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STUDENTS' ASSESSMENT OF FACTORS AFFECTING TEAM STRUCTURE & FUNDAMENTALS OF GOOD TEAMWORK

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Abstract

This study investigates the factors that affect team structure and also touches upon students' perception of the importance of fundamentals of teamwork. Data sample of 130 undergraduate international business students, both males and females, from a Finnish higher education institution was analysed using SPSS tool. Based on the students' assessments, communication is a factor that affects team structure more than team norms and work assignments. Compared to the male students the female students assessed team norms to have a greater impact on the team structure. In addition, this study reveals that prior teamwork experience has a statistically significant influence on the students' opinions about the team structure. The students with prior team work experience consider both communication and work assignments to affect more the team structure compared to inexperienced students. Further, this study finds that the 'effective interaction' among team members during tasks execution was assessed to have the greatest importance in achieving good teamwork. The female students assessed the collective decision-making as a more important variable of good teamwork than the male students. The findings of this study provide insights into factors affecting team structure, and the fundamentals of good teamwork. It contributes to creating knowledge related to student team structure and performance as part of learning process in business education in the HEIs.

Keywords: team structure, teamwork, team performance, higher education, international business students.

1 INTRODUCTION

Institutions of higher education have been applying team-based learning (TBL) method since the seventies with a sole purpose of improving students' academic achievement and fostering positive intergroup relations among team members [1]. The team members are 'working interdependently and are jointly accountable for performance goals' [2]. According to Dana [3] TBL is an instructional strategy that encapsulates developing, designing and linking a sequence of activities in order to achieve deep student learning as well as an improved team development. Currently, this teaching method is commonly applied, documented and validated in several business and management courses in the Higher Educational Institutes (HEIs) in Europe and around the world [4]. Kibble et al. [5] argue that the success of TBL as a method relies mainly on high-functioning student teams.

We consider the definition of a team as a '*social entity formed by its members with high task interdependency and shared and valued common goals*' [6 p. 541]. Such a team shares a collective identity with common objectives [7, 8]. Previous studies, see for example [9], propose that teamwork is related to the effectiveness of the team as a whole to achieve collective success. Previous research proposes several advantages of teams in various settings including teams in the educational context where cooperative working in student teams increases learning [10]. At present, HEIs consider student teamwork as an effective pedagogical method that influences learning of the students [11]. Using a sample of 130 1st semester students of international business, following a degree program at a Finnish higher education institution, this study primarily investigates the fundamentals of teamwork and factors that affect the team structure. A brief review of the literature related to these concepts is presented hereunder.

Banking on the theoretical model proposed by Schwarz [12], it is assumed that team structure plays an important role in achieving team effectiveness and desired performance [1]. Team structure can be described in terms of clearly defined roles or work assignments, team norms, and team members' understanding and commitment to common team goals [12]. In this study, team members' roles are considered as specific predefined work assignments for which each team member is responsible. According to Stevens and Campion [13], clearly defined work assignments reduce duplication of efforts, and consequently improves team performance. In addition, such clear work assignments allow team members to concentrate their focus on specific parts of the tasks adding value to the team as a whole

[1]. Vancouver et al. [14] highlight that such clear definition of work assignment is critical to achieving overall team effectiveness. Werner and Lester [1] posit that how team members communicate with each other, while engaged in teamwork also affects its performance. We include communication in the scope of team structure. According to Pinto and Pinto [15 p. 201] communication is a vehicle through which various members share information that is critical to the success of the team. In line with the above assumption, it is argued that communication and information sharing play a crucial part in determining specific work assignment and responsibility of every team member [16]. However, there might be a possible variance among team members as to their agreement and understanding of specific work assignments for each team member.

According to Schwarz model [12], team norms are significant to team structure. The alignment between members' action and team values results in more committed teams [1]. Team norms are defined as '*a set of agreements about how team members will work with each other and how the team will work overall*' [17]. These team norms can be manifested, for instance, in equal participation in team meetings, fair contribution to complete specific work assignments, regular open discussion on key issues, mutually holding one another accountable in case of possible violation of set norms, etc. It is highlighted that norms as basic ground rules are put in place in order to initiate healthy debate. Through such a debate the team receives points of view and feedback of all members on key issues. Such a collaboration increases team performance [17]. A recent study by Matsunaga et al. [18] posits that teams formed by international students conform to such normative practices. Moreover, extant literature, see for example [19, 20], provides evidence that understanding and commitment to clear team goals has a positive effects on team performance and productivity.

