the concept of motivation. These factors are: 1. Participation for the improvement of skills (competences – skills) 2. Participation for success and prestige (social impact) 3. Participation for making friendships (friends) 4. Participation in energy release (energy) 5. Participation in a team (team) 6. Participation for fitness (fitness) 7. Participation for the dance challenge (challenge) 8. Participation for fun (fun). The questionnaire was also used in surveys conducted by Papaioannidou, Basdeki and Filippou (2005), Baxevanos (2008) and Filippou, Kipourou, Goulimaris, Serbezis, and Genti (2009). This questionnaire, according to Baxevanos, presented adjustment problems in the different countries where it was applied since the factors proposed by manufacturers were not confirmed in the respective applications as mentioned before. This, according to the above researcher and the questionnaire developers, is probably due to the different methodological approaches applied, the different ages and the cultural diversity of individuals.

Michaltsi (2008) conducted research with the participation of 451 foreigners who participated in Greek traditional dance teaching seminars. In the initial design of the survey, it was intended that research data would be gathered through semi-structured interviews. But the large turnout of foreigners led the researcher to turn the semi-structured interviews into a questionnaire to be filled out. The indexing of the answers shows that the participants chose to participate in these seminars because they wanted to come into contact and get to know – through dance – the Greek culture, to hang out with other people who have the same interests as them and in this way to eliminate boredom from everyday life.

Another questionnaire, constructed to measure motivation for participation in sports and adapted for use in Greek traditional dance, was the "Physical Activity and Leisure Motivation Scale" by Morris and Rogers (2004). The questionnaire was used in Greece by Filippou, Rokka and Mavridis (2016). The questionnaire includes 40 questions which are divided into 8 factors that explore the concept of motivation. These factors are: 1. "fitness", 2. "expected benefits", 3. "competition", 4. "appearance", 5. "pleasure/fun", 6. "learning process", 7. "socialisation" and 8. "relaxation". The answers were given on a 5-point Likert-type scale and during its 1st use in Greece it showed good adaptation. The authors investigated whether the type of dance - traditional and non-traditional - Latin and contemporary dance - differentiates participation motivation. In fact, they note that the type of dance differentiates the motivation for participation with traditional dancers participating to a greater extent because through their participation they have fun and relax while dancers from non-traditional forms participate for competition, to be in good physical condition and for the learning process.

Filippou, Tsitskari, Bebetsos and Goulimaris (2019) translated and weighted "The Behavioral Regulation in Sport Questionnaire (BRSQ)" by Lonsdale, Hodge and Rose (2008) to use in their surveys of a sample of adults participating in Greek traditional dance, classical ballet and contemporary dance classes. A prerequisite for participating in the surveys was to be involved in performance classes. It consists of 36 questions that explore nine factors that make up the concept of motivation as defined by the questionnaire developers. These factors are: 1. "amotivation", 2. "external regulation", 3. "introjected regulation", 4. "identified regulation", 5. "integrated regulation", 6. "intrinsic motivation general", 7. "intrinsic motivation-knowledge", 8. "intrinsic motivation-

stimulation", 9. "internal motivation for achievement/ Intrinsic Motivation – Accomplish". The answers were given on a seven-point Likert scale and the questionnaire showed very good behavior since during the process of its validation in the Greek population it showed good internal consistency. The authors also explored the type of dance as a differentiating factor in motivation to participate. The results show that participants in traditional dance groups seem to be more internally motivated than participants in non-traditional dance groups. Conversely, non-traditional dance dancers integrate their dance behavior into a general behavioural framework to a greater extent than traditional dance dancers as the 'goal achievement' motivation operates to a greater extent than in traditional dance dancers and they consider what they are doing to be very important, without necessarily enjoying their participation.

Biniakos, Goulimaris and Tsitskari (2020) used the "Exercise Motivation Inventory-2" (EMI-2) (Markland & Ingledew, 1997) as modified for the Greek population by Konsoulas, Tsitskari and Tzetzis (2017) for the needs of their research. EMI-2 is a continuation of the EMI (Markland & Hardy, 1993) and composed of 51 variables forming 14 subscales: Management, Revitalization, Enjoyment, Challenge, Social recognition, Affiliation, Competition, Health Pressures, Ill-Health Avoidance, Positive Health, Weight management, Appearance, Strength & endurance and Flexibility. Each subscale includes three or four variables that assess motivation to participate. The researchers, out of 51 questions, chose to use only 10, which were distributed among the factors "stress management", "social recognition" and "health". From the results of the survey, it is found that for the participants, the factor "social recognition" is the factor that primarily motivates them to participate in dance activities.

From what has been mentioned above, it can be seen that there is a noticeable absence of a questionnaire that investigates the reasons why a person participates in dance activities and was constructed for dance from the beginning since the questionnaires that were and still are used today to investigate the motivation to participate in dance activities were constructed to measure the motivation to participate in physical activities. For this reason, it is necessary to adapt a valid measurement instrument exclusively for dance, which will serve the research requirements of the field.

