# **Psychological Safety - Pilot**

## **Survey Flow**

Standard: Welcome page (1 Question)

**Standard: Prolific (1 Question)** 

**Standard: Screening Questions (5 Questions)** 

Standard: Demographic (9 Questions)
Standard: Project and Team (11 Questions)

Standard: Measuring psychological safety (3 Questions)

Standard. Measuring psychological safety (3 edestions)

Standard: Antecedents of Psychological Safety - Leadership (6 Questions)

Standard: Antecedents of Psychological Safety - Team (3 Questions)

Standard: Antecedents of Psychological Safety - Team 2 (3 Questions)

Standard: Antecedents of Psychological Safety - Leadership and Team (1 Question)

Standard: Antecedents of Psychological Safety - Individuals 1 (4 Questions)

**Standard: Software Quality (6 Questions)** 

Standard: Effect of Psychological Safety (10 Questions)

**Standard: Moderating variables (4 Questions)** 

Page Break

Start of Block: Welcome page

#### WP

Thanks for taking time to participate in our survey.

In this research project, we aim at understanding agile teams approaches to admitting mistakes, taking initiatives, talking about problems, and helping each other and how doing so contributes to achieving software quality. Your participation is anonymous, and the survey should take 15 mins to complete.

This research project is led by Adam Alami, assistant professor at Aalborg University, Denmark, in collaboration with Mansooreh Zahedi, assistant professor at the University of Melbourne and Oliver Krancher, associate professor at the IT University of Copenhagen, Denmark.

Your data will be used to carry out research for scholarly publication. As part of the publication process, the data will be shared in anonymized form, which does not reveal the identity of the survey participants and their organisations.

We thank you again for helping us to understand better how agile teams help each other and work collaboratively to achieve better software quality.

Sincerely,
Adam Alami, Mansooreh Zahedi and Oliver Krancher
age Break

End of Block: Welcome page
Start of Block: Prolific
*
Q66 What is you Prolific ID?
End of Block: Prolific
Start of Block: Screening Questions
SQ1 Are you currently working in an agile software development team?
○ No
O Yes
SQ2 Do your tasks in your team include software development, leading a software development team, software architecting, quality assurance (QA) tasks or leading a QA team?
○ Yes
○ No
SQ3 How many years of experience do you have working as a software developer or quality assurance analyst or engineer?
O Less than 5 years
O More than 5 years

#### SQ4 Where are you currently located?

▼ United States Other
P1 Can you please share your feedback, if any of last questions are unclear?
Page Break

Start of Block: Demographic DM1 What is your age? ○ 30 years or younger 31 - 40 years 41 - 50 years Over 51 years old DM2 How do you identify your gender? O Male O Female O Non-binary / third gender O Prefer not to say Prefer to self-describe (please specify below) P2 Can you please share your feedback, if any of the last questions are unclear?

**End of Block: Screening Questions** 

Page Break ———

Divis what is your fole in your software development team?
○ Software engineer
Senior software engineer
○ Tech Lead
O Solution architect
O Quality assurance engineer
O Quality assurance analyst
O QA Lead
Other (please specify below)
DM4 How many years of your experience has in software development and/or quality assurance?
assurance?
assurance?  O 3 - 5 years
assurance?  3 - 5 years  6 - 8 years
assurance?
assurance?
assurance?  3 - 5 years  6 - 8 years  9 - 11 years  More than 12 years
assurance?  3 - 5 years  6 - 8 years  9 - 11 years  More than 12 years

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Page Break			

DM5 How many years of your experience has been in agile teams?
O Less than 3 years
O 3 - 5 years
O 6 - 8 years
O 9 - 11 years
O More than 12 years
DM6 What is your education level?
O Bachelor's degree
O Master's degree
○ PhD
Other (please specify below)
P4 Can you please share your feedback, if any of the last questions are unclear?
Page Break

End of Block: Demographic
Start of Block: Project and Team
PT1 Throughout this survey, we will be asking questions regarding your current team. In all questions, we use "team", "my team" or "our team" to refer to your current team. Please, answer all the questions in the context of your current team. Do you understand this requirement?
O Yes, I understand this requirement
O No, I do not understand this requirement
Page Break ————————————————————————————————————