This study integrates the students' perception of the importance of fundamentals of teamwork. Particular focus is given to variables which have been considered to be among the strongest predictors of good and effective teamwork. Variables such as quick communication among team members, effectiveness of interaction during performing assigned tasks, members' mutual support with final goal in mind, and collective decision-making are included in this study. Earlier research highlighted that the higher the collective members' perception of these variables, the higher the chances that team members would deliver the tasks and attend to the needs of other fellow team members, which lead to improved team performance [6]. A clearer understanding of factors that enhance team performance are needed by undergraduate students in HEIs to prepare them for their possible future employability [21].

In the domain of educational research, these variables have been debated to influence the success of a team. Similarly, these fundamental factors have been explored in several learning environments. Other explorative studies focused on the influence of these variables on team performance in various learning settings. Higher education institutions are promoting team-based learning in several fields of studies especially in business related subjects [16]. Hence, such understanding becomes a relevant prerequisite for graduating students.

The rest of the study is structured as follows. Team assignment and activities as part of the course are described as context of the study. The quantitative research design is presented. The results of the data analysis are discussed. Finally, the conclusions of the study are presented with research limitations, and possible future research directions.

2 METHODOLOGY

This study investigates the students' views on the main factors affecting the team structure. The study also looks at the students' perception of the fundamentals of good team work. The results will help to understand better the students' needs when building successful teams for various course's assignments. The study was carried out in Autumn and Spring semesters of 2020 and 2021 respectively, in four implementations of the course Introduction to International Business. The 10 ECTS course is a part of a bachelor of Business administration degree programme. It offers a large view of the various aspects and competencies of International business.

2.1 Team assignments and activities

The course Introduction to International Business is based mainly on teamwork. The teams are built by the students themselves or by the teachers, depending on the given assignments. All along the course, there are 3 different types of assignments. The first one consists of providing a task (debate, discussion, questionnaire or business topic research) to small teams (3 to 5 students). The students complete the assignment, inside or outside the class with a short deadline (the same day or a week).

The second main assignment uses Problem Based Learning (PBL) as the pedagogical approach. The class is divided into three teams of 12 to 15 students, with one teacher/tutor per team. The teams are built by the teachers to ensure their balance in terms of gender, nationality and personality. At the beginning of each session, the teams are provided with a trigger (an article, a video, a documentary), where the students must decide on, and specify one specific problem, followed by three to four topics of research to solve the problem. These topics are called *learning objectives*. The research is done individually, but is shared between the team members in order to answer the problem. The students have the opportunity to take on various roles, such as Discussion Leader, Recorder, Observer and Team Member. This PBL assignment weights 40% of the total course grade assessment; however, each student gets an individual grade.

The third and the last team assignment weights 25 % of the final course grade assessment as a team performance's grade. It consists of producing an online event on a business topic chosen by each team. The teams are formed by the teachers. The teams' formation is based on the students' individual performance during the previous PBL assignment. The idea is to mix the previous teams and to provide each new team with an equal number of males and females, with different personality characteristics. The teams are composed of 6-7 members who have five weeks to organize their two-hour online event. The audience is composed of the course group of peers and the other invited participants, such as professionals, relatives, friends, school staff, etc. The students target and reach the participants through their marketing work.

During the planning stage of the event, the students meet at least twice a week, once with the team members, once with the coach-teacher. They must keep track of their meetings, in the form of a memo, using the tool of their choice (Trello, WhatsApp, Word document, etc.), in order to check progress. During the following two weeks, they implement the event, assess their team work together (planning & implementation) and present a 20 min feedback with the help of a PPT, to their peers, to the event coach-teacher and to two other teachers who attend the events. The online events are graded based on the team performance according to all tasks' requirements.

