

Preregistration part II: benefits, barriers and building up skills

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Prerequisites

! Important

Before completing this session, please carefully read about the prerequisites.

- Completion of preregistration training materials (preregistration part I [coming soon!])
- Access to Build up your preregistration toolkit! [coming soon]

Presenter Notes: These are the **presenter notes**. You will find a script for the presenter for every slide. In presentation mode, your audience will not be able to see these presenter notes, they are only visible to the presenter.

For this session, it is important that you are familiar with what a preregistration is, since this session is building up on that.

Instructor Notes: There are also **instructor notes**. For some slides, there will be pedagogical tips, suggestions for activities and troubleshooting tips for issues your audience might run into. You can find these notes underneath the presenter notes.

These are the prerequisites for this session. Before you get started on this session with your audience, you need to ensure that the audience fulfills these criteria.

Your study preregistration journey

From: *“I am not sure what some of the opportunities are or how to overcome some of the challenges of doing a preregistration* To: *“I feel able discuss the benefits and barriers of preregistration and identify which part of a preregistration I can improve on”*

Presenter Notes: In part 2 of this preregistration workshop I hope you will go from not being sure of the opportunities and challenges of doing a preregistration to being able to discuss benefits and barriers and identify an area of the preregistration process you can improve on.

Recap of key concepts in preregistration part I

Study preregistration is an open science practice that:

- **safe guards** researchers from **questionable research practices** and **biases** by making decision-making processes more explicit.
- involves uploading a time-stamped, publicly-available* **record** of a research study plan onto a register, which is given a unique and permanent study identifier.
- *Preregistrations do not need to be made public immediately and can be embargoed for a period of years (e.g. [Open Science Framework preregistrations](#) can be embargoed for 4 years from first submission)

Presenter Notes: Study preregistration is an open science practice that safe guard researchers from questionable research practices and biases by making decision-making processes more explicit.

- It involves uploading a time-stamped, publicly-available record of a research study plan onto a register, which is given a unique and permanent study identifier.
- Preregistrations do not need to be made public immediately and can be embargoed for a period of years. For example OSF preregistration can be embargoed for a period of up to 4 years.

Instructor Notes: A quick recap from preregistration part 1 helps learners situate themselves in the preregistration learning journey and before a short questions session (next slide).

Questions from preregistration part I

Presenter Notes: Before we get started with preregistration part II, now is a good time to clarify questions from part I.

Instructor Notes: This slide is dedicated to clarifying questions from the previous submodule and/or to discuss assignments. - Additional slides may need to be added depending on the nature of the homework assignments. - Critical for the learning process to ensure that learners are on the same page and have been able to achieve the learning goals of the previous workshop. - Not applicable if this set of slides corresponds to the first submodule of a new module.

Before we start: Survey time!

Question 1

What is your level of familiarity with the key components of a preregistration (e.g., elements found in a preregistration document)?

- ☐ 1. I don't know
- ☐ 2. I know a few key components
- ☐ 3. I have a good grasp of the key components
- ☐ 4. I am very familiar/have done a preregistration before

Question 2

How would you rate your confidence to carry out a preregistration for your study? (1 to 5 scale: **1** = Not confident at all, **2** = Slightly confident, **3** = Somewhat confident, **4** = Very confident, **5** = Completely confident)

- ☐ 1. Not confident at all
 - ☐ 2. Slightly confident
 - ☐ 3. Somewhat confident
 - ☐ 4. Very confident
 - ☐ 5. Completely confident
-

Discussion of survey results

What do we see in the results?

Presenter Notes: Let us have a look at these results.

Instructor Notes:**Aim:** Briefly examine the answers given to each question interactively with the group. Use visuals from the survey to highlight specific answers.

Accessibility Tip: Have people work in pairs if someone did not bring their phone/does not have a phone. This survey also cannot be completed in an asynchronous setting.

Learning goals

Aim: Examine the benefits of preregistration to researchers and wider research ecosystem, and discuss common challenges and how to address them.