PT2 What ag	ile method do you	use in your tear	n?				
	Scrum						
	XP						
	Kanban						
	SAFe						
	Other (please sp	ecify below)					
*							
PT3 How ma	ny people are on y	our team?					
PT4 To what	extent to you agre	e with the follow	ring statement:				
	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree		
In my team, we have people with all the skills (e.g., frontend, backend, database, operations, business users) that are required for the project	t	0		0			

Page Break ———

PT5 What type of product/software do you develop in your team?
Custom development
O Implementation of software packages/COTS
Maintenance/enhancement of existing system(s)
Other (specify below)
PT6 How long has your team been working together?
C Less than 1 year
○ 1 – 2 years
○ 3 – 4 years
O More than 4 years
P5 Can you please share your feedback, if any of the last questions are unclear?
Page Break

PT7 Are you an in-house software team (i.e., you develop software for your own organisation) or an outsourced software team (i.e., you develop software for client that is another organisation)?
O In-house
Outsourced
Other (specify below)
PT8 How often are the members of your team colocated?
O Always
3-4 days per week
1-2 days per week
C Less than 1 day per week
PT9 Do you work in a project that involves multiple teams?
○ No
○ Yes
P6 Can you please share your feedback, if any of the last questions are unclear?

Page Break			

**End of Block: Project and Team** 

Start of Block: Measuring psychological safety

PS2 Throughout this survey we will use the term psychological safety. It means that in your work environment you believe and feel it is ok to admit mistakes and report them, you believe and feel it is ok and acceptable to report and discuss difficult problems, you are welcomed to propose initiatives and discuss them with your team and you feel at ease to ask for help when you need it. I have read and understand this definition.

O Yes				
○ No				
Page Break				

PS1 To what extent do you agree with these statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
If you make mistakes on my team, is it often held against you	0	0	0	0	0
Members of my team can bring up problems and tough issues	0	0	0	0	0
People on my team sometimes reject others for being different	0	0	0	0	$\circ$
It is safe to take a risk (e.g., experiment with a new technology, propose initiatives, raise an issue, disclose own knowledge gaps) on my team				0	
It is difficult to ask other members of my team for help	0	0	0	0	0
No one on my team would deliberately act in a way that undermine my efforts		0	0	0	0

Working with members of my team, my unique skills and talents are valued and utilized	0		0	0	0
P7 Can you ple	ease share your fe	edback, if any of	f the last questio	ns are unclear?	
Page Break -					

Page Break —

Start of Block: Antecedents of Psychological Safety - Leadership

### RQ1.1 To what extent do you agree with these statements:

Our leadership							
	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree		
is resolute about psychological safety in our team	0	0	0	0	0		
is determined to promote a work environment where people dare to take risks		0	0		0		
accepts that failure can occur when we try out new things	0	0	0	0	0		

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#### RQ1.2 To what extent do you agree with these statements:

Our leadership					
	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
listens to our needs	0	0	0	0	0
wants to hear about our concerns	0	0	$\circ$	0	$\circ$
is willing to listen to our suggestions	0	0	$\circ$	0	$\circ$
P8 Can you ple	ase share your	feedback, if any	of the last question	ns are unclear?	
Page Break  —					

RQ1.3 To what extent do you agree with these statements:

Our leadership	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
is supportive of us	0	0	0	0	0
provides help with everything we need to deliver our current project	0	0	0	0	0
treats us with respect	$\circ$	$\circ$	$\circ$	$\circ$	$\circ$
supports us doing our work	$\circ$	0	$\circ$	0	0
Page Break —					

RQ1.4 To what extent do you agree with these statements:

Our leadership ...

