

The influence of gender and country-of-origin effects on student processes in team projects



Donella Caspersz

University of Western Australia, Perth, Australia
dcasperz@ecel.uwa.edu.au

Madeline Wu

University of Western Australia, Perth, Australia
mwu@ecel.uwa.edu.au.

Judy Skene

University of Western Australia, Perth, Australia
jskene@ecel.uwa.edu.au

***Abstract:** This paper presents results from a study investigating the influence of gender and country-of-origin effects on individual level student processes occurring within clearly divisible academic student team projects. The study was exploratory in nature and aimed at unravelling 'possibilities' rather than reaching definitive conclusions. While a number of variables were researched, statistically significant results were found in a few areas. One was in relation to gender and measures exploring social approval and the 'sucker effect', which is when team member performance is detrimentally affected by perceived lack of effort by other team members. Statistical significance also emerged between overseas-born students and Australian-born students on social approval, as well as self-efficacy (or students' own confidence) in completing team projects. The paper discusses the implications of this research for the management of student team projects and outlines directions for future research. The overall conclusion arising from this study is that effective management of gender and country-of-origin effects in student projects is linked to improvement in students' interpersonal skills. This concurs with a conclusion reached in a broader study of individual level student processes occurring in academic student team projects (Caspersz, Wu & Skene: 2002).*

Keywords: diversity, teams, students

Introduction

The use of formal work teams has become prevalent in managing work organizations both within Australia and elsewhere (Morehead et al:1997; Osterman:1994). For instance, 47% of workplaces surveyed for the 1995 Australian Workplace Industrial Relations Survey (Morehead et al:1997) used teams in managing workplaces. The popularity of teams as a management tool is directly linked to the benefits identified including the ability to streamline work processes, enhance employee participation and improve quality (Eby & Dobbins:1997). Similarly, a number of studies of student team projects confirms the veracity of team projects as an effective learning tool in developing both academic (Johnson et al: 1981) and non-

academic skills such as promoting understanding and enhancing self-esteem (Slavin et al: 1985).

While the research on gender and individual level team member processes is more ambiguous about the effects of gender on team performance (see Eby & Dobbins: 1997; Riordan & Shore: 1997), additional research confirms that effectively managed cross-cultural teams can help improve workforce productivity (Cox & Blake: 1991; Adler:1997; Richard: 2000; Distefano & Maznevski: 2000). This requires assisting team members to understand each other's cultural diversity and bridging communication differences arising from cultural diversity (Adler: 1997; Distefano & Maznevski: 2000). However, while highlighting gains to be derived from culturally diverse teams, studies simultaneously pinpoint a number of difficulties. Research highlights that multicultural work teams suffer from 'process loss' arising from problems that include an inability to communicate clearly, frequent disagreements on expectations, and attitudinal problems such as dislike, mistrust and lack of cohesion (Adler: 1997; Watson & Kumar:1992). Hinds et al (2000) suggest that individuals subsequently veer towards mirroring themselves on observable diversity characteristics. This effect is also described as 'homophily' by Smith, Fisher and Sale (2001), who conclude that the overall effect of cultural diversity can thus be detrimental rather than positive, as it can subsequently limit the individual's access to communication and information.

Even though many studies have researched cultural diversity effects on teams, little research has been undertaken on unravelling these effects on individual level student team processes in a *tertiary* environment. This is apart from the study by Volet and Ang (1998) which also confirmed the existence of a homophily effect amongst tertiary student teams. However, just as research suggests that effective management of cultural diversity can improve work team performance, it is similarly hypothesized that the effectiveness of team projects can also be enhanced if cultural diversity is effectively managed.

Understanding the effects of cultural diversity however on team processes requires understanding individual level responses or rather the antecedents within the individual which shapes their approach to teamwork. That is, logic dictates that because social relationships are the lifeblood of teams, the personal characteristics used by both society and self to categorize an individual within a social setting will influence individual team member responses, team processes in general and ultimately team performance. A similar rationale influenced the decision to research the effects of gender on teams. Even though other research has not highlighted significant effects of gender on individual responses in student teams, it is nonetheless hypothesized that given the importance of group composition to group performance (Moreland & Levine: 1994), gender must also have some effect.