There are **two** sections to this submodule:

- **Section 1:** Benefits and barriers of preregistration
- **Section 2:** Building up skills in preregistration

Presenter Notes: The overall aim of this submodule is to examine the benefits of preregistration to researchers and wider research ecosystem, and discuss common challenges and how to address them.

There are 2 sections: first we will discuss the benefits and barriers of doing a preregistration and then in the second section we will look at practicing improving our preregistration skills.

Instructor Notes: Giving the whole overview at the start of the session provides learners with structure and clarity about what to expect.

Section 1: Learning goals and overview

Section 1 is all about recognizing common benefits and barriers of preregistration for researchers and wider research ecosystem.

Activities: Quiz and self-reflection exercise

After completing section 1 you should be able to:

- **Explain** the perceived barriers to doing a preregistration
- **Identify** key benefits of preregistration

Presenter Notes: We will begin by outlining the common benefits and barriers of preregistration for researchers and wider research ecosystem.

There will be a quiz at the end and along the way several self-reflection exercises.

After completing section 1 you should be able to:

- **Explain** the perceived barriers to doing a preregistration
 - **Identify** key benefits of preregistration
-

Section 2: Learning goals and overview

Section 2 is about practicing improving a component of a study preregistration.

Activity: Build up your preregistration toolkit! (individual work)

After completing section 2 you should be able to:

- **Self-reflect** on challenging parts of the preregistration process
- **Practice** improving elements of a preregistration

Presenter Notes: In section 2 we turn our attention to building up our registration toolkit, by practicing improving a component of a study preregistration.

Section 1: Benefits and barriers of preregistration

Presenter Notes: In section 1, we will go over the key benefits and barriers of preregistration. We will first consider how benefits and opportunities of preregistration exist from individual researchers all the way to the wider research ecosystem.

Benefits for researchers I

Improved planning and project management

- The process of filling out preregistration document helps **identify key information** needed at study design stage
- Outlining data collection methods and analysis plans which **reduces ambiguity** and **errors** during data analysis stage

Builds your reputation

- Transparently show to the wider research community your plans and tests
- Signal that you have taken steps to **mitigate** against hindsight and confirmation **bias** (Wagenmakers & Dutilh, 2016).

Presenter Notes: A key area that preregistration benefits researchers is by improving the planning and project management as time is spent outlining data collection methods and analysis plans which reduces ambiguity and errors during data analysis stage. The process of filling out preregistration document helps identify key information needed at study design stage, which is particularly helpful for early career researchers.

Preregistrations also allow you to build your reputation by - Transparently showing to the wider research community your plans and tests and - signalling that you have taken steps to mitigate against hindsight and confirmation bias.

Benefits for researchers II

Easier to write up and publish findings

- Front loading the thinking and planning makes **writing up** results and discussion a smoother process
- If you preregister your analytic **code** on **simulated data** the results of your confirmatory analyses will be **generated quicker** once you have collected and cleaned data
- If preregistration is approved as a registered report during stage 1 journal peer review, you have “**in-principle acceptance**”

Visible productivity

- Publicly sharing outputs that others can **evaluate** beyond a journal article (as evaluation of outputs can be influenced by journal prestige)

Presenter Notes: Preregistration makes it easier to write up and publish findings by front loading the thinking and planning. This makes writing up results and discussion a smoother process!

If you preregister your analytic **code** on **simulated data** the results of your confirmatory analyses will be **generated quicker** once you have collected and cleaned data

And, if preregistration is approved as a registered report during stage 1 journal peer review, you have “in-principle acceptance”

Closely linked, is the benefit of more visibility of your work beyond journal articles (as evaluation of outputs can be influenced by journal prestige).

Benefits for teams

Clearer involvement of collaborators/project partners

- Provides opportunities for project partners to discuss and **refine plans** before data collection
- Detailed research plans provide **clarity** for project partners, which is increasingly important in the era of **large-scale collaborations**

Presenter Notes: Clearer involvement of collaborators/project partners is another important benefit of preregistration at the level of teams.

