

UBC Social Ecological Economic Development Studies (SEEDS) Sustainability Program

Student Research Report

Everybody Clean Up!: Group Cohesion and Social Loafing in Common Kitchens

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Executive Summary

The aim of this study was to examine whether increased awareness of group cohesion in common kitchens would reduce social loafing behaviour, as defined as leaving dishes in the sink for others to wash. Over the course of 4 weeks, measurements were taken twice a day in 3 common kitchens in the CIRS building at UBC, regarding the numbers of dishes left in the sinks and whether those dishes were rinsed. Each kitchen was assigned to either a control condition, involved a generic poster above the sink, or the experimental condition with a poster specifically intended to increase awareness of group cohesion. At the start of the third week, conditions of each common kitchen were switched, providing a within-subject design. We found there were no statistically significant differences between social loafing behavior and awareness of group cohesion, on either the number of dishes left in the sink ($p = 0.383$, $\alpha = 0.05$) or the cleanliness of those dishes ($p = 0.362$, $\alpha = 0.05$).

Introduction

Common kitchens, a kitchen shared by multiple users, are often present in residential, industrial and commercial buildings spanning a variety of sizes and functions. There are great benefits that come with the utility of common kitchens. Common kitchens allow for access to sustainable and reusable utensils, appliances and tools for the preparation of meals, and staple goods such as sugar, salt, and tea, as well as access to hot and cold water. These utilities are often intended to facilitate stronger satisfaction with meals, positive mood and greater food security. However, common kitchens may also lower the satisfaction of a number of users due to social loafing in the shared maintenance of these kitchens. An issue that is prevalent with common kitchens is the relegation of menial tasks such as the washing of dishes to other staff members, despite a clear understanding of the responsibility to wash one's own dishes. The action of leaving one's dishes for others to clean can be considered a social loafing behaviour. Social loafing is defined as the act of an individual person committing less effort in achieving a group goal, relying on group members to exert more effort, than compared with individual actions towards the same goal. In this case, individuals would wash their own dishes if it was solely their responsibility, but the introduction of being in a group has resulted in reduced effort by a number of group members in washing their own dishes, to the detriment of the kitchen space.

There has been a significant amount of research conducted on the effects of group cohesion on social loafing. Group cohesion is often defined as the degree to which a member feels part of a group. It has been shown that increased group cohesion results in reduced social loafing in physical sports (Hoigaard, Tofteland, & Ommundsen, 2006). In addition, it has been shown that social loafing behaviour is correlated with significantly reduced group cohesion (Shiue, Chiu, & Chang, 2010). While there have not been any studies examining a feedback loop between decreasing/increasing social loafing and group cohesion or a dual causality, a clear causality of group cohesion and social loafing has been shown for physical activities (Shiue, Chiu, & Chang, 2010).

There are additional effects of social loafing that can negatively impact the inhabitants of the CIRS building. Social loafing has been shown to fully mediate the effect of team feedback on group cohesion (Penarroja, Orengo, & Zornoza, 2017). In other words, social loafing behaviour can eliminate the group cohesion benefits of communication in a team. However, according to Chris Lam (2015), social loafing can be decreased by communication quality and task cohesion, defined as cohesion specific to the focus of the completion of a task. This suggests that there is a critical point in which social loafing would eliminate the benefits of team communication, but communication below that critical point of social loafing can help eliminate social loafing.

In our study, we will examine the effects of increased awareness of group cohesion on social loafing behaviour in a setting where there has been extensive communication intended to decrease social loafing behaviour for a long period of time (est. 3+ years). We will be observing the numbers of dishes left in the sink over a 4 week span, whereas half the weeks will have a generic poster over the sink reminding participants of the need to clean one's own dishes and the other half of the weeks having a poster that emphasizes group cohesion. The study will take place in the Centre for Interactive Research for Sustainability (CIRS) at the University of British Columbia (UBC), in Vancouver, British Columbia, Canada.

Research Question and Hypothesis

Our research question is “What is the effect of awareness of group cohesion on social loafing behaviour for cleanup duties in common kitchens?” Social loafing behaviour, in this circumstance, is defined as leaving dishes in the sinks of the common kitchens for other to clean. We hypothesize that increased awareness of group cohesion will decrease social loafing behaviour and decrease the amount of dirty dishes left in the sink. Posters that promote awareness of group cohesion will decrease the amount of dishes left in the sink, as compared to generic posters that emphasize the shared responsibility of cleaning common kitchens. Our second hypothesis is that posters that promote awareness of group cohesion will result in cleaner dishes left in the sink as defined by whether or not there has been an attempt to rinse the dishes, a partial reduction in social loafing behaviour rather than a complete elimination of social loafing behaviour.

Methods

The independent variable is group cohesion as facilitated through the posters in our intervention. The number of dirty dishes left in the sink per floor is the dependent variable for our first hypothesis and our dependent variable for our second hypothesis is the percentage of rinsed dishes left in the sink.