The theory informing this set of propositions stems from a number of sources. For instance, self-categorization theory (Turner: 1982) suggests that because individuals rely on demographic characteristics or observable differences such as age, gender and country-of-origin to classify themselves and others into social categories, they view these categories positively and hence develop relationships with others in the same categories. Social identity theory similarly asserts that individuals tend to support and positively evaluate those that embody salient aspects of their social identity because it builds self-esteem and maintains positive self-identity (Tajfel: 1978; Riordan & Shore: 1997). Thus, if an individual in a work group is dissimilar to others, this may result in a loss of self-identity and ultimately self-esteem. Conversely, the similarity-attraction paradigm proposes that similarity among individuals in a group leads to a high degree of interpersonal attraction among members (Byrne: 1971; Newcomb: 1956). Thus, if an individual is dissimilar to other team members,

there is little attraction and thus little motivation to interact positively with those group members (Riordan & Shore:1997). These explanations reinforce the sociological interpretation which views diversity as a social construction (Giddens: 1989) which is wholly learned. In other words, self-categorization occurs because society legitimises 'difference' based on categories such as gender and country-of-origin.

The research undertaken used a model developed by Caspersz, Wu and Skene (2002) which is diagrammatically depicted in figure 1 and explained below in the next section. Research was conducted by surveying 166 students participating in 50 teams working on clearly divisible academic projects with a team mark attached to completion of the project. Fifty-eight per cent of responses were from female and 42% from male students. Sixty-eight per cent of students were Australian-born while 32% were overseas-born. Thirteen per cent of these students were from countries within the South-East Asian region, with 5.6 % from Singapore and 4.9% from Malaysia. Twenty-six per cent of teams were solely all-female or all-male, with the majority of these being female. Students completing both core and elective units required for majors or minors in economics and commerce undergraduate degrees were surveyed.

Students were surveyed while completing the team project. Three surveys in total were administered to students, with survey one canvassing their 'pre-team' experience, survey two focussing on a 'mid way' team experience and survey three assessing the 'team completion' experience. Staff managing academic courses administered the surveys during class time. In addition, focus groups of students and staff from across different units were conducted. Participation by both students and staff in this project was voluntary.

