



## Explanatory Statement

### EXPERIENCE WITH EMOTIONS DURING REQUIREMENTS CHANGE HANDLING

*Project funded by ARC Australian Laureate Fellowship FL190100035*

**Software requirements changes (RCs)** can be additions, modifications, and deletions of functional and non-functional requirements (Madampe et al., 2021). RCs are inevitable in software engineering and pose a risk to many aspects of a project, including the cost and quality of the software. Therefore, it is crucial to handle RCs with care, hence making RC handling a responsible task.

**Please read this description in full before deciding whether or not to participate in this research. If you would like further information regarding any aspect of this project, you are encouraged to contact the researchers via the email addresses listed below.**

#### What does the research involve?

**Background:** Our previous research indicates that software practitioners feel several emotions ranging from positive (e.g., energetic, calm) to negative (e.g., anxious, depressed) when handling RCs (Madampe et al., 2022). Further, an interview-based study we conducted shed light on aspects such as emotional awareness, emotion coping mechanisms, and their consequences with respect to RC handling scenarios.

**Objective:** The objective of this study is to gain a further understanding and verification of what we found from the interview-based study.

**Procedure:** This project follows the below step-by-step process.

**Data collection:** If you are willing to participate in this study, you may fill in this questionnaire (around 20 minutes to fill) consisting of the consent to participate, questions on demographics, and your experience of the emotional journey during RC handling.

**Data analysis:** The researchers will analyse the collected data using established analysis techniques to derive inferences and meaning.

#### Invitation

As a software practitioner, we invite you to participate in this study, and your participation is voluntary.

#### Consenting to participate in the project and withdrawing from the research

**Consenting:** As a general practice, you are required to give your consent to participate by ticking the boxes given in the latter part of this page.

**Withdrawing:** You can exit without completing this questionnaire without giving a reason. All data will be deleted once you exit without completing all the questions. There are no consequences to

withdrawal.

**Possible benefits**

Knowledge and insights about experiencing emotions during RC handling and practical guidelines for a better RC handling experience.

**Confidentiality**

This survey is anonymous. Any research publication published as a result of the study will not identify you, your company or any non-participant in your company.

**Storage of data**

Data in a Google Drive with restricted access (only investigators have access) for a period of 5 years and destroyed thereafter.

**Use of data for other purposes**

In accordance with data-sharing guidelines, data may be made available for use by other researchers. This data will be held in Figshare and may be a requirement of some journals prior to publication. Any shared data will not include your identifying details.

**Results**

The findings of this study will be published in academic and practitioner-based journals, conferences, and magazines. Further, free access to the publications in the form of preprints will be available on arXiv (<https://arxiv.org/>).

**Complaints**

Should you have any concerns or complaints about the conduct of the project, you are welcome to contact the Executive Officer, Monash University Human Research Ethics Committee (MUHREC):

**Executive Officer**

**Monash University Human Research Ethics Committee  
(MUHREC)**

**Room 111, Chancellery Building D,  
26 Sports Walk, Clayton Campus  
Research Office  
Monash University VIC 3800**

**Tel: +61 3 9905 2052 Email: [muhrec@monash.edu](mailto:muhrec@monash.edu)**

**Fax: +61 3 9905 3831**

**INVESTIGATORS**

Dr Kashumi Madampe, A/Prof Rashina Hoda, and Prof John Grundy.

**CONTACT INFORMATION**

If you have any questions regarding this interview and the project, feel free to contact Dr Kashumi Madampe at [kashumi.madampe@monash.edu](mailto:kashumi.madampe@monash.edu).

**CONSENT**

I confirm that I have understood the nature of the research, and I have had the opportunity to ask questions and have had them answered to my satisfaction.

- ☐ I confirm that I am a software practitioner
- ☐ I agree to take part in this study
- ☐ I understand that I am free to withdraw my participation before the survey has been completed without giving a reason
- ☐ I agree to fill in this questionnaire
- ☐ I understand my personal information may be collected in the next section of this questionnaire

### Prolific ID

What is your Prolific ID?

*Please note that this response should auto-fill with the correct ID.*

`${e://Field/PROLIFIC_PID}`

### Demographics and Team/Project Information

This section is intended to gather basic information of the participant, team, and the project.

#### NOTE

We assure details of the participants, and all other confidential information shared will be kept confidential. The names and details of the participants will not be specified in any of the publications or report.

How old are you?

20 - 25



To which gender identity do you most identify?

- ☐ Woman
- ☐ Man
- ☐ Non-binary / gender diverse
- ☐  My gender identity isn't listed. I identify as:
- ☐ Prefer not to say

In which country do you currently reside?