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
"walk the talk" when it comes to taking risk and accepting failure	0	0	0	0	0
"practice what they preach" when it comes to psychological safety	0	0	0	0	0
follows through on the values of psychological safety	0	$\circ$	0	0	0
are role models in terms of taking risks and accepting failures	0	0	0	0	0
words are well aligned with their actions when it comes to admitting mistakes	0	0	0	0	0
'					


**Start of Block: Antecedents of Psychological Safety - Team** 

RQ1.5 To what extent do you agree with these statements:

In our team ...

iii oui teaiii	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
we are responsible for deciding how to organize our work	0	0	0	0	0
we decide how to achieve our goals	0	$\circ$	0	$\circ$	0
we make the decisions regarding the technical solutions with no interferences from management or our stakeholders				0	
we make the decisions regarding the tasks' estimation	0	0	0	0	0
we make the decisions for changing our work processes in order to improve our performance		0	0	0	0
we have the freedom to make decisions on architectural design		0	0	0	0

decisions, choice of technology and tools		
Page Break		

#### RQ1.6 To what extent do you agree with these statements:

In our team					
	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
we engage in constructive discussions to make our decisions	0	0	0	0	0
each team member's voice counts when decisions are made	0	0	0	0	0
we make decisions based on the best arguments that team members contribute		0	0	0	0
we aim to reach consensus when we make our decisions		0		0	
P10 Can you pl	ease share your	feedback, if an	y of the last questi	ons are unclear?	)

Page Break			

**Start of Block: Antecedents of Psychological Safety - Team 2** 

#### RQ1.7 To what extent do you agree with this statement:

In our team, we have ...

,	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
uncommitted time that we can use for activities beyond developing new functionality	0	0	0	0	0
have enough time available to ensure we can meet deadlines even if something goes wrong	0		0	0	
have no problems obtaining sufficient time for activities that do not immediately produce customer value	0	0		0	
Page Break -					

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RQ1.8 Our use of engineering practices (e.g., test automation, continuous integration) ... Strongly Somewhat Neither agree Somewhat Strongly disagree disagree nor disagree agree agree ... reduces the likelihood that something goes wrong ... gives us the confidence that we can change code without breaking the software ... makes us confident that we notice mistakes before they turn into big problems P11 Can you please share your feedback, if any of the last questions are unclear? Page Break

**Start of Block: Antecedents of Psychological Safety - Leadership and Team** 

#### RQ1.9 To what extent do you agree with these statements:

In our team ...

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
we do not blame each other for mistakes but see them as an opportunity for improvement	0	0	0	0	0
we do not blame each other for underperforming, instead we coach each other to improve	0	0	0	0	0
Our leadership, including team leader and middle management, do not blame individuals for mistakes	0	0			

End of Block: Antecedents of Psychological Safety - Leadership and Team

**Start of Block: Antecedents of Psychological Safety - Individuals 1** 

RQ1.10 To what extent do you agree with these statements:

People in our team ...

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
are open to criticism and feedback from their peers	0	0	0	0	0
welcome new ideas and initiatives put forward by their peers	0	0	0	0	0
do not reject ideas based on the individual who proposed it but based on the strength and the soundness of the idea		0			
accept the rejection of new ideas when the rejection is based on strong arguments		0	0	0	0
accept the rejection of ideas when they fail to convince team members with their arguments		0		0	0

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e Break ———			

#### RQ1.11 To what extent do you agree with these statements:

In my team ...

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
people raise their concerns	0	0	0	0	0
people talk about problems	0	0	$\circ$	0	0
people share their opinions	0	$\circ$	$\circ$	0	0
people point out quality problems	0	0	0	0	0
P13 Can you p	lease share your	feedback, if an	y of the last quest	ions are unclear	?
Page Break —					

**Start of Block: Software Quality** 

SWQ.1 Throughout this survey we will be asking questions related to software quality. We use ISO/IEC 25010 definition of software quality, which sates: "[Software quality is] the degree to which the system satisfies the stated and implied needs of its various stakeholders, and thus provides value". This ISO model also covers some non-functional characteristics, mainly, "performance "," compatibility", "usability", "reliability", "security", "maintainability", and "portability." Do you agree with this definition?
Strongly disagree
○ Somewhat disagree
Neither agree nor disagree
○ Somewhat agree
○ Strongly agree
SWQ.2 Would you like to comment on your answer?