2.2 Quantitative study

This study adopts a quantitative research methodology. The data was collected via a survey questionnaire. The survey questionnaire was created for this specific study using Webropol 3.0 survey tool. At the end of the first class of the course, the participants were asked about their own profile and to answer quantitative questions related to their perception of teamwork. Participants were informed that their participation in the survey was voluntary and their answers would remain confidential. The sample of 130 students (57 males and 73 females, representing 22 nationalities) answered the questions of the survey questionnaire.

The data was analyzed with the IBM SPSS statistical tool and Microsoft Excel. In the analysis, the ranking of the answers was modified into scores, where the most important aspect was scored 5 and the least important aspect was scored as 1. The data analysis was carried out by applying Friedman non-parametric statistical test to detect the differences in the respondents' ranking orders and Wilcoxon non-parametric statistical hypothesis signed-rank test to compare two related samples. Additionally, the Mann-Whitney U test was applied to find statistically significant differences based on prior teamwork experience and between genders. The results of the analysis are discussed in the next section.

3 RESULTS

This study primarily investigates the factors that affect the team structure, but also touches upon students' perception of the importance of the fundamentals of teamwork. The literature review provides the theoretical underpinning of the concepts as discussed in the previous section. The empirical data is analysed and discussed as follows.

The participating students represent both genders. However, the number of female respondents is a little higher than that of males as illustrated in Table 1.

Table 1. The respondents' genders

| | <i>Frequency</i> | <i>Percent</i> |
|---------------|------------------|----------------|
| <i>Male</i> | 57 | 43,8 % |
| <i>Female</i> | 73 | 56,2 % |
| <i>Total</i> | 130 | 100,0 % |

The distribution of the students according to age is relatively even. However, there is a slight majority of respondents older than 25 years as illustrated in Table 2.

Table 2. Age distribution of the respondents

| <i>Age</i> | <i>Frequency</i> | <i>Percent</i> |
|--------------------------|------------------|----------------|
| <i>17 - 20 years</i> | 41 | 31,5 % |
| <i>21 - 25 years</i> | 41 | 31,5 % |
| <i>26 years or older</i> | 48 | 36,9 % |
| <i>Total</i> | 130 | 100,0 % |

The majority of the students are Finnish. One fifth of the students are from other European countries. Noticeably, 7 % of the students have double nationality as illustrated in Table 3.

Table 3. The respondents' nationalities

| | <i>Frequency</i> | <i>Percent</i> |
|---------------------------|------------------|----------------|
| <i>Finnish</i> | 77 | 59,7 % |
| <i>European</i> | 25 | 19,4 % |
| <i>Americas</i> | 5 | 3,9 % |
| <i>Asia</i> | 9 | 7,0 % |
| <i>Africa</i> | 4 | 3,1 % |
| <i>Double nationality</i> | 9 | 7,0 % |
| <i>Total</i> | 129 | 100,0 % |

Almost all students have prior experience of team work. Only one tenth of the students do not have earlier experiences of working in teams as illustrated in Table 4.

Table 4. Prior teamwork experience

| | <i>Frequency</i> | <i>Percent</i> |
|--------------|------------------|----------------|
| <i>Yes</i> | 118 | 90,8 % |
| <i>No</i> | 12 | 9,2 % |
| <i>Total</i> | 130 | 100,0 % |

3.1 Factors affecting team structure

The students were asked to assess the extent to which 'communication', 'team norms' and 'work assignments' affect the team structure. The assessment was done on a scale 1 = Not at all, 2 = Only a little, 3 = Somewhat and 4 = Considerably. Based on the students' assessments, 'communication' is a factor that considerably affect the team structure. Also, 'team norms' and 'work assignment' factors affected equally the team structure as depicted in Figure 1.

