Team Cohesion and Flow of Successful and Unsuccessful Handball Players

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ABSTRACT
The purpose of this study was to analyze the cohesion, team, and individual flow of successful and unsuccessful handball players. Using the Flow State Scale (FSS-2), and the Group Environment Questionnaire (GEQ), the study assessed four dimensions of flow and four measures of team cohesion among 90 inter-university male handball players aged 17 to 25 years. Participants were from 6 university teams across Kerala who competed in the South India Inter-University Tournament in 2023. The questionnaires were administered individually after obtaining permission from relevant authorities. Data analysis was done by using a paired t-test. The study found significant differences in psychological variables between successful and unsuccessful players ($p < 0.05$).

Keywords: Team cohesion, Flow, Handball, Performance, Sports Psychology, Task cohesion, Social cohesion, Group Environment Questionnaire (GEQ), Flow State Scale (FSS).

1.1 INTRODUCTION

In competitive sports, team cohesion and flow are pivotal factors that significantly influence performance outcomes. Team cohesion refers to the unity and collaborative effort among team members, encompassing both task cohesion commitment to team goals and tasks and social cohesion the interpersonal bonds and camaraderie among teammates. Flow, a psychological state characterized by complete immersion and engagement in an activity, often leads to peak performance. Understanding the interplay between these elements can provide valuable insights into team dynamics and performance enhancement. (Jackson,2004)

Handball, a fast-paced and strategic team sport, offers an ideal context to study these dynamics. The South Zone Inter University Men's Handball Tournament presents a competitive environment where teams with varying levels of cohesion and flow compete, allowing for a comparative analysis of successful and unsuccessful teams. This study aims to examine the relationship between team cohesion and flow among handball players and how these factors contribute to team success. Utilising the Group Environment Questionnaire (GEQ) to measure team cohesion and the Flow State Scale (FSS) (Kao,2019) to assess flow experiences, this research categorises players into successful and unsuccessful groups based on their teams' performance. The findings aim to highlight the importance of fostering team cohesion and flow to achieve optimal performance in competitive sports.

1.2 STATEMENT OF THE PROBLEM

The purpose of the study was to analyse team cohesion, and team and individual flow among successful and unsuccessful handball players.

1.3 SIGNIFICANCE OF THE STUDY

i. This study highlights the critical role of team cohesion and flow in improving handball team performance.
ii. The findings provide valuable insights for coaches and sports psychologists to design effective team-building activities and interventions.
iii. Understanding how flow states contribute to peak performance can aid in the development of psychological skills training programs. These programs can help athletes achieve optimal performance states more consistently, benefiting not just handball players but athletes across various sports.
iv. The study sets a precedent for further exploration into the long-term effects of team cohesion and flow on performance.

1.4 OBJECTIVES OF THE STUDY

i. To determine if there is a significant difference in the means of successful and unsuccessful handball players on the Flow state scale.
ii. To assess if there is a significant difference in the means of successful and unsuccessful handball players on Team cohesion.

1.5 HYPOTHESES

i. There will not be a significant difference in the means of successful and unsuccessful handball players on the Flow state scale.
ii. There will not be a significant difference in means of success and unsuccessful handball players on Team cohesion.

1.6 METHODOLOGY OF THE STUDY

In this chapter, the selection of subjects, tools of the study, description of the questionnaire, administration of the questionnaire, and statistical techniques employed for testing the hypothesis have been described.

1.6.1 Selection of Subjects

The study included 90 male handball players from the inter-university level, aged between 17 to 25 years. These players represented 6 different university teams: University of Kerala, Thiruvananthapuram; University of Calicut, Malappuram; Mahatma Gandhi University, Kottayam; Kannur University, Magattuparamba; Madras University, Chennai; Sree Sankara University, Kalady; and Kerala Agriculture University, Mannuthy. They participated in the South India Intervarsity Tournament in 2023.

1.6.2 Tools of the Study

The instruments used in this study were,

i.Flow state scale-2 (FSS-2) (Jackson and Eklund, 2004)

Variables Considered for the study;

a) Challenge Skill Balance
b) Merging of Action and Awareness
c) Clear Goals
d) Unambiguous Feedback

ii.The Group Environment Questionnaire (GEQ) (Albert V. Carron, Lawrence R.Brawley, W.Neil Widmeyer, 2002)

Variables Considered for the study;

a) Individual Attractions to the Group- Task
b) Individual Attractions to the Group- Social
c) Group integration – Task
d) Group integration – Social