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	Diease snar	e your teed	dback, if	any of	the las	st quest	ions	are unclear?
4 Can you p								
4 Can you p								
4 Can you բ 								
4 Can you բ 								
4 Can you p								

Page Break		

SWQ.3 To what extent do you agree with this statement:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Our software satisfies the stated needs of its various stakeholders	0	0	0	0	0
Our software satisfies the nplied needs of its various stakeholders	0	0	0	0	0
Our software provides value to its stakeholders	0	0	0	0	0
Our software meets the non-functional equirements that are mportant for its	0		0		0
stakeholders					
* WQ.4 Are the	re any other sof	tware quality attı	ributes your softwa	are fulfils?	


Start of Block: Effect of Psychological Safety

RQ2.1 To what extent do you agree with this statement:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Members of my team admit mistakes related to software quality	0	0	0	0	0
Members of my team do not get blamed by their team members for mistakes related to software quality		0		0	
I admit my mistakes related to software quality to my team because there are no repercussions, instead we deal with the situation constructively		0		0	
When mistakes related to software quality are admitted by a team member, we deal with the situation constructively		0			

eedback, if an	y of the last que	stions are und	clear?
			<u></u>
			<del></del>
	eedback, if an	eedback, if any of the last que	eedback, if any of the last questions are und

RQ2.3 To what extent do you agree with this statement:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
As a team, when we admit mistakes, we learn from our mistakes	0	0	0	0	0
Past mistakes usually become a point of reference in our team	0	0	0	0	0
When past mistakes become a point of reference in our team, we avoid similar mistakes in the future	0	0		0	
mistakes in					

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RQ2.4 To what extent do you agree with this statement:

In my team ...

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
we understand that we need to help each other	0	0	0	0	0
we often help each other on software quality related issues	0	0	0	0	0
we often ask for help from our peers to improve the quality of code when needed		0	0	0	
we often ask for help from our peers to resolve defects when needed	0	0	0	0	0
we share knowledge related to software quality to help each other to improve the quality of our work when needed		0	0	0	

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RQ2.5 To what extent do you agree with this statement:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
As a team, we collectively solve problems when needed	0	0	0	0	0
When there are tough problems to solve in our team, we analyze them jointly	0	0	0	0	0
As a team, we help each other to solve software quality problems (e.g., resolving defects, making design decisions, coding decisions) when needed					
decisions)					

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RQ2.6 To what extent do you agree with this statement:

In my team ...

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
we often propose software quality initiatives	0	0	0	0	0
we often propose software quality-related experiments	0	$\circ$	0	$\circ$	0
we often try out new things to increase software quality	0	0	0	0	0
prior to experimenting with new ideas, we collectively assess the potential risks to help us decide	0	0	0	0	0
Members of my team often make suggestions for improving software quality		0	0	0	

\*

Can you plea	ase share your f	eedback, if an	y of the last qu	uestions are u	nclear?
Can you plea	nse share your f	eedback, if an	y of the last qu	uestions are u	nclear?
Can you plea	ase share your f	eedback, if an	y of the last qu	uestions are u	nclear? 
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Can you plea	ase share your f	eedback, if any	y of the last qu	uestions are u	nclear?
Can you plea	ase share your f	eedback, if any	y of the last qu	uestions are u	nclear?

**Start of Block: Moderating variables** RQ3.2 In your team, how often do you coach each other on software quality related issues? O Never Sometimes About half the time Most of the time Always RQ3.1 In your team, how often do you use pair programming to help each other? O Never Sometimes About half the time Most of the time Always P19 Can you please share your feedback, if any of the last questions are unclear?

**End of Block: Effect of Psychological Safety** 

P20 Thank you for taking the time to complete this survey. We truly value the information you have provided. Your responses will contribute to our research and further our understanding of how a psychologically safe workplace helps software development teams to achieve higher software quality.

Many thanks, Adam Alami, Mansooreh Zahedi and Oliver Krancher

**End of Block: Moderating variables**