So, the objective of the present study was to assess the structural validity and reliability of the questionnaire "Dance Motivation Inventory (DMI)" by Maraz, Király, Urbán, Griffiths and Demetrovics (2015), with a view to its utilisation in research conducted within the context of the Greek dance environment. Furthermore, an investigation was conducted into the role of dance genre in differentiating participant motivation.

2 Methodology

The present paper is comprised of two discrete surveys/studies. The initial study involved the translation of the questionnaire into Greek, adhering to the guidelines outlined by Banville, Desroriers, and Genet-Volet (2000) (back-to-back translation) and accompanied by an exploratory factor analysis. This process entailed two distinct actions aimed at producing the questionnaire in Greek. In the second research/study, a confirmatory factor analysis was carried out with the aim of confirming the suitability of the questionnaire for use in the Greek dance environment. Furthermore, the type of dance was examined as a factor differentiating participation motivation.

1st survey

Sample: A total of 424 participants were included in the survey, of whom 113 were male (26.65%) and 311 were female (73.35%). With regard to the type of dance, 308 or 72.64% of participants attended Greek traditional dance classes, 37 or 8.73% Latin dance classes, 29 or 6.84%

contemporary dance activities, 28 or 6.60% classical ballet groups, and 22 or 5.19% ethnic dance classes.

Data collection instrument: For the purpose of data collection, the questionnaire entitled "Dance Motivation Inventory" (DMI) was employed. This questionnaire was developed by Maraz, Kiraly, Urbán, Griffiths and Demetrovics (2015) and examines the motivations behind individuals' participation in organized dance activities of a recreational nature. It should be noted that participants are not remunerated for their involvement. According to the developers of the questionnaire, the original version consisted of 51 questions. Following statistical processing, 29 questions were included in the final questionnaire, with the remaining 22 questions excluded due to non-compliance with the statistical indicators for inclusion.

The 29 questions are divided into eight factors which explore the concept of motivation. The eight factors are as follows: a. Fitness: comprising four questions, e.g. "I dance to be healthy", b. Mood Enhancement: comprising three questions, e.g. "I dance because it fills me up with energy", c. Intimacy: comprising five questions, e.g. "I dance because I am looking for a relationship", d. Socializing: comprising three questions, e.g. "I dance because I can meet many people like me", e. Trance: with four questions e.g. "I dance because I can experience ecstasy", f. Mastery: with three questions e.g. "I dance because it improves my coordination", g. Self-confidence: with three questions e.g. "because I feel sexy when dance", and h. Escapism: with four questions e.g. "I dance to avoid feeling the blues". Responses were given on a 5-point Likert-type scale from 1 = strongly disagree to 5 = strongly agree.

The constructors of the questionnaire assert that all factors demonstrate adequate internal consistency, with the values of the Cronbach's α index being satisfactory (Fitness: .91, Mood Enhancement: .81, Intimacy: .80, Socializing: .85, Trance: .90, Mastery: .73, Self-confidence: .81 and Escapism: .79).

Following a thorough discussion between the researchers, it was decided to include all 51 questions of the original questionnaire in the present research (exploratory factor analysis), since the questionnaire had not previously been used for research in the Greek dance environment.

***Process*:** In the initial phase of the procedure, the questionnaire was translated into Greek utilising the back-to-back translation technique, as recommended by Banville, Desrochers and Genet-Volet (2000), for questionnaires that have been developed for diverse cultural contexts from those to which they are to be administered.

The initial translation of the questionnaire into Greek was conducted by two English language teachers who specialise in translation. The two resulting texts were then compared with each other in order to produce a text that was acceptable to both of them. The comparison revealed that there was agreement on the translation of 45 questions, while there was disagreement on 6 questions. The discordance pertained to the utilisation of particular words rather than their inherent meanings. The subsequent phase entailed the questionnaire being re-translated into English by two other official translators, whose texts were then compared to identify a commonly agreed text. This text was then compared with the original questionnaire to identify and rectify any discrepancies. The process proved to be a resounding success, as the resulting text from the two translators was found to be in complete alignment with the original.

The questionnaire was given to 50 dancers of different educational levels and different dance genres to determine the clarity of the questions and their understanding before distribution for final completion. Of the total, 45 dancers suggested that an additional question be included - "I participate to make new friends". The suggestion was accepted and thus the questionnaire given for completion consisted of 52 questions/issues.

The questionnaire was completed using the Google Form platform. The link to the questionnaire was sent to dance club and group leaders and dance teachers and they in turn invited the dancers to participate in the survey.

***Statistical analysis*:** The statistical analyses performed were:

a. exploratory factor analysis,
b. internal consistency analysis using Cronbach's α index (Ouzouni & Nakakis, 2011).
c. descriptive statistics data (mean and standard deviation) to calculate the levels of motivation.
d. Checking the appropriateness and adequacy of the survey data to be included in the subsequent analysis was done using Kaiser- Myer - Olkin (KMO) and Bartlett's test of Sphericity (Hair, Black, Babin, Anderson, & Tatham, 2016), and Measure of Sampling Adequacy (MSA).