1.6.2.1 Flow state scale-2 (FSS-2)

Flow state scale-2 (FSS-2) was designed as a post-event assessment of flow with introductions worded to ground the respondent in the just completed activity. The rating scale for the FSS-2 is a 5-point Likert scale, ranging from "1" (strongly disagree) to "5" (strongly agree). That is, respondents were asked to indicate their extent of agreement with each of the flow descriptors about the activity that he/she just completed. The FSS-2 should be administered as close as possible to the completion of the activity being assessed to promote clear recall. It was recommended that response to the FSS-2 be collected within one hour of completion of the activity, to gather the data as close to the finish of an activity as possible, while minimizing intrusion on the participants. The research scholar instructed the respondent as follows: "Please answer the following questions about your experience in the event or activity just completed. The questions relate to thoughts and feelings you may have experienced while taking part. There are no right or wrong answers. Think about how you felt during the event or activity and answer the questions using the 5-point scale. For each question, circle the number that best matches your experience.

1.6.2.2 The Group Environment Questionnaire

The Group Environment Questionnaire is designed to measure individual group member's perception of team cohesiveness. Specifically, four measures of cohesiveness are assessed: (i) individual attraction to the group –task (ii) individual attraction to the group –social (iii) group integration -task and (iv) group integration-social. Individual attraction to group-task is a composite measure of individual team members' feelings about their involvement with the group task, productivity, goals and objectives. Individual attraction to group-social is a composite measure of individual team members' feelings about personal involvement, desire to be accepted, and social interaction with the group. Besides, the individual attractions to group scales have the individual assessment of his/her involvement with the group's task and the group's social aspects ("I don't like the style of play on this team" and "some of my best friends are on this team"). Group integration -task is a measure of the individual team member's feelings about the similarity, closeness, and bonding within the team as a whole around the group's task. Group integration-social is a measure of the individual team member's feelings about the similarity, closeness and bonding within the team as a whole around the group as a social unit. The group integration scales have the individual assess the group as a whole in terms of its coherence around task and social activities (for example, "our team is united in trying to reach its goals for performance" and "members of our team do not sick together outside of practices and games") the questionnaire is made up of 18 items. 4 items in the individual attraction to group task; 5 items in individual attraction to group-social; 5 items in the group integration task; and 4 items in group integration–social. The team members are required to respond to the 18 statements about their team on a 9-point scale, which is anchored at two extremes by "strongly disagree "to "strongly agree". The score on any specific scale is computed by obtaining the mean response for a subject from the pertinent items.

1.6.3 Administration of Questionnaires

The questionnaires on the selected variables were administered to each subject separately. The research scholar after seeking permission from concerned authorities met the subjects and explained clearly the purpose of the study along with how the questionnaires were to be answered. Each statement and method of answering was explained one by one. Besides, they were assured that the answers would be kept confidential and after ascertaining that the instructions were completely understood, they were asked to record the answers. The questionnaire FSS-2 was distributed to the subjects soon after the activity was over for answering.

1.6.4 Statistical Techniques Used

The data analysis was done by using t-test. The level of significance set for this study is 0.05.

1.7 RESULT AND DISCUSSION

The statistical analysis of data collected on flow states (dispositional and state flow) and team cohesion are included in this chapter. The data about the flow states and cohesion were tested using t-test.

Table 1 independent samples t test on flow state variables among successful and unsuccessful handball players

Challenge Skill Balance

Type	N	Mean	S D	df	t-value	P
unsuccessful	45	19.28	1.925	88	2.231	.031*
successful	45	21.36	2.13			

45 participants who were successful handball players (M=21.36, SD=2.13) compared to the 45 participants of unsuccessful handball players (M=19.28, SD=1.925) demonstrated significantly better scores on challenge skill balance, t (88) = 2.231, p = .031.

There is significant difference on flow state variable **challenge skill balance** among the successful & unsuccessful handball players where the **successful handball players** have greater **challenge skill balance** than the unsuccessful handball players.

Merging of Action and Awareness

Type	N	Mean	S D	df	t-value	P
unsuccessful	45	18.69	1.567	88	2.45	.027*
successful	45	19.96	1.82			

45 participants who were successful handball players (M=19.96, SD=1.82) compared to the 45 participants of unsuccessful handball players (M=18.69, SD=1.567) demonstrated significantly better scores on Merging of Action and Awareness, t (88) = 2.45, p = .027.

There is significant difference on flow state variable **Merging of Action and Awareness** among the successful & unsuccessful handball players where the **successful handball players** have greater **Merging of Action and Awareness** than the unsuccessful handball players.

Clear Goals

Type	N	Mean	S D	df	t-value	P
unsuccessful	45	20.23	1.67	88	2.12	.037*
successful	45	20.44	1.72			

45 participants who were successful handball players (M=20.44, SD=1.72) compared to the 45 participants of unsuccessful handball players (M=20.23, SD=1.67) demonstrated significantly better scores on clear goals, t (88) = 2.12, p = .037.