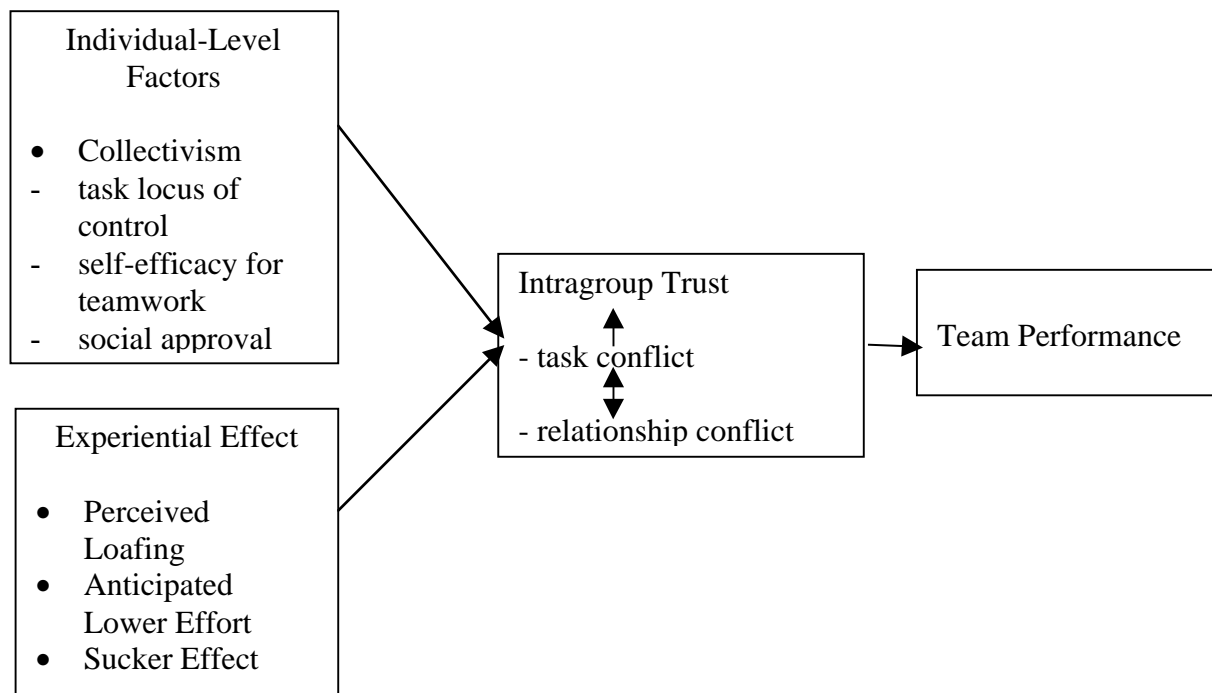


Figure 1: Antecedents of Student Willingness to Become Effective Team Members

Explaining the Model

Based on a review of the literature, it was hypothesized that team performance was affected by levels of intragroup trust which itself could be viewed as an outcome of task and relationship conflict between team members. Intra-group trust was in turn affected by individual level factors including the individual's propensity towards collectivism-individualism and sub-

scales of self-efficacy, locus of control and social approval. A further individual level factor was the experiential effect of team members which referred to individual level perceptions of loafing, anticipated lower effort and the sucker effect. Validated measures taken from the organizational behaviour literature were used to test the hypotheses. Space limitations preclude recounting the measures used in full. However, this information is available from the first author upon request. The discussion below identifies the sources from which these measures were taken, as well as the rationale for including them in this study.

Individual Factors

It was hypothesized that levels of collectivism amongst students was a significant individual factor affecting intragroup trust. Collectivism represents an individual's belief that collective or group interests should take precedence over individual self-interest (Van Dyne et al: 2000: 5). According to Shamir (1990), collectivistic behaviour such as preferring to work in a team context may be influenced by calculative concerns (i.e. expected outcomes for oneself and the perceived likelihood of attaining performance goals), internalized values (e.g. valuing co-operative norms, altruism) and identity salience (e.g. maintaining one's self concept through affiliation with others). A value sub-scale of individualism-collectivism from Eby and Dobbins (1997) was subsequently used to assess preference for working collectively, as in a team-based project.

However, quoting Shamir (1990), Eby and Dobbins (1997) clarify that understanding an individual's desire to work collectively (as in a team project) requires examining several motivational bases. Quoting Bandura (1992), Eby and Dobbins (1997:277) suggest that there are two distinct aspects of control: efficacy expectations and locus of causality. These constructs are related while remaining distinct. Self-efficacy refers to the perceived level of personal efficacy related to the exercise of effort and skill in changing one's environment. On the other hand, locus of control refers to the individual's perception of the external constraints affecting performance and the ability to modify or control these constraints (Eby & Dobbins: 1997: 278). Furthermore, Eby and Dobbins (1997: 280) also identify the need for social approval as another motivational base affecting the individual's proclivity towards collectivism. Eby and Dobbins (1997:280) describe social approval as the individual's need for affiliation with others or the individual's desire for engaging in activities with others and wanting to maintain positive social relations. They hypothesize that the need for social approval will be positively related to one's collectivistic orientation. In summary, while researching collectivism itself using a sub-scale of individual-collectivism, it was decided to also investigate task locus of control, self-efficacy for teamwork and the need for social approval using measures developed by Eby and Dobbins (1997) in trying to understand how collectivism influences student processes in team projects.

