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ORIGINAL ARTICLE

The correlation between unmet course expectations and perceived course-related stress

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ABSTRACT

This paper sets out to find whether unmet course expectations is correlated to perceived stress of course participants. The data used was collected through an online questionnaire composed of Likert items, dichotomous questions and open questions, for which it was answered by a small sample of engineering and design students at IdeaSquare participating in an entrepreneurial summer programme ($n = 13$). The main finding of this study suggests that there is a weakly positive correlation between perceived stress and unmet expectations, suggesting it is vital for organizers to communicate clearly what is expected of their course.

Keywords: Perceived stress; unmet expectations; academic stress; course stress; stress; expectations.

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INTRODUCTION

When people willingly engage in a group activity and have knowledge of its design, they typically carry a set of expectations. When the reality of the activity fails to fit the internalised expectations, participant engagement and performance drops. Ultimately, this leads to pitfalls such as low commitment or poor transfer of knowledge from instructor to participant. Such pitfalls, like the aforementioned ones, have been studied in correlation to stress, for example in the work by Muhammad Amin (2018) and A. Goonetilleke (2018), finding that emergency rescue workers showed less job commitment under work stress, while hotel workers performance worsened under work stress. This correlation has also been studied amongst students. Habibah Elias (2011) found that there was a significant but weak negative relationship between stress levels of undergraduate students and their academic achievements.

However, the number of studies regarding individual participants' unmet expectations compared directly to their stress levels are limited. Petra Bosch-Sijtsema (2007) notes that individual expectations of team members are not often investigated. More information on whether a correlation between unmet expectations and stress exists can be useful as extensions to similar research regarding expectations or stress. Furthermore, correlation between unmet expectations and stress can prove to be useful knowledge for jobs that have event-organizing elements, including course coordinators and event organizers for group events and/or individual events. Therefore, this study aims to increase the number of papers available that address this relation between unmet expectations and stress.

This paper will look into correlating participants' perceived stress to the number of unmet expectations that they set for a college course. Therefore, the main research question that this paper aims to answer is:

Do unmet course expectations influence perceived stress experienced by participants?

This paper establishes the necessary background knowledge needed, alongside the survey given to students, and then discusses the limitations and conclusions derived from the statistics of the survey. It ends with several further study recommendations.

THEORETICAL BACKGROUND

In this paper, stress is viewed as a person's reaction mentally and physically to adapting to a new condition (Elias 2011). For this paper, the stress looked at will be college focused stress. To narrow down the components of this stress, the work of Vivek B. Waghachavare (2013) is referred to. Waghachavare (2013) breaks down college focused stress into four separate factors: academic, environmental, social, and health stress. As the purpose of this paper is to look into the expectations of a course, only academic stress is addressed.

To further narrow what will be discussed, only academic stress that stems from self-expectations is considered, as self-expectations play a large role in college student stress build-up (Calaguas 2012). While

there are more factors that affect academic stress such as parental expectations as well as teacher expectations, self-expectations were chosen as they reflect appropriately the research question posed (Calaguas, 2012).

Expectations can be defined as general beliefs held by individuals about a certain subject (Bosch-Sijtsema, 2007). They play a critical role in the perception of a subject. In particular, having higher expectations can lead to more impactful negative experiences when the expectations do not fit reality (Naddeo, 2015). Naddeo found this connection while doing a study on the perceived comfort of mattresses. Such negative experiences can include work-related stress. Jana Lait (2002) notes that there is a positive correlation between (human service) workers' unmet expectations and work-related stress, attributed to their expectations of the job and the reality of the job.

However, in a group setting, individual expectations can act as sources of misunderstanding and conflict amongst group members (Bosch-Sijtsema, 2007; Van Roermund, 2014). This conflict can occur due to reasons such as miscommunication between instructor and learner, as well as conflicting requests between different learners in a group (Van Roermund, 2014; Bosch-Sijtsema, 2007). In the UTILITY case study from the work of Petra Bosch-Sijtsema (2007), expectation mismatches led to motivational problems and dissatisfaction, and the members of a group did not perform as well as expected by the instructor. The lack in performance can be attributed to work/academic and social related stress (Elias, 2011; Goonetilleke, 2018; Muhammad, 2018).