There is significant difference on flow state variable **clear goals** among the successful & unsuccessful handball players where the **successful handball players** have greater **clear goals** than the unsuccessful handball players.

Unambiguous Feedback

Type	N	Mean	S D	df	t-value	P
unsuccessful	45	17.24	1.88	88	2.39	.029*
successful	45	17.57	1.91			

45 participants who were successful handball players (M=17.57, SD=1.91) compared to the 45 participants of unsuccessful handball players (M=17.24, SD=1.88) demonstrated significantly better scores on unambiguous feedback, t (88) = 2.39, p = .029.

There is significant difference on flow state variable **Unambiguous Feedback** among the successful & unsuccessful handball players where the **successful handball players** have greater **Unambiguous Feedback** than the unsuccessful handball players.

Independent samples t test on variables of team cohesion among successful and unsuccessful handball players

Individual Attractions to the Group- Task

Type	N	Mean	S D	df	t-value	P
unsuccessful	45	20.24	1.72	88	2.14	.039*
successful	45	22.45	2.02			

45 participants who were successful handball players (M=22.45, SD=2.02) compared to the 45 participants of unsuccessful handball players (M=20.24, SD=1.72) demonstrated significantly better scores on challenge skill balance, t (88) = 2.14, p = .039.

There is significant difference on **Individual Attractions to the Group- Task** among the successful & unsuccessful handball players where the **successful handball players** have greater **Individual Attractions to the Group- Task** than the unsuccessful handball players.

Individual Attractions to the Group- social

Type	N	Mean	S D	df	t-value	P
unsuccessful	45	20.22	1.6	88	2.18	.038*
successful	45	23.27	2.17			

45 participants who were successful handball players (M=23.27, SD=2.27) compared to the 45 participants of unsuccessful handball players (M=20.22, SD=1.6) demonstrated significantly better scores on challenge skill balance, t (88) = 2.18, p = .038.

There is significant difference on **Individual Attractions to the Group- social** among the successful & unsuccessful handball players where the **successful handball players** have greater **Individual Attractions to the Group- social** than the unsuccessful handball players.

Group integration – Task

Type	N	Mean	S D	df	t-value	P
unsuccessful	45	18.02	1.534	88	2.22	.035*
successful	45	21.68	1.91			

45 participants who were successful handball players (M=21.68, SD=1.91) compared to the 45 participants of unsuccessful handball players (M=18.02, SD=1.534) demonstrated significantly better scores on challenge skill balance, t (88) = 2.22, p = .035.

There is significant difference on **Group integration – Task** among the successful & unsuccessful handball players where the **successful handball players** have greater **Group integration – Task** than the unsuccessful handball players.

Group integration – social

Type	N	Mean	S D	df	t-value	P
unsuccessful	45	16.88	1.71	88	2.32	.030*
successful	45	20.17	2.03			

45 participants who were successful handball players (M=20.17, SD=2.03) compared to the 45 participants of unsuccessful handball players (M=16.88, SD=1.71) demonstrated significantly better scores on challenge skill balance, t (88) = 2.32, p = .030.

There is significant difference on **Group integration – social** among the successful & unsuccessful handball players where the **successful handball players** have greater **Group integration – social** than the unsuccessful handball players.

1.7.1 Discussion of Hypotheses

i. The first hypothesis related to a significant difference in means of successful and unsuccessful handball players on the Flow state scale (FSS.2), is rejected, as significant differences in means have been found on the total flow and Analysis the four dimensions of Dispositional Flow Scale-2 such as Challenge Skill Balance, Merging of Action and Awareness, Clear Goals, Unambiguous Feedback

ii. The second hypothesis formulated related to a significant difference in means of successful and unsuccessful handball players on Team cohesion, is rejected, as significant differences in means have been found on the four factors of Team Cohesion such as Individual attractions to the group–task (ATG-T), Individual attractions to the group– social (ATG-S), Group Integration–task (GI-T) and Group Integration–social (GI-T)

1.8 CONCLUSION

The study revealed significant differences between successful and unsuccessful university handball players in their total scores on the Flow State Scale (FSS-2. Successful players consistently scored higher, indicating a stronger overall flow state. In team cohesion, significant differences were found in individual attractions to the group for task (ATG-T) and social (ATG-S) dimensions, and in group integration for task (GI-T) and social (GI-S) dimensions. Successful players

showed greater cohesion and stronger connections within their teams, both in task-related and social aspects, contributing to their enhanced performance and flow experiences

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