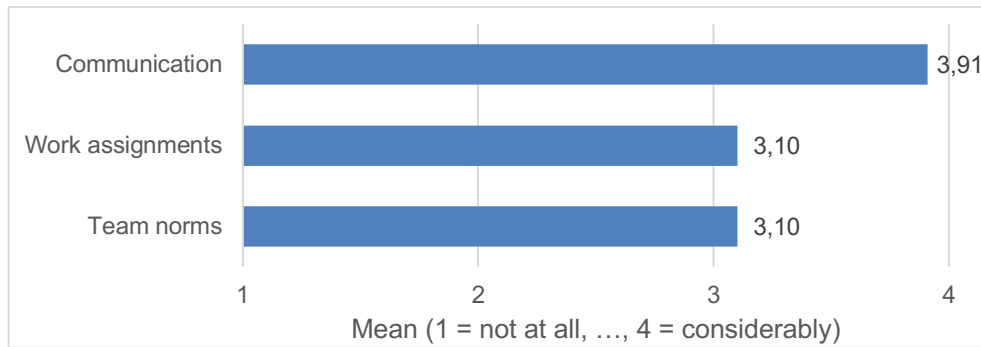


Figure 1. Mean of factors affecting on the team structure (n=130)

The female students assessed the team norms to have a greater impact on the team structure compared to the male students (U = 2454.0, Sig. 0.05), as depicted in Figure 2.

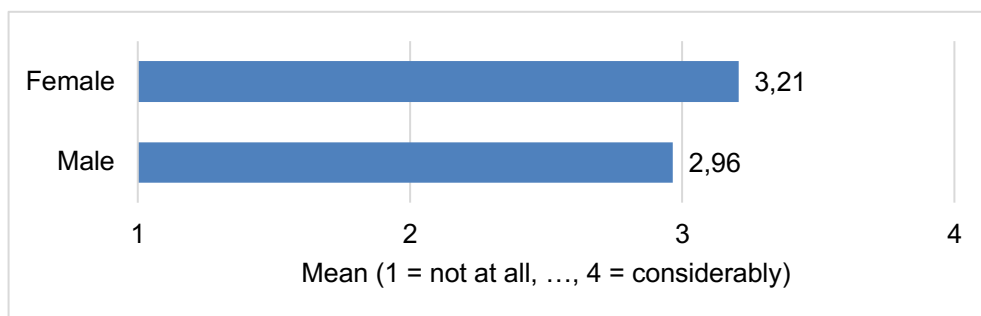


Figure 2. The effect of the 'team norms' by gender (n=130)

Prior teamwork experience has a statistically significant effect on the student's opinion about the team structure. The students with prior experience consider both 'communication' (U = 574.5, Sig. 0.020) as well as 'work assignments' (U = 480.0, Sig. 0.043) to affect more the team structure compared to inexperienced students as depicted in Figure 3.

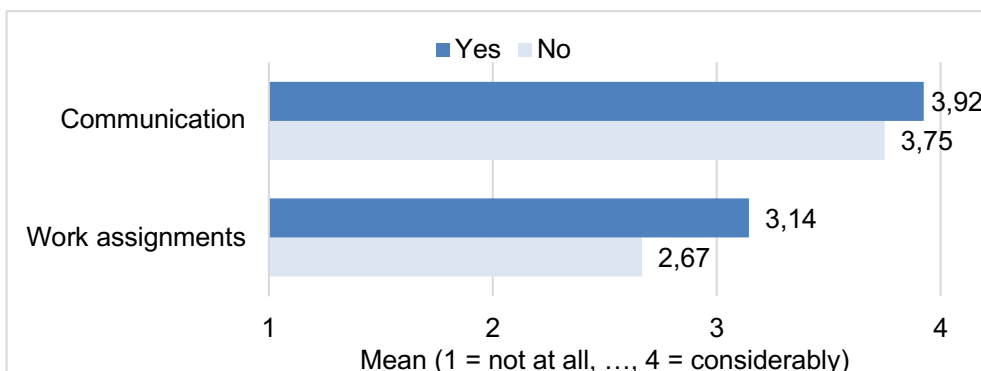


Figure 3. Effect of prior teamwork experience on team structure (n=130)

3.2 Fundamentals of teamwork

The students were asked to rank the importance of fundamentals of good teamwork from most important to least important. The students' assessments varied considerably. All variables were chosen as the most and as the least important as depicted in Figure 4.