Preregistration provides opportunities for project partners to discuss and refine plans before data collection - a chance to catch any potential errors early!

Detailed research plans provide clarity for project partners, which is increasingly important in the era of large-scale collaborations (also known as Big Team Science).

Benefits to wider research ecosystem

Increase research credibility and bias

- **Mitigates** against questionable research practices
- Offers more complete reporting and **transparency** of research project
- **Reduces publication bias**, as preregistration/registered report is available to read (if not embargoed)

Check thinking

- Other people reading your findings can **follow your thought process**

- Gain a deeper understanding of a project and make an **informed assessment** (Binney et al., 2025)

Presenter Notes: Thinking at the scale of academic disciplines and wider academia, preregistration helps in two main ways:

firstly by increasing research credibility by - Mitigating against questionable research practices and - Offering more complete reporting and transparency of research project. - by mitigating against the publication bias or file drawer effect as the project plans are available and accessible on a repository or published as a registered report even if there are no statistically significant results. This is especially valuable when it comes to meta-analyses.

Secondly, it allows other people to check thinking by - Allowing other people to read your findings and follow your thought process enabling them to - gain a deeper understanding of a project.

Instructor Notes: Note about research credibility in slide at the end of section 1 about PARKing (“Preregistrating after the results are known”).

Benefits recap

- There are many benefits to doing a preregistration for individual researchers, teams and the wider research ecosystem.
- Overall, by taking the time to carefully plan your study design, data collection and approach to analysis, research becomes more rigorous, transparent and credible.

Reflection point

Do you relate to the benefits of preregistration mentioned? Are there any other benefits you can think of?

Find out more

More benefits about preregistration and registered reports from a student, author and journal editor perspective are outlined by Gya et al. (2023).

Presenter Notes: Before we move on the considering some of the barriers of preregistration, The take home message is that by taking the time to carefully plan your study design, data collection and approach to analysis research becomes more rigorous, transparent and credible.

You can explore this topic more, you can read additional benefits of preregistration from multiple perspectives in the field of ecology and evolution by Gya and colleagues.

Instructor Notes: Reflection point can be a time for learners to quietly consolidate the points (1-2 minutes) covered on benefits of preregistration and consider their own contexts. This reflection exercise can be expanded so learners can share their reflections in class.

Barriers to preregistration

Wider context:

- There are significant challenges present in the current **research** and **assessment culture** (e.g. “publish or perish”) which influences the uptake of preregistration.
- Researchers have **different knowledge** and **experience** levels with Open Science practices that reflect in **attitudes** and **adoption** of preregistration.

Presenter Notes: In the final part of section 1 we will outline some common challenges researchers new to the practice of preregistration can encounter.

Some context to keep in mind:

- There are significant challenges present in the current research and assessment culture (e.g. “publish or perish”) which influences the uptake of preregistration.
 - Researchers have different knowledge and experience levels with Open Science practices that reflect in attitudes and adoption of preregistration.
-

Challenges: time

Time: *“I haven’t got time to do a preregistration”*

- *Reframing:* front-loaded effort during the planning stage can help later on during write up and during peer review (remember the benefits to researchers slide earlier)

i Did you know?

[Peer Community in Registered Reports](#) is an initiative where the research community reviews and recommends registered reports. There is the option to speed up the Stage 1 peer review of a registered report with the ‘scheduled review’ [track](#). Authors initially submit a one-page “snapshot” instead of a full stage 1 report.

Presenter Notes: A common argument against the uptake of study preregistration is

“I haven’t got time to do a study registration” to which a counterargument would be: front-loaded effort during the planning stage can help later on during write up and during peer review.

To make you aware there is an initiative called “Peer Community in Registered Reports”, where the research community reviews and recommends registered reports. There is the option to speed up the Stage 1 peer review of a registered report with the ‘scheduled review’ track Authors initially submit a one-page “snapshot” instead of a full stage 1 report.