Participants

Any and all students, faculty, and staff members who use the three kitchens in the CIRS building to clean dishes after lunch. Further demographic information on the participants are unknown as the experimenters attempted to minimize the intrusiveness of the experiment to reduce the Hawthorne effect.

Conditions

In this study, we used an intervention to find out whether our posters emphasizing group cohesion can decrease social loafing behavior and increase the prevalence of clean-up duties in the CIRS building. The control condition is a generic poster emphasizing that public spaces require people to maintain cleanliness of those spaces (See Appendix, *Figure 1*). The other poster contained logos of the building and the academic institution (CIRS & UBC), as to increase awareness of group cohesion (See Appendix, *Figure 2*). Both posters contained the message “Please be sure to not leave your dishes in the sink for others to clean” printed on the poster. As the total number of participants and the number of dishes they produce is unknown, we conducted a within group design, as a between subject design would introduce the confound of measuring differences between the floors rather than the differences between the conditions.

We utilized a random number generator on the first day of the experiment to determine which floors were assigned to the control and experimental condition. Outcomes of the random number generator that assigned every floor simultaneously to either the control or experimental condition were rejected. For the first 2 weeks, we placed our control condition posters on 2nd and 4th floor kitchens, and the experimental poster on 3rd floor. In weeks 3-4, we switched the posters to the opposite conditions of the first 2 weeks.

Measures

Measurements were planned for every weekday, from March 1st, 2018, to March 29th, for a total of 21 days, for a theoretical maximum of 126 data points. Due to events that prevented data collection (restrictions to entering the floor) or scheduling errors on the experimenters, only 122 data points were collected. Depending on experimenter availability, two measurements were taken a day, one at either 12:00pm and 2:00pm and one at 5:00pm. We coded for degree of dirtiness between rinsed dishes and non-rinsed dishes for additional comparisons. The measurements between 12:00pm/2:00pm and 5:00pm differed (see Appendix).

Procedure

Five researchers took turns checking for amount and dirtiness of dishes left in sinks in CIRS building kitchens, twice a day (12:00pm/2:00pm and 5:00pm) for 5 days a week. Each researcher recorded their findings on an online spreadsheet document, indicating the total number of dishes and the number of rinsed and unrinsed dishes for every kitchen.

Results

In order to account for history effects in the data collection, the results were weighted by week. (See Appendix for more information)

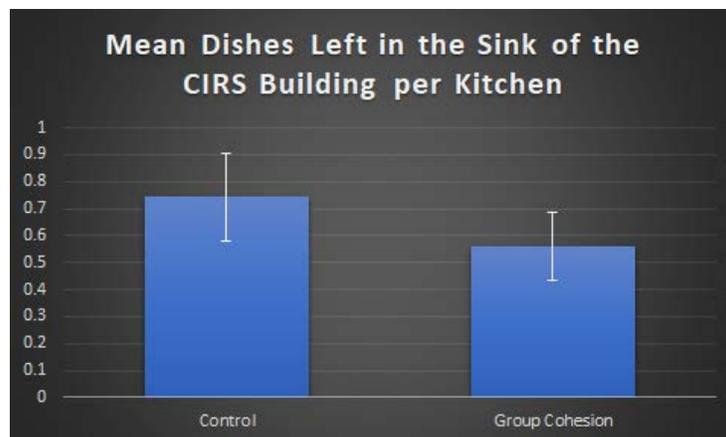


Figure 2: Graph of mean number of dishes with error bars set to 1 standard error in both directions.

There were no significant differences between the number of dishes left in the sink by the control condition ($N = 63$, $M = 0.774$, $SD = 1.287$, $SE = 0.162$) and the experimental condition of increased awareness of group cohesion ($N = 59$, $M = 0.562$, $SD = 0.979$, $SE = 0.127$), $t(120) = 0.875$, $p = 0.383$, $\alpha = 0.05$. There was a very small effect size of Cohen's $d = 0.159$.