Through the results of these mentioned studies, we hypothesize that *there is a positive correlation between unmet expectations and course-related stress*. This stress can manifest itself in manners such as lack of engagement, as was shown by Muhammad Amin (2018), and depressive symptoms, as mentioned by Glenn M. Calaguas (2012). For the purpose of this paper, the stress looked at will not encompass depressive behaviour nor engagement levels. It will measure the increase/decrease in perceived course stress relative to the amount of stress experienced in their daily university life. This subjective measure was taken to establish a first-order correlation in a realistic period, in comparison to doing an observation of behaviour related to stress for each participant. This choice comes with pitfalls, principally in the loss of information about what constitutes a datum for stress to be measured relative to, as each participant has their standard of what constitutes "stressful" and "not stressful". Nonetheless, this pitfall can be rebutted with the fact that stress is a *relative* experience. A particular event at a certain time can act as a stressor for one participant but not for another. Therefore, categorizing participants with a status of "stressed" or "not stressed" based on key behaviour can prove fruitless, as the standard of stress changes over time.

METHOD AND DATA

The data for this paper was collected through an online questionnaire composed of a mix of closed and open questions. The closed questions were a mix of Dichotomous questions and 5-points Likert items. The open questions were primarily made to follow up on dichotomous 'no' answers.

The questionnaire was posed to 20 students from a Dutch university who participated in the 2019 IdeaSquare Summer School Programme approximately a month after the course ended, with anonymous answering amongst participants. The students came from engineering and designing backgrounds, who were exposed to a mix of entrepreneurial group activities related to establishing an alternative use of an ATTRACT technology. The course was conducted from the 7th to the 27th of July 2019.

The questionnaire did not vary amongst participants and all participants could fill this questionnaire in at their leisure. The questions posed were selected to provide empirical data on students' stress levels relative to a daily university work schedule, as well as several expectations categories (journal paper expectation, group work expectations, and course advertisement expectations). Additionally, several questionnaire elements regarding assigned group number, alongside current university major were asked. These questions were posed such that we could look into whether the data was primarily focused around certain workgroups or was a general trend amongst students.

The questionnaire answers were not involved with post-processing techniques to standardize or normalize them. The answers provided are looked at one-by-one to construct the results that appear in the *Results* section.

RESULTS

Note that out of the 20 students for which this survey was posed, 13 replied. The collected data shows a weakly correlated linear relationship between the number of course expectations met and the perceived stress in students (see Fig. 1). Note that due to the discrete scale used, points overlap with each other. This weak correlation supports the hypothesis that there is a positive correlation between the number of unmet expectations and course stress work. However, due to the weak correlation, we cannot reject the opposite of the hypothesis - there is not a positive correlation between unmet expectations and *course-related stress.*

To investigate this weak correlation, we examined the arithmetic mean of the data received and the standard deviation in the data. On average, the participating students had less than half of their initial course expectations met (see Table 1). From the Likert items and dichotomous questions, 1 out of 13 students had most of their course expectations met directly from the

advertisement, while 6 had half their course expectations met and 6 had less than half of their course expectations met. Meanwhile, 9 out of 13 believed that the group work during the course was what they had expected. 7 out of 13 believed that the journal paper element would have been more technical or scientific (in respect to natural sciences, not social sciences). 5 out of 13 believed that there was not enough interaction between the participants and CERN.

However, the students perceived the course to be less stressful compared to group work in university on average (see Table 2). This statement has high uncertainty, shown by the data's standard deviation. Furthermore, the spread of the data becomes larger as the number of met expectations becomes lower. From a different perspective, the average stress was looked at on a group-to-group basis (see Fig. 2). Whereas most of the groups had an average stress level between 1 and 2, Group 5 displays an average stress level of 4.34.