Instructor Notes: It is important for instructors to acknowledge the wider ‘publish or perish’ research culture. There is a some truth to the statement, as study planning should take time. It can be helpful to reframe preregistrations as an upfront time investment that will pay off later (link also to benefits of preregistration e.g. easier to write up findings).

Challenges: statistical confidence

Statistical confidence: *“How do I know my planned statistical analysis is the right one?”*

- *Strategy:* Simulate random data with the distribution and sample size of expected real data and run the statistical test planned for the study.
- Repeat the statistical test (e.g. 100 x) and check results are within the false-positive finding rate of 5%
- Run a power analysis by simulating data with the expected effect size for the study and check model registers effect at least 80% of the time

i Additional resource

[Training materials](#) for novices: Introduction to simulations and power analysis in R.

Presenter Notes: Another common barrier is lack of confidence in choosing the right statistical test. The strategy would be to run simulations and power analysis. Simulate random data with the distribution and sample size of expected real data and run the statistical test planned for the study. - Repeat the statistical test (e.g. 100 x) and check results are within the false-positive finding rate of 5% - Run a power analysis by simulating data with the expected effect size for the study and check model registers effect at least 80% of the time

There are introductory guides on this topic which you can look at in your own time.

Challenges: inflexible

Lack of flexibility: *“Preregistration keeps you in a box”*

- *Reframing:* Preregistrations are a “plan not a prison” as you can document any deviations from your plan when you write up the research findings (DeHaven, 2017).
- Preregistrations can be tailored to the study type (e.g. incremental
- transparently documenting exploratory-confirmatory pathway or sequential - multi-stage contingent experiments).

i Find out more

Binney et al. (2025) discuss practical guidance of balancing mitigating biases with flexibility in the research process. Lakens (2024) discusses when and how to deviate from a preregistration.

Presenter Notes: “Preregistration keeps you in a box” is another common perceived barrier. There is different degrees of flexibility in preregistrations as you can document any deviations from your plan when you write up the research findings. It is important to describe changes to the design, sampling or analysis plans clearly.

Preregistration can be tailored to the study type. They can be incremental (e.g. transparently documenting exploratory-confirmatory pathway) or sequential (e.g. multi-stage contingent experiments).

Challenges: scooping?

Fear of scooping: *“What if someone steals my ideas before they are published?”*

- *Counterargument:* Preregistrations do not need to be made public right away and can be embargoed for a period of years (e.g. [Open Science Framework preregistrations](#) can be embargoed for 4 years from first submission)
- The embargo period allows researchers time after preregistering their study to conduct the research, analyse, write up and publish their findings.

Presenter Notes: A commonly cited barrier to preregistration is tied to intellectual property with the fear of being scooped. The pressure to publish contributes to the fear of having research ideas “stolen” before they are published, as preregistrations are publically available.

To counteract this barrier, preregistered studies can be uploaded onto preregistration platforms and made private for a period of time. The Open Science Framework allows an embargo period of 4 years from first submission before the preregistration is made public.

The embargo period allows researchers time after preregistering their study to conduct the research, analyse, write up and publish their findings.

Challenges: incentives

Lack of incentives: *“I don’t see the point”*

- *Counterargument:* aside from individual researcher benefits (increased reflection, better planning, reduced likelihood of systematic errors), journals are increasingly prioritizing preregistrations.

Find out more

Next time you read a journal article in your field, take a look at the journal’s webpage and see if they accept preregistered studies and if there are guidelines for publishing registered reports. This information is usually in the author resources/guidelines section.

Presenter Notes: The counterargument to “I don’t see the point” that aside from individual researcher benefits (increased reflection, better planning, reduced likelihood of systematic errors), journals are increasingly prioritizing study registrations.

A nice little exercise to do next time you read a journal article is to see if they accept preregistered studies and if there are guidelines for publishing registered reports. This information is usually in the author resources/guidelines section.

Instructor Notes: This additional exercise is optional and can be set as a homework. It is designed for learners to see that prevalence and acceptance of preregistration is growing. Psychology journals are likely have higher prevalence see: Simonsohn (2023) <https://datacolada.org/115>.