Interest in researching collectivism and associated sub-scales was also related to interest in understanding the influence of diversity on team processes. In a study focussing on analyzing the differences that cultural norms have on behaviours for group tasks, Cox, Lobel and McLeod (1991) found that people from collectivist cultural traditions displayed more co-operative behaviour than groups composed of people from individualistic cultural traditions. Similarly, organizational researchers also found that misunderstandings will occur more readily between individuals from different cultures, due to differences in cognitive styles and cultural values (Watson & Kumar: 1992; Watson, Kumar & Michaelson: 1993; Kirchmeyer: 1993; Earley & Mosakowski: 2000).

Experiential Effect

In addition to individual factors, it was hypothesized that team performance would be affected by the experiential effect of working in teams. This was particularly in relation to other team

members' contribution, assessed by perceived loafing, anticipated lower effort and the sucker effect (Mulvey & Klein: 1998). Perceived loafing is when one or more group members are perceived as contributing less than they could to the group (Comer: 1995). The negative effect that this can have on group members' motivation can subsequently lead to an anticipated lower effort. The 'sucker effect' is when group members may reduce their own effort rather than carry members engaged in 'loafing'. It was hypothesized that the cumulative effects of these variables influence intragroup trust which in turn affects overall team performance.

Intragroup Trust

Intragroup trust refers to the degree of confidence existing between team members. In addition to individual factors and an experiential effect, levels of intragroup trust between team members is affected by task conflict. This is a perception of disagreement among group members about their decisions and involves differences in viewpoints, ideas and opinions (Simons and Peterson: 2000: 102). Task conflict leads to relationship conflict, which is defined as a perception of interpersonal incompatibility and typically includes tension, annoyance and animosity among members (Simons and Peterson: 2000: 102). Items selected to assess these subsets of intra-group trust were sourced from Simons and Peterson (2000).

Analytical Strategies

A 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7) was used. In addition, students were asked in each survey to indicate their gender and country-of-origin. For ease of analysis this data was subsequently grouped into Australian and overseas-born categories. Results were analyzed using a one-way ANOVA function of the SPSS programme.

Results

The results derived are preliminary analyses. Further analyses are being undertaken with the same data set. These include cross matching of cases. As this analysis is still in progress, these results will be reported at a later date. However, the results obtained from analysis undertaken thus far highlight significance between gender and country-of-origin, and individual-level factors of social approval, self-efficacy for teamwork and the experiential factor of the sucker effect. Table 1 confirms that the data shows levels of significance between gender and social approval in that females were more motivated to seek approval from team members than were males. Males scored significantly higher ratings on the sucker effect than females. That is, males were more likely than females to reduce their effort in the team project as a result of perceiving lower effort by other team members.

Variable	Mean Female	Mean Male	F-ratio	Significance
Social Approval	3.68	3.39	9.066	.003
Sucker Effect	1.90	2.39	5.341	.022

Table 1: Gender, Social Approval and the Sucker Effect

Table 2 reports statistically significant findings in relation to country-of-origin effect and sub - scales of social approval and self-efficacy for teamwork. Table 2 highlights that overseas-born were more likely to seek social approval from team members than Australian-born, whereas Australian-born demonstrated higher levels of self-efficacy for teamwork or felt more confident in their ability to successfully manage the team project, than overseas-born students.

Variable	Mean Overseas-born	Mean Australian - born	F-ratio	Significance
Self-efficacy for Teamwork	5.27	5.47	4.277	.040
Social Approval	3.68	3.47	5.063	.025

Table 2: Country-of-Origin, Social Approval and Self-Efficacy for Teamwork

Discussion

The aim of this study was to provide a contribution to understanding the effects of gender and country-of-origin on individual level student processes in academic team projects. In overall terms, the findings indicate that significant relationships were found between gender on the need for social approval, as well as gender on the sucker effect. Significant country-of-origin effects were found in relation to social approval and self-efficacy for teamwork. While useful, the results however do not identify levels of significance for individualism-collectivism, task locus of control and perceived loafing and anticipated lower effort within the experiential effect set of factors. In addition, levels of significance were not found for measures examining intragroup trust. Nonetheless, the results obtained lead to speculation that individual level team member performance can be affected by gender and country-of-origin factors.