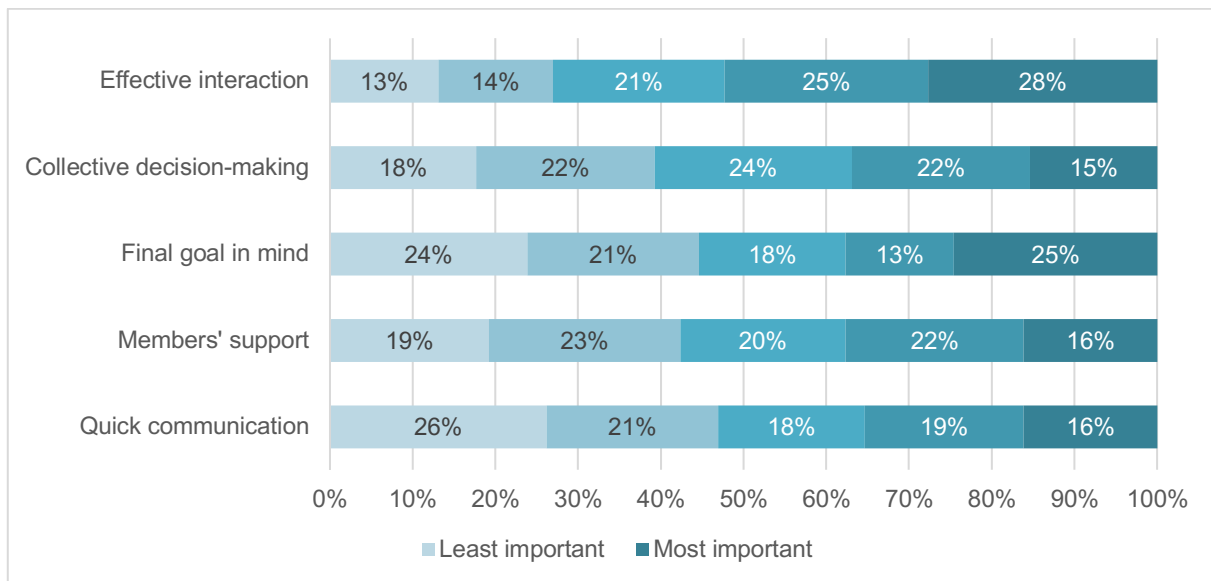


Figure 4. Importance of fundamentals of teamwork

For further analysis, the rankings were modified into scores where the most important aspect was given score 5 and the least important aspect was given score 1. There were statistically significant differences in the rankings (Friedman test, $\chi^2 = 11.347$, Sig. = 0.023) as illustrated in Table 5.

Table 5. Friedman test

| Test Statistics ^a | |
|------------------------------|--------|
| N | 130 |
| Chi-Square | 11,348 |
| df | 4 |
| Asymp. Sig. | 0,023 |

The 'effective interaction' was assessed to have the greatest importance in the teamwork as shown in Figure 5. The pairwise Wilcoxon Signed Ranks test indicates that its importance is statistically significantly higher than any other aspect (Sig. = 0.001–0.023) as illustrated in Table 6.

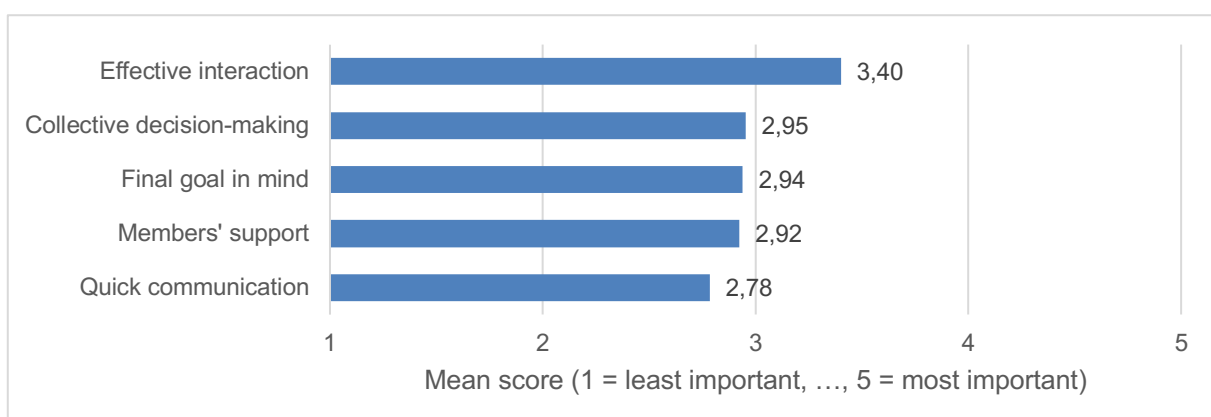


Figure 5. The ranking order of the fundamentals of the teamwork

The differences in the importance of other factors were relatively small and these differences are not statistically significant as illustrated in Table 6.