Tab. 1. Expectations - How many of the expectations you had about the summer programme were met? (1 = None, 3 = Half, 5 = All)

Sample Mean $\underline{x}$	Standard Deviation σ
2.1667	0.9375

Tab. 2. Perceived Stress - How stressed were you working throughout the three weeks, in comparison with group work in your study? (1 = A lot less stressed, 3 = Neutral, 5 = A lot more stressed)

Sample Mean $\underline{x}$	Standard Deviation σ
2.3333	1.4975

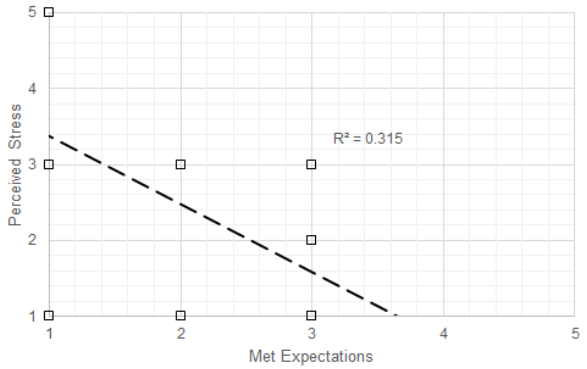

Fig. 1. Relation between the results collected on the Likert items pertaining Met Expectations and Perceived Stress.

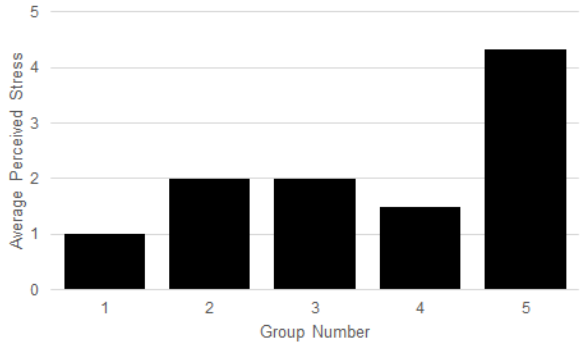

Fig. 2. Relation between average perceived stress and the groups. Note how the scale ranges from 0 to 5 instead of 1 to 5.

DISCUSSION AND CONCLUSIONS

As mentioned in the *Results* section, the paper shows support towards a weakly positive correlation between unmet expectations and course-related stress. However, we are unable to reject the opposite of the hypothesis due to this weak correlation. Coupled with a large deviation and a small sample size, it is not currently possible to answer the research question. Nonetheless, the data suggests that it is important for organizers to clearly communicate what is expected, as the low number of expectations is explainable.

The low number of met expectations of the students comes from a combination of how the course was advertised, what was expected of a scientific paper, and the amount of interaction with CERN itself. About half the students had their expectations met from the advertisement of the course, half the students believed that the scientific paper would have been more technical, and about half believed that not enough interaction with CERN occurred, with a comment mentioning that CERN acted more as a site, rather than what the course was about.

An important implication of the survey results is that other unmeasured factors may affect perceived stress more than unmet expectations, as shown by Fig. 2, which strongly suggests another source of stress was present.

An important consequence of this implication is the large standard deviation. As all groups are composed of a non-negligible number of participants and that all answers are weighted the same, the answers provided by Group 5 present a large contribution to the deviation.

A big limitation to this research is that there is no method to measure how stressful the course should be such that the stress of each team could be compared to it. Another limitation of this research is the participant type that answered the questionnaire. As all participants were part of the Honours Programme of their university, this status creates bias in the data sample, as the participants may react differently to stress compared to their non-honour counterpart. In addition, the background of the participants is unilateral, as all of them come from an engineering or design background. This creates a bias towards a correlation for only a specific subset of participants. Furthermore, additional bias in forms such

as culture, personal backgrounds, and family are not considered in this paper.

Stemming from Fig. 2, a possible research direction would be into a study of course-related stress in relation to group dynamics. In this scenario, possible empirical parameters could be personality types, opinions on matters such as deadline, etc. As an alternative, further research with a larger sample size assists in minimizing the standard deviation caused by anomalies. The collected data can then be used to establish a more confident answer to the research question. As a second alternative, the results of this paper can be validated with experimental data. This would allow the correlation between stress and expectations to be further tested at IdeaSquare or in similar settings. A possible experiment for this case involves recording participant behaviour during a set of task-intensive activities. This behaviour is then compared to an established stress standard. Each participant is informed of the expectation of the tasks, but pieces of information are omitted.

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