Gender Influence

With respect to the statistical significance reported on gender effects, focus group discussions also confirmed that there was a gender effect on individual level team member performance. This was particularly in relation to the project management skills of females as opposed to male students. Females were perceived as better organised, particularly in the first year of undergraduate study: *"But I think there's a gender issue here. The young female students do things quicker, better, faster, they're more organized. Now, some of the guys are slow. They put things off"* (X, Staff Member, 31st October, 2001).

These results lead to speculation that all-female student teams could perform better than mixed teams or even all-male student teams. This is because in an all-female student team, motivation to seek social approval may be dampened, and female students run a lesser risk of suffering from perceived loafing or anticipated lower effort in the absence of males who have a greater tendency to display a sucker effect. Complemented by better organizational skills than males as highlighted through focus group discussions, all-female student teams may in fact improve female team member performance. However, without comparative analysis of the performance between all-female and all-male teams and mixed teams, this proposition will have to rest at the level of speculation at this stage. Elaborating on this proposition will also require further examination of the interaction between gender and country-of-origin effect as discussed below. Finally, the research project aimed at investigating individual level factors rather than overall performance of student teams. Thus the data set was not constructed with this aim in mind, thereby making it difficult to extract this information. However, performance will be assessed in future research and more detailed data on team composition vis-a-vis team gender composition will be gathered.

Country-of-origin Effect

While only identifying statistical significance with respect to social approval and self-efficacy for teamwork, it is nonetheless suggested that the findings from this research project reinforce the 'homophily' effect (Smith, Fisher and Sale: 2001; Volet & Ang: 1998). This is because the increased tendency of overseas-born to seek social approval, coupled with lower levels of self-efficacy for teamwork, may explain why these students gravitate towards each other so as

to be able to minimize these effects. Focus group information reinforced this observation. As one discussant noted: "*I think there's also the issue of overseas students or Asian students tending to stick to each other. And at the same time you have Australian students, because they go to school together, they tend to stick together. So we probably need some cultural awareness first...*" (Y, Staff Member, 31st October, 2001). Again however, in the absence of analysis of subsets of country-of-origin data (that is, teams composed of members from the same cultural groups), and investigation of team performance vis-a-vis cultural diversity, it is difficult to be more conclusive. Again however, refinements planned for future data collection will hopefully address this issue.

Conclusion

A number of limitations emerge with this research. Analysis of country-of-origin data into Australian and overseas-born categories is an unrefined indicator and limits more meaningful analysis with respect to broader issues of cultural effects such as clarity on collectivism-individualism measures. This is compounded by a failure to ask respondents to specify their cultural identity rather than their country-of-origin. Future research will address both these limitations. Nonetheless, it is suggested that this study provides some insight into the influence of gender and country-of-origin on individual level student team performance. The significance of these effects may be their capacity to generate creative solutions to address the problems faced by students in managing team processes. As Hartel (2000) concludes, the negative effects of diversity on performance are not inevitable. Hartel (2000) goes on to suggest that improving the 'openness' of employees to diversity or rather enhancing their interpersonal skills in managing diversity, can assist to improve worker productivity. In response and drawing on the research findings reported here and elsewhere (Caspersz, Wu & Skene: 2002), the authors are currently involved in project work to develop a resource 'package' for staff managing student team projects. This includes strategies aimed at enhancing student 'openness' towards diversity. These focus on raising students' awareness about their response to diversity issues, and then helping them improve abilities to communicate, negotiate and handle conflict resolutions.

However, managing diversity effectively also requires ensuring that there are opportunities in the team project for group members to get to know each other. This requires an investment of time by staff administering student team projects to enable students to get to know each other better. As student Z said, "*I think maybe one of the ways to get over it (diversity differences) is just really to get to know each other and take time to get to know each other before you go straight ahead into, you know...The best team project I ever did we started off with a four hour session at the tavern..*" (20th September, 2001).

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