The KMO indicator, which ranges from 0 to 1, is a measure of the sampling adequacy. When the value is between 0.8 and 1, the sample is considered adequate. However, when the value approaches 0.6, it indicates that additional corrective measures are necessary. In some cases, the limit is set at 0.5 (Glen, 2016). Bartlett's test of Sphericity ($p < 0.05$) is a pivotal component of the analysis, as it assesses whether the correlations between variables permit the implementation of factor analysis. The Index of Sampling Suitability is a crucial metric in determining the suitability of a variable for analysis. Values ranging from .8 to .9 are considered optimal, indicating the necessary appropriateness of the variable, while values from .6 to .7 are deemed acceptable but lack the requisite reliability. Finally, values ≤ .5 should be excluded from further analysis.

2nd survey

Sample: A total of 344 dancers participated in the survey, encompassing a wide range of dance types, including Greek traditional dance, classical ballet, modern, Latin, and ethnic dance. The demographic characteristics of the sample are delineated in Table 1.

Table 1. Demographic characteristics of the sample

Dance type	Male		Female		Total	
Greek	60	17.4%	118	34.3%	178	51.7%
Classical ballet	11	3.2%	30	8.4%	41	11.9%
Modern	9	2.6%	31	9.0%	40	11.6%
Latin	22	6.5%	38	11.1%	60	17.4%
Ethnic	6	1.7%	19	5.5%	25	7.4%
Total	108	31.4%	235	68.3%	344	100%

Data collection instrument: The questionnaire administered during the initial survey was utilised for the collection of data. The questionnaire consists of 43 questions, which are divided into nine factors that explore the motivation to participate in dance activities. The factors are as follows: 1. The first factor, "Escapism", comprises six questions, with examples being "...to avoid feeling the blues". The second factor, "Mood Enhancement", comprises five questions, with examples being "...because when I dance, I feel happy". The third factor, "Friendship", comprises three questions, with examples being "...I can make new friends". The fourth factor, "Fitness", comprises five questions, with examples being "...to be fit". The fifth factor, "Trance", comprises four questions, with examples being "...because it feels like floating". The "relationship search" component comprises three questions of the form "....because I am looking for a sex partner". The "mastery" component comprises five questions of the form "....because my dancing constantly improves". The "self-confidence" component comprises six questions of the form "....because dancing improves

my self-esteem". The "socialising" component comprises six questions of the form "...because when I dance, I don't feel lonely".

Process: The survey was conducted via the Google Form platform. The link created was distributed to dance club and group leaders, as well as dance teachers, with the request that they forward it to dancers so that the survey could be completed. Assurances were given to ensure complete anonymity of the participants and that the results would be used exclusively for research purposes.

Statistical analysis: Statistical analyses included: descriptive statistics (Mean/M and Standard Deviation/S.D.), Confirmatory Factor Analysis (CFA), one-way Anova analysis to investigate possible differences due to dance type. The internal consistency of the factors was tested using the Composite Reliability (CR) and Average Variance Extracted (AVE) indices (Hair, Black, Babin, & Anderson, 2019). Internal consistency of the factor is acceptable when the CR index receives values ≥ .70 while for the AVE index values ≥ .50 are acceptable and indicate good structural validity. The reliability and goodness of fit indicators considered are as follows: a) minimum discrepancy/CMIN or χ^2; b) degrees of freedom/d.f.; c) Root Mean Square Error of Approximation (RMSEA); d) Standardized Root Mean Square Residual (SRMR); e) Comparative Fit Index/CFI; and f) Normed Fit Index (NFI) (Bentler, 1990; McDonald & Marsh, 1990).

3 Results

1st study

Exploratory factor analysis: An exploratory factor analysis was conducted to test the structural validity of the Dance Motivation Inventory of Maraz, Kiraly, Urbán, Griffiths and Demetrovics (2015) in the context of the Greek dance environment.

The initial stage of a factor analysis is to ascertain the suitability of the data for factor analysis using the Kaiser-Meyer-Olkin (KMO) and Bartlett's test of Sphericity hypothesis. In the present study, the KMO index was found to be .895, while Bartlett's test of Sphericity index was found to be 12010.69 (d.f. = 903 & p<.001). Consequently, the survey data is deemed to be suitable for factor analysis.