Afghanistan



### General Professional Experience

Total experience in software industry (years) eg:  
2.5 years:

Total agile experience (years), if any:

Experience with software development methods:  
(Select all that apply)

- ☐ Crystal
- ☐ Dynamic System Development
- ☐ Feature Driven Development
- ☐ Kanban
- ☐ Scrum
- ☐ Scrum XP combo
- ☐ Spotify

☐ Waterfall☐ XP

Other (Please specify)

☐**IMPORTANT**

Please recall **one** current/past project where requirements changes occurred at your current company, which stands out in your experience and use that project to answer the following.

*Your selection here will be used as the basis to answer the rest of the questions in this questionnaire.*

Domain of the project:

☐ IT☐ Finance & Banking☐ Transport☐ Medical☐ Telecom☐ Healthcare☐ Manufacturing☐ Other (Please specify)

Your working mode during the project:

☐ Remote (from home)☐ In-office☐ Remote and in-office combination☐ Other (Please specify)

Your role in project:

- ☐ Agile Coach/Scrum Master
- ☐ Business Analyst
- ☐ Developer
- ☐ Manager
- ☐ Product Owner
- ☐ Tester
- ☐Other (Please specifiy)

Software development method used:

- ☐ Crystal
- ☐ Dynamic System Development
- ☐ Feature Driven Development
- ☐ Kanban
- ☐ Scrum
- ☐ Scrum XP combo
- ☐ Spotify
- ☐ XP
- ☐ Waterfall
- ☐Other (Please specify)

Iteration length:

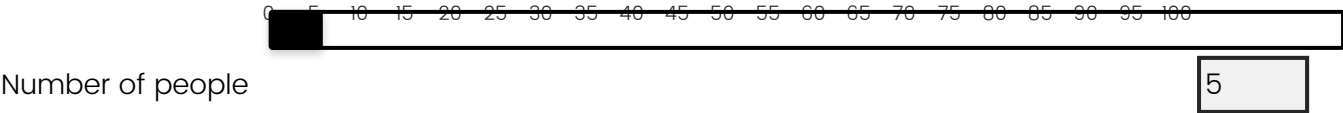


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Project category:

- ☐ Maintenance
- ☐ Migration
- ☐ New development
- ☐ Software as a Service (SaaS)
- ☐Other (Please specify)

Team size:



Software development practices followed:

	Never	Sometimes	About half the time	Most of the time	Always
Collective estimation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Customer Demos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Daily standup or team meeting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Definition of Done	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Iteration Planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pair programming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never	Sometimes	About half the time	Most of the time	Always
Product Backlog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Short iteration/sprints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Release planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Retrospectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Review meetings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scrum or Kanban board	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-assignment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sprint backlog	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
User Stories	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use Cases	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Requirements Change

A requirements change (RC) can be an addition/modification/deletion of a functional/non-functional requirement. Sometimes, the RCs can also be combinations of additions/modifications/deletions.

Considering your current/most recent project, select a requirement change that you handled. The requirements change can be of both functional and non-functional requirements.

*Your selection here will be used as the basis to answer the rest of the questions in this questionnaire.*

- ☐ Addition
- ☐ Modification
- ☐ Deletion
- ☐ Addition and modification
- ☐ Addition and deletion
- ☐ Modification and deletion
- ☐ Addition, modification, and deletion



## Agreement

Recent research shows that software practitioners feel a wide range of positive and negative emotions (e.g., energetic, calm, anxious, depressed) when they handle requirements changes (RCs).

**Considering the handling situation of the RC you selected earlier**, please rate your level of agreement with the following statements, where 1 = strongly disagree and 5 = strongly agree.

About you:

	1	2	3	4	5
I was aware of the emotions I felt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was aware of the emotions of others in my team felt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I managed my emotions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I maintained good relationships with others in my team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>(Good relationship = understood the influence of others' emotions on decision making, fostered better communication, empathised better)</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I maintained a good level of productivity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>(Good level = moderate to high)</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I shared how I felt with my manager (one-to-one)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I shared how I felt with my peers (one-to-one)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I shared how I felt with my team in group settings (e.g., at retrospectives)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Respond with the choice next to "strongly agree" to this item	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1	2	3	4	5
I openly and regularly communicated about the RC with others working on the RC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I built personal rapport with others working on the RC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I empathised with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was open to RCs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I focused on learning from the RC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I controlled my expectations about the RC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understood and used the level of autonomy I had over the implementation of RC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## About your team:

(1 = strongly disagree and 5 = strongly agree)

	1	2	3	4	5
As a team, we maintained a good level of productivity <i>(Good level = moderate to high)</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a team, we set up and maintained team goals (didn't give up the goals)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a team, we tracked commitments and decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We had a dedicated lead for RC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Select the second choice for this item	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	1	2	3	4	5
We had team/ social rituals (e.g., pre-mortems to discuss what to expect, daily sessions to go through the code with the team)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
We worked as a single cross-functional team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Open-ended Question

If you have any other comments related to the topic, please share them below.