Table 6. Pairwise Wilcoxon Signed Ranks Test

| | Z | Asymp. Sig. (2-tailed) |
|--|--------|------------------------|
| Effective interaction - Quick communication | -3,241 | 0,001 |
| Members' support - Quick communication | -0,654 | 0,513 |
| Final goal in mind - Quick communication | -0,716 | 0,474 |
| Collective decision-making - Quick communication | -0,752 | 0,452 |
| Members' support - Effective interaction | -2,271 | 0,023 |
| Final goal in mind - Effective interaction | -2,466 | 0,014 |
| Collective decision-making - Effective interaction | -2,329 | 0,020 |
| Final goal in mind - Members' support | -0,169 | 0,865 |
| Collective decision-making - Members' support | -0,131 | 0,896 |
| Collective decision-making - Final goal in mind | -0,155 | 0,877 |

In the comparison of genders, the female respondents assessed the 'collective decision-making' as a more important aspect of teamwork than the male students ($U = 2511.5$, Sig. 0.039) as depicted in Figure 6. Otherwise, there were no differences between the genders.

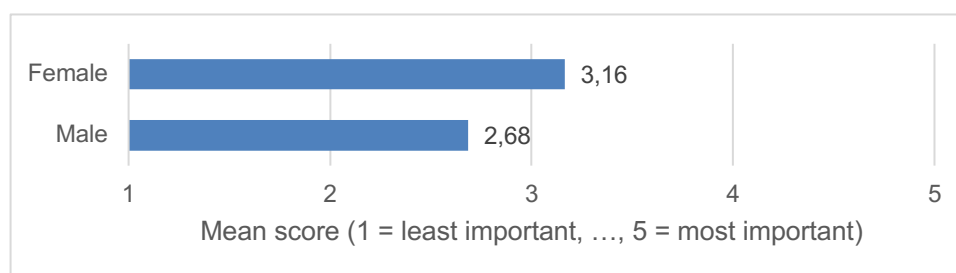


Figure 6. Assessment of 'collective decision-making' by gender

4 CONCLUSIONS

This study primarily investigated the factors that affect the team structure and also touched upon students' perception of the importance of the fundamentals of teamwork. The literature review provided the theoretical underpinning of the concepts. Empirical data was gathered from questionnaires distributed to a sample of 130 1st semester students of international business from a Finnish higher education institution. The respondents were asked to provide their assessment about the extent to which selected factors affect the team structure. Based on the students' assessments, 'communication' was identified as considerably more affecting factor the team structure than 'team norms' and 'work assignments' factors. The female students assessed the team norms as having greater impact on the team structure compared to the male students. Furthermore, prior teamwork experience has a statistically significant impact on the student's assessment of the team structure. The students with prior experience considered both 'communication' and 'work assignments' as affecting more the team structure compared to inexperienced students.

Additionally, the respondents were also asked to rank the importance of selected variables as fundamentals of achieving good teamwork. The given variables were 'quick communication', 'effective interaction', 'members' support', 'final goal in mind', and 'collective decision-making'. The analysis showed that the 'effective interaction' variable was assessed to have the greatest importance in achieving good teamwork. Further analysis of the data revealed that, in the comparison of genders, the female respondents assessed the 'collective decision-making' as a more important variable of good teamwork than the male students. The findings of this study provide insights into factors affecting team structure and perception of first semester students about the fundamentals of good teamwork during their undergraduate degree studies at a Finnish higher education institution. Care should be taken in generalizing the findings of the study due to limited number of respondents. In the future, a similar study can be conducted involving interdisciplinary students.

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