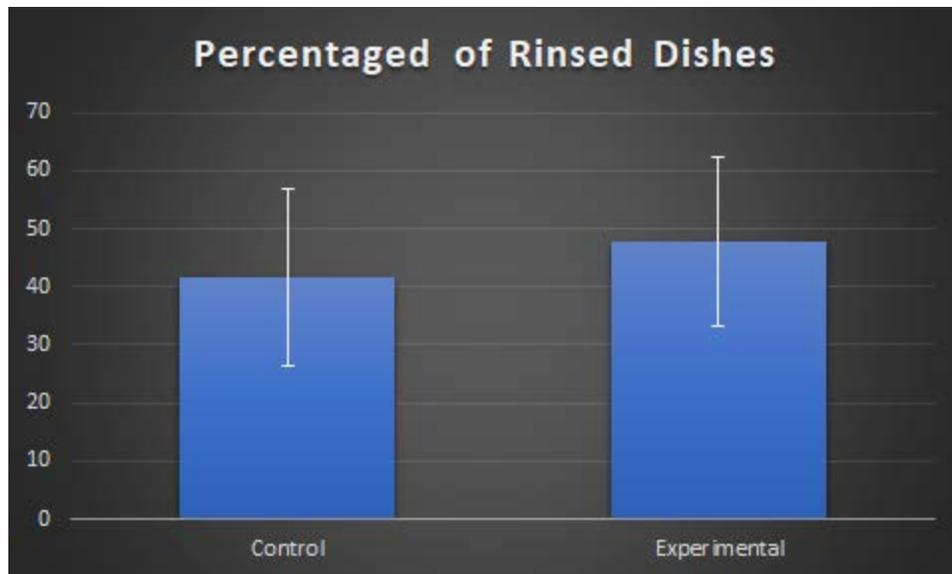


Figure 2: Graph of the percentage of rinsed dishes with error bars set to 1 standard error in both directions.

There were no significant differences between the percentage of rinsed dishes left in the sink by the control condition ($N = 63$, $M = 0.356$, $SD = 0.868$, $SE = 0.109$) and the experimental condition of increased awareness of group cohesion ($N = 59$, $M = 0.229$, $SD = 0.644$, $SE = 0.084$), $t(120) = 0.916$, $p = 0.362$, $\alpha = 0.05$. There was a very small effect size of Cohen's $d = 0.166$.

There were a significant amount of data points to assess the effects of group cohesion on social loafing on a per-floor basis to a statistical significance.

Discussion

While our results were statistically insignificant, the directionality of the effect of group cohesion (more rinsed dishes, less dishes overall in the group cohesion condition) is in the direction of our hypothesis. Previous studies have shown the effectiveness of group cohesion on social loafing behaviour. Although increased awareness of group cohesion in the common kitchens was ineffective, this may be due to flaws with the intervention and with the study. Foremost, it is not known whether the participants noticed the signage. If participants did not notice the signage, no manipulation would have taken place, resulting in a lower difference between the control and experimental group, as the experimental group would not have been able to fully manipulate every participant. Second, while it was considered to take measurements of the number of dishes in the dishwasher as to provide a baseline of total number of dirty dishes produced, we believed it to be too intrusive and may have alerted floor residents to the purpose of the study. Introducing a Hawthorne effect would have decreased the external validity of the experiment. Further studies would benefit from non-intrusive technologies that can monitor whether a dish has been placed into the sink or dishwasher. In addition, such technology might also determine whether social loafing is an infrequent action perpetrated by a variety of staff members or if it is a frequent action perpetrated by a small number of staff members. Furthermore, such technology can allow for the surveying of staff members to determine why participants would leave their dishes in the sink, which would provide insight as to the

mechanisms driving social loafing. Third, a post-survey to determine whether participants in the study were aware that putting dishes in the sink is against the policies of the common kitchen and whether the participant in the study noticed the posters during the study. This would provide a manipulation check. One confound in the study is the use of pictures to emphasize awareness of group cohesiveness. Pictures can increase visibility of posters which would limit the results of this study as it would be unclear whether or not it was awareness of group cohesion or increased visibility of signage which would have resulted in differences in social loafing.

Future studies can also examine the relationship of different factors, other than group cohesion, on social loafing. Ching-Hui Shih and Yao-hua Wang (2016) suggest that friendship in workplace can reduce social loafing.

Recommendations

In our study, we replicated the placement of the original signs regarding cleanup of dishes, in order not to confound our study design. However, the placement of the signs was in our opinion, suboptimal. One small sign was placed above each sink, but the overhang of the kitchen cabinets partially blocked the view of the sign, especially for taller people. One recommendation would be to increase the visibility of signage. Placing signs expressing the need for everyone to clean up after themselves and highlighting group cohesion in more places would, in our opinion, decrease the amount of dirty dishes left out. Signs adhered to the tables adjacent to the kitchen, would give pre-emptive reminders to clean up, before those finishing their meal made it to the sink. Placement of the signage on the tables should be visible on all sides of the table. In addition, reminders about the sustainable mindset of the CIRS building, might influence a stronger clean up response. Even though our study did not produce significant results, other studies of group cohesion have shown it to decrease social loafing.

Appendix



Figure 1: The Control Condition Poster



Figure 2: The Experimental Condition Poster

Afternoon vs Evening Measures

There is a significant difference between the afternoon and evening measurements. Of the 20 instances when the measurements were non-zero for the number of dishes left in the sink, the value between the 12:00pm/2:00pm and 5:00pm differed 95% of the time. It is unclear as to whether the measurement taken that matched between the 12:00pm/2:00pm and 5:00pm was the same dish, as our data did not specify the individual dish, rather it specified the number of dishes and whether they were rinsed or not.

Weighting:

Week	Number of dishes (total = 80)	Weighting Multiplier (rounded to 2nd decimal place)
March 1st 12/2pm - March 8th 2pm	15	1.33
March 9th 12/2pm - March 15th 5pm	22	0.91
March 16th 12/2pm - March 23rd 12/2pm	14	1.43
March 23rd 5pm - March 29th 5pm	29	0.69

References

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