The subsequent stage of the research was to verify the suitability of the variables for participation in the factor analysis using the Measure of Sampling Adequacy (MSA) (Cerny & Kaiser, 2010). The results obtained indicate that the variables contained within the questionnaire can be utilised in the factor model, with the values ranging from .84, representing the lowest possible value, to .92, representing the highest possible value, with the exception of the variables "because it gives me a feeling of success", "because I receive much positive feedback", "because I can communicate with my partner beyond words", "because I like the predictable moves", "because I enjoy watching others dance", "to express myself", "because I like the atmosphere of the parties", "because I like leading my partner / I like to be led" and "because others respect me when I tell them that I dance". The MSA values for the aforementioned variables were found to be .23, .34, .34, .25, .28, .36, .31, .39 and .39, respectively, and thus, they were excluded from further exploratory factor analysis since they did not meet the criterion of MSA ≥ .70.

In order to verify the structural validity of the questionnaire, exploratory factor analysis was employed, utilising the principal component method with orthogonal rotation of the axes and an eigenvalue of each factor greater than unity. The results of the analysis substantiate the structural validity of the questionnaire, the 43 questions/variables are distributed and form nine factors and they are: a. Escapism with six questions, b. Mood Enhancement with five questions, c. Friendship with three questions, d. Fitness with five questions, e. Trance with four questions, f. Relationship search with three questions, g. Mastery with five questions, h. Self-confidence with six questions, i. Socializing: with six questions (Table 2).

The value of the Cronbach's α index was taken into accounting order to test the internal consistency of the factors. As demonstrated in Table 2, the value of the index for all factors is considered satisfactory since it is greater than .80.

Table 2. Characteristics of exploratory factor analysis

Questions	**Factors***								
I dance …	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
because dancing reduces daily stress	.789								
to enrich my every days	.630								
because I feel that I would miss something if I didn't dance	.711								
because when I dance, I don't have to deal with my everyday problems	.773								
because otherwise my life would be empty	.731								
to avoid feeling the blues	.794								
because when I dance, I feel happy		.710							
because dancing gives me pleasure		.695							
because it fills me up with energy		.798							
because I enjoyit		.795							
because dancing improves my mood		.748							
because I get to know new people			.944						
because I can meet my old friends/ acquaintances			.669						
I can make new friends			.946						
to be fit				.880					
to watch my lines				.770					
to be healthy				.838					
to exercise				.859					
to lose weight				.675					

because I can experience an altered state of mind	.673				
because I can experience a trance-like state	.769				
because it feels like floating	.890				
because I can experience ecstasy	.774				
because I am looking for a sex partner		.906			
because I am looking for a relationship		.890			
because girls are pretty / boys are handsome		.855			
because I like being in control of my body			.686		
because it improves my coordination			.688		
because I constantly improve			.752		
to show off my dancing skills to others			.795		
because my dancing constantly improves			.786		
because dancing improves my self-esteem				.749	
because dancing brings out the man/woman within me				.695	
because I constantly expand my physical limits				.713	
because it reduces my shyness				.662	
because the self-confidence I gain during dancing has a good effect on other areas in my life				.720	
because I feel sexy when I dance				.652	
because I am surrounded by people who think like me					.875
because I like the company					.671
because I like to be around people					.668
because it makes easy tosocialise					.745
because when I dance, I don't feel lonely					.675

because I can meet many people like me									.903
Total variance 67.88%									
Factor variance %	29.99	8.67	6.25	5.32	4.53	3.96	3.67	3.17	2.62
Eigen values	12.90	3.73	2.69	2.29	1.95	1.70	1.45	1.36	1.13
Cronbach's α	.90	.89	.88	.91	.88	.91	.83	.92	.90
M	4.07	4.59	4.04	3.85	4.07	2.11	4.11	3.40	4.06
S.D.	.85	.48	.60	.86	.76	.89	.64	.82	.70

*1. Escapism, 2. Mood Enhancement, 3. Friendship, 4. Fitness, 5. Trance, 6. Relationship search, 7. Mastery, 8. Self-confidence, 9. Socializing

As demonstrated in Table 2, the factor that garnered the most preferences from the sample was "Mood Enhancement" (M= 4.59), followed by "Mastery" (M= 4.11), "Escapism" (M= 4.07) and "Trance" (M= 4.07). Conversely, the factors "Relationship search" (M= 2.11) and "Self-confidence" (M= 3.40) received the least preferences in the sample.

2nd study

Confirmatory factor analysis was performed utilising the statistical software LISREL 8.80. The theoretical model was based on the model derived from the previous study. The parameter estimation method employed is that of principal components (Bentler, 1995). The theoretical model consists of nine factors (nine latent variables), of which the first is called "Escapism", the second "Mood Enhancement", the third "Friendship", the fourth "Fitness", the fifth "Trance", the sixth "Relationship search", the seventh "Mastery", the eighth "Self-confidence", and the ninth "Socializing".

The model shows a good fit when the indicators take the values: X^2/d.f. is <5 (Bentler, 1990), CFI and NFI are >.90 (Hu & Bentler, 1995), RMSEA is <.08 (Browne & Coudeck, 1993) and SRMR is <.05 (Hu & Bentler, 1999). The results of the study showed that the hypothetical model has a remarkable $X^2_{(824)}$ =3405.80, χ2/d.f. = 4.13, p < .001. The NFI and CFI were found to be .91 and .93 respectively. The RMSEA and SRMR values confirm the goodness of fit of the model since the RMSEA was found to be .053 and SRMR .041.

