

A Large Scale Survey of Motivation in Software Development and Analysis of its Validity - Relations Between Motivators

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0.1 Relations Between Motivators

The above motivators are not all independent. It is therefore interesting to see how they correlate with each other. We now consider motivation and all its motivators as variables and examine the relations between them. We calculated the Pearson correlation between every pair of variables, and looked for connected components on the variables graph, in which an edge exists given a high Pearson correlation.

We use two thresholds of 0.8 and 0.5 Pearson correlations. The aim of the thresholds is to identify strong relations and moderate relations. We compute the correlations of the variables using three populations: all participants, 284 paid participants, and 377 GitHub participants (those who reported a project hosted on GitHub). For each pair of variables, we use the answers of all participants that answered at least one question per variable. The use of the different populations is to see if there are differences in motivation relations in different contexts.

Figure 1 presents the sets of correlated variables identified in different contexts. In all contexts, the 5 variables at the bottom have correlation lower than 0.50. In all 3 populations ‘Recognition’ and ‘Community’ are strongly correlated. However, as noted above, recognition and community share two questions regarding recognition from the community (questions 3.24 and 3.25). Removing the common questions, the Pearson correlation of community and recognition is 0.37 on the entire population, 0.35 on GitHub participants, and 0.26 on paid participants. Hence, their actual correlation is much lower.

‘Enjoyment’ and ‘Motivation’ are moderately correlated for GitHub users and for paid users, and also correlated with ‘Ownership’ on all participants. ‘Importance’ is moderately correlated with ‘Recognition’ and ‘Community’ on all participants and with ‘Challenge’ on paid participants.

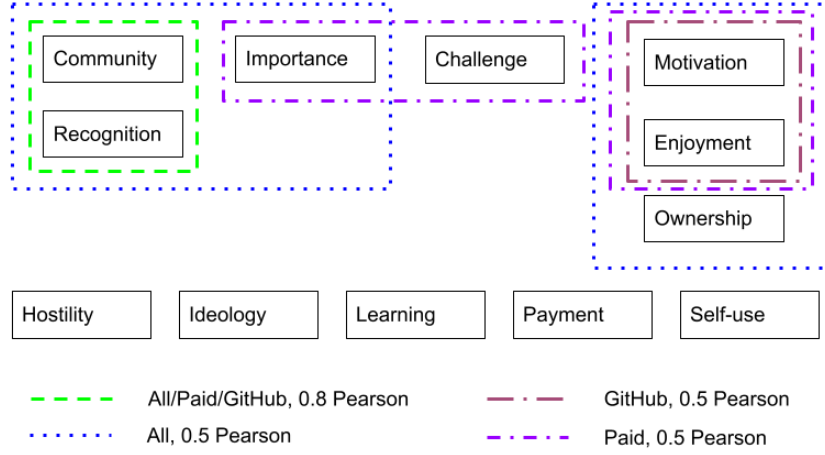


Figure 1: Relations between variables at Pearson levels of 0.8 and 0.5, on the whole population, paid participants, and GitHub participants.

In conclusion, the motivator with the highest correlation with motivation is enjoyment. Other motivators are less correlated, implying that they are not redundant and each one exposes a different behavioral aspect.