The total variance explained by the nine factors is 63.09%. The first factor, escapism, explains 28.21% of the total variance, while the second factor, mood enhancement, explains 8.07%. The third factor, friendship, explains 6.05%, and the fourth factor, fitness, explains 5.42%. The fifth factor, Trance, the sixth factor, Relationship Search, the seventh factor, Mastery, the eighth factor, Self-confidence, and the ninth factor, Socializing, explain 4.10%, 3.06%, 2.87%, 2.80%, and 2.45% of the total variance, respectively.

Reliability analysis. As can be seen from Table 3, all factors show acceptable values for both internal consistency and structural validity.

Table 3. Internal reliability of the nine factors

Construct	Item	CR	AVE
Escape	.789 .630 .711 .773 .731	.878	.548

	.794		
Mood Enhancement	.710 .790 .625 .735 .738	.844	.521
Intimacy	.944 .710 .880	.885	.723
Fitness	.820 .780 .810 .815 .685	.887	.612
Trance	.680 .820 .800 .741	.890	.619
Relationship search	.880 .820 .880	.895	.740
Mastery	.825 .680 .780 .780 .790	.881	.597
Self-confidence	.720 .680 .740 .680 .790 .680	.863	.513
Socializing	.840 .650 .650 .780 .690 .890	.887	.571

As illustrated by the results enumerated in Table 4, the outcomes of the present survey demonstrate significant congruence with those of the inaugural survey.

Table 4. M & S.D. of confirmatory factor analysis

	M	S.D.
Mood Enhancement	4.58	.82
Mastery	4.04	.54
Trance	4.01	.70
Escapism	3.96	.82
Socializing	3.92	.61
Friendship	3.88	.61
Fitness	3.64	.87
Self-confidence	3.50	.71
Relationship search	2.10	1.02

Dance type as a factor in the differentiation of participation motivation: Nine one-way Anova analyses were conducted to ascertain whether the type of dance the sample participates in is a factor in differentiating motivation to participate. The findings indicate that dance type is a distinguishing factor in the agents' participation motivation.
a. «Mastery»: $F_{(4, 339)}$= 22.32 & p< .001, b. «Trance»: $F_{(4, 339)}$= 7.57 & p< .001, c. «Escapism»: $F_{(4, 339)}$= 6.28 & p< .001, d. «Socializing»: $F_{(4, 339)}$= 6.96 & p< .001, e. «Intimacy »: $F_{(4, 339)}$= 5.20 & p< .001, f. «Self-confidence»: $F_{(4, 339)}$= 15.86 & p< .001 και g. «Relationship search»: $F_{(4, 339)}$= 14.54 & p< .001.
More specifically:
Mastery": Dancers specialising in Greek traditional dance (M = 3.84 & S.D. = .84) and ethnic dances (M = 3.81 & S.D. = .83) experience this to a lesser extent than their colleagues in classical ballet dance (M = 4.40 & S.D. = .71), contemporary dance (M = 4.32 & S.D. = .69) and Latin dances (M = 4.30 & S.D. = .72).
Trance": a. Contemporary dance dancers experience the factor to a greater extent (M = 4.41 & S.D. = .58) than their colleagues in Greek traditional dance (M = 3.96 & S.D. = .56), Latin (M = 3.77 & S.D. = .93) and ethnic (M = 3.88 & S.D. = .70) dances. b. Classical ballet dance dancers experience the factor to a greater extent (M = 4.27 & S.D. = .58) than their Latin dance colleagues (M = 3.77 & S.D. = .93).
"Escapism": dancers of classical ballet dance experience the factor to a greater extent (M = 4.40 & S.D. = .57) than their colleagues of Greek traditional dance (M = 3.83 & S.D. = .75), Latin (M = 3.89 & S.D. = 1.11) and ethnic (M = 3.84 & S.D. = .92) dances.
"Socializing": Latin dancers experience the factor to a greater extent (M = 4.21 & S.D. = .52) than their colleagues in Greek traditional dance (M = 3.93 & S.D. = .46), classical ballet dance (M = 3.67 & S.D. = .81) and contemporary dance (M = 3.69 & S.D. = .77).
"Friendship": Latin dancers experience the factor to a greater extent (M=4.16 & S.D. = .50) than their colleagues in Greek traditional dance (M= 3.81 & S.D. = .60) and ethnic (M=3.67 & S.D. = .70) dances.
"Self-confidence": Dancers of classical ballet experience the factor to a greater extent (M = 4.10 & S.D. = .60) than their colleagues in Greek traditional (M = 3.34 & S.D. = .56), Latin (M = 3.40 & S.D. = .93) and ethnic (M = 3.24 & S.D. = .77) dances.
"Relationship search": a. Contemporary dance dancers experience the factor to a greater extent (M= 2.91 & S.D. = 1.29) than their colleagues in Greek traditional dance (M= 1.83 & S.D. = .72), Latin (M= 2.30 & S.D. = 1.08) and ethnic (M= 1.63 & S.D. = .67) dances. b. Classical ballet dance dancers experience the factor to a greater extent (M = 2.46 & S.D. = 1.31) than their colleagues in Greek traditional dance (M = 1.83 & S.D. = .72), Latin (M = 2.30 & S.D. = 1.08) and ethnic (M = 1.63 & S.D. = .67) dances. c. Latin dancers experience the factor to a greater extent (M = 2.30 & S.D. = 1.08) than their colleagues in Greek traditional dance (M = 1.83 & S.D. = .72) and ethnic (M = 1.63 & S.D. = .67) dances.
In contrast, dance type is not a differentiating factor for the factors: a. "Mood Enhancement": $F_{(4, 339)}$ = .318 & p= .866, b. "Fitness": $F_{(4, 339)}$ = 3.31 & p= .068.

4 Discussion – conclusion

The aim of this work was to test the structural validity and reliability of the questionnaire "Dance Motivation Inventory (DMI)" by Maraz, Király, Urbán, Griffiths and Demetrovics (2015) so that it can be used in the Greek dance context. In addition, the type of dance was examined as a factor in differentiating participation motivation.

From testing the suitability of variables to participate in the exploratory factor analysis, taking into account the Measure of Sampling Adequacy, nine variables were excluded from the follow-up analysis since they did not meet the MSA criterion ≥ .70. All nine questions were excluded from the final questionnaire of Maraz, Király, Urbán, Griffiths and Demetrovics. In contrast, the remaining fourteen questions, along with the one added by the pilot survey, normally participated in the follow-up of the exploratory factor analysis, resulting in 43 questions. These 43 questions are broken down into nine factors, one in addition to the original questionnaire, that investigate motivations to participate in dance activities. This factor is 'friends', a factor not presented in the questionnaire of Maraz, Király, Urbán, Griffiths and Demetrovics.

A comparison of the final form of the two questionnaires reveals both similarities and some differences. More specifically, regarding the number of questions, the largest number of questions is found in the Greek version, since it includes both questions excluded from the questionnaire of Maraz, Király, Urbán, Griffiths and Demetrovics and one that was proposed by the participants in the pilot survey. Regarding the number of factors, in this case too, there is a differentiation between the two versions, with the Greek one presenting a factor – friends – which is absent from the foreign/original version. The observed differences between the two versions are probably due to cultural differences between the two samples, Hungarians and Greeks – or even to the composition of the sample since the Hungarian version did not involve dancers from traditional dance but only from Salsa and ballroom dances.

Regarding the internal coherence of the nine factors, it is highly satisfactory since Cronbach's α index received values higher than .80. Comparing the two versions of the questionnaire for all eight common factors, the same behavior is observed for both versions, with the indicator taking similar values. From the above, it can be seen that the "Motivation Questionnaire for Dance" is suitable and can be used for surveys in the Greek dance environment. As for the factors that gather the most preferences of the sample, these are "pleasure/mood", "ability/dexterity", "escape" and "ecstasy".

The second study aimed to confirm the suitability of the "Dance Motivation Questionnaire for Dance" in the Greek dance environment and to investigate possible differences in participation motivation due to the type of dance the participants take part in. The results show that the theoretical model consisting of nine factors was confirmed by both confirmatory factor analysis and reliability analysis that investigated its internal consistency and structural validity.

The questionnaire, compared to other questionnaires used in the Greek dance environment and investigating participation motivation, presents both similarities and differences in terms of the number of questions and the factors that they are distributed. More specifically, when compared to the "Participation Motivation Questionnaire" (PMQ) by Gill, Gross and Huddleston (1983), translated and weighted into Greek by Doulias, Kosmidou, Pavlogiannis and Patsiaouras (2005), there is a difference in the number of questions – 30 versus 43 – but also in the number of factors -eight versus nine. The eight factors are common to both questionnaires but differ - even if only slightly - in their names. The problem with the "Participation Motivation Questionnaire" is that it does not show a consistent behavior in its use, although in all three surveys carried out in Greece it showed good behavior.

A similar number of questions and factors is presented in the questionnaire of the present research with the "Physical Activity and Leisure Motivation Scale" used in a study - Filippou, Rokka and Mavridis (2016) - in Greece. There is partial variation in the factors with some being the same and some - learning process, competition, expected benefits - being different.

Regarding "The Behavioral Regulation in Sport Questionnaire (BRSQ)", used in surveys by Giannakoulia (2016) and Filippou, Tsitskari, Bebetsos and Goulimaris (2019), the big difference between the two questionnaires is that "The Behavioral Regulation in Sport Questionnaire (BRSQ)" was developed to be used in surveys with professional athletes. In the two surveys used in Greece, participants were dancers who were paid – albeit symbolically like traditional dancers – to participate in performances. The factors are different, although the number of questions is similar.

Biniakos, Goulimaris and Tsitskari (2020) as well as Gogou, Goulimaris and Tsitskari (2020) used the "Exercise Motivation Inventory-2" (EMI-2) (Markland & Ingledew, 1997) which was modified for the Greek population by Konsoulas, Tsitskari and Tzetzis (2017). The researchers, out of 51 questions in the questionnaire, chose to use only 10. These questions are divided into three factors: "Stress Management", "Social Recognition" and "Health". The results of the survey show that for participants the factor "social recognition" is the factor that pushes them, primarily, to participate in dance activities. The factors used are similar to those present in the questionnaire of this investigation.

Regarding the factors of this study, which have the highest scores, these are "Mood Enhancement", "Mastery", "Trance" and "Escapism" while the factor with the lowest score is "Relationship search" which has a lower score than the potential M (2.10 vs. 2.50). It should be noted that even "Fitness" and "Self-confidence" factors gather a significant number of preferences (3.64 and 3.50 vs. 2.50 of the potential M) evidence of the importance of all factors for the sample.

The results are also in line with the results of the first survey indicating the validity of the questionnaire. Furthermore, the results of the survey agree with the results of other studies (Filippou, Goulimaris, Baxevanos, & Genti, 2010; Filippou, Kipourou, Goulimaris, Serbezis, & Genti, 2009; Filippou, Rokka, & Mavridis, 2016; Filippou, Tsitskari, Bebetsos, & Goulimaris, 2019) according to which having fun, improving dance skills, escaping from everyday life and socializing are important motives for participating in dance activities. It should also be emphasized that participants, especially those who are active in the field of Greek traditional dance, are internally motivated since they participate for the joy and fun that the activity offers.

Regarding the type of dance as a factor that differentiates participation motivation, the results of the survey show that the type of dance is a differentiating factor for seven factors and only for two factors -Mood Enhancement and Fitness- it is not a differentiating factor. This result was partly expected and partly not. In principle, what is expected is that everyone participates to be healthy, have fun and enjoy their participation. All types of dance fulfill this need to the same extent. In this case, the results of the research are in line with the results of the research of Gogou, Goulimaris and Tsitskari (2020) according to which the type of dance is not a differentiating factor for health. However, they contrast with those of the research by Filippou, Rokka and Mavridis (2016) according to which traditional dance dancers participate to a greater extent because through their participation they have fun and relax than dancers from non-traditional forms (Latin and contemporary dance).

The unexpected, perhaps, result is the fact that Greek traditional dancers participate to a lesser extent than Latin dancers in order to connect and be with friends and other loved ones as well as to socialize. And it is posited as unexpected since Greek traditional dance is an activity which by its nature predisposes and encourages participants to gain social and friendly relationships. In Greek traditional society, dance was an institution of socialization for children according to Filippou (2015). In contrast, Latin dances are a type of dance performed in couples and even male-female couples. According to the words of one participant, in many cases Latin dances involve a high percentage of men and women who are couples in life. The leaders of these groups often organise evenings to bring couples together so that they feel more intimate and comfortable in the classes. This, perhaps, is the reason for the differentiation. The results are in contrast to the results of other studies (Filippou, Tsitskari, Bebetsos, &Goulimaris, 2019; Gogou, Goulimaris, & Tsitskari, 2020) according to which participants in traditional dance classes show a higher M than participants in the other two dance genres - classical ballet and Latin.

The general conclusion from the two individual surveys is that the "questionnaire for assessing motivation for participation in dance activities" is suitable and can be successfully used in surveys that investigate the motivation for participation in dance activities that take place in the Greek dance environment. Moreover, the type of dance is a factor in differentiating participation motivation.

Bibliography

Banville, D., Desroriers, P., & Genet-Volet, Y. (2000). Translating questionnaires and inventories using a cross-cultural translation technique. *Journal of Teaching in Physical Education*, 19, 374-387.

Baxevanos, St. (2008). Motivation for adults to attend traditional dance classes. Unpublished postgraduate thesis. Department of Physical Education & Sport Science. Aristotle University of Thessaloniki.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), 238–246. https://doi.org/10.1037/0033-2909.107.2.238

Biniakos, M., Goulimaris, D., & Tsitskari, E. (2020). Evaluation of Incentives Participation Incentives of Adult Participation in Dance Departments of Cultural Associations. Proceedings of the 1st Scientific Conference "Leisure activities and dance practices - Dance in Greece and its perspective - Sports tourism", 2nd: 31-35.

Cerny, B., & Kaiser, H. (2010). A study of a measure of sampling adequacy for Factor -analytic correlation matrices. *Multivariate Behavioral Research*, 12(1), 43-47.

Doulias, E., Kosmidou, E., Paulogiannis, O., & Patsiaouras, A. (2005). Examination of Participation Motives in Folk Dance Groups. *Inquiries in Sport & Physical Education*, 3 (2), 107 – 112.

Filippou, F. (2015). The first woman's dancer improvisation in the area of Roumlouki (Alexandria) through the dance "Tis Marias". *Ethnologia*, 6(b), 1-24. http://www.societyforethnology.gr/site

Filippou, F., Goulimaris, D., Baxevanos, St. & Genti, M. (2010). Adult Attendance in Greek Traditional Dancing Classes. *Exercise and Quality of Life*, 2(1), 15-28.

Filippou, F., Kipourou, P., Goulimaris, D, Serbezis, V., & Genti, M. (2009). Participation Motives of French in Greek Traditional Dance Teaching Seminars Organized in France. *International Journal of Sport Management Recreation & Tourism,* 4,52-59. http://doi:10.5199/ijsmart-1791-874X-4d

Filippou, F., Rokka, S., & Mavridis, G. (2016). Examining the motives for participating in dance activities, using "PHYSICAL ACTIVITY AND LEISURE MOTIVATION SCALE" (PALMS). *Sport Science,* 9(1), 42-49.

Filippou, F., Tsitskari, E, Bebetsos, N, & Goulimaris, D. (2019). Evaluating Dancers' Participation Motives: The Use of the Greek Version of the BRSQ. *Sport Mont*, 17(1), 23–28.

Gill, D.L, Gross, J.B., & Huddleston, S. (1983). Participation motivation in youth sports. *International Journal of Sport Psychology,* 14,1-14.

Glen, S. (2016). Kaiser-Meyer-Olkin (KMO) test for sampling adequacy. Statistics How To. https://www.statisticshowto.com/kaiser-meyer-olkin/

Gogou, E., Goulimaris, D., & Tsitskari, E. (2020). Health and Socialization as Motivation for Participation and Participant Loyalty in Dance Activities. 28th International e-Congress on Physical Education & Sport Science, 48,12-14.

Hair, J., Black, W., Babin, B., & Anderson, R. (2019). *Multivariate data analysis*. Cengage Learning.

Hair Jr., J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks, CA: Sage Publications

Hu L., & Bentler, P. (1995). Evaluating model fit. . In R. Hoyle (Ed.), Structural equation modelling: *Issues, concepts, and applications* (pp. 76-99). 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, 1-55.

Konsoulas, D., Tsitskari, E. & Tzetzis, G. (2017). Evaluation of participation incentives exercise and their relationship with satisfaction and loyalty of private gym members. *Sport & Society*, 59, 58-75.

Lonsdale, C., Hodge, K., & Rose, E.A. (2008). The Behavioral Regulation in Sport Questionnaire (BRSQ): Instrument development and initial validity evidence. *Journal of Sport & Exercise Psychology,* 30(3), 323-355.

Maraz, Király, Urbán, Griffiths, & Demetrovics (2015). Why Do You Dance? Development of the Dance Motivation Inventory (DMI). *PloS ONE*: 10(3), e0122866. https://10.1371/journal.pone.0122866

Markland, D., & Hardy, L. (1993). The Exercise Motivations Inventory: Preliminary development & validity of a measure of individuals' reasons for participation in regular physical exercise. *Personality & Individual Differences,* 15, 289-296.

Markland, D., & Ingledew, D. K. (1997). The measurement of exercise motives: Factorial validity and invariance across gender of a revised Exercise Motivations Inventory. *British Journal of Health Psychology*, 2, 361–376.

McDonald, R. P., & Marsh, H. W. (1990). Choosing a multivariate model: No centrality and goodness of fit. *Psychological Bulletin*, 107(2), 247-255.

Michaltsi, M. (2008). Motivation for Attendance of Foreigners in Teaching Seminars. Greek Traditional Dance. Unpublished postgraduate thesis. Aristotle University of Thessaloniki/ DPESS. Thessaloniki.

Morris, T., & Rogers, H. (2004). Measuring Motives for Physical Activity. *In Sport and Chance of Life: International Sport Science Congress*. Seoul, Korea: The Kansas Association for Health, Physical Education, Recreation, and Dance,242–250.

Ouzouni, Ch., Nakakis, K. (2011). The Reliability and Validity of Measurement Tools in Quantitative Studies. *NURSING*, 50(2), 231-239.

Papaioannidou, M., Basdeki, N., Filippou, F. (2005). Motivation for adult participation in dance activities. *Sport and Society*, 36,69.

Patsiaouras, A., Keramidas, P., & Papanikolaou, Z. (2004). Motivation Questionnaire for participation in sport in a Greek population. Proceedings of the 3rd International Conference of Sport Psychology (p. 53): University of Thessaly.

Robbins, S.P., & Judge, T.A. (2011). *Organizational behavior. Basic concepts and contemporary approaches*. Athens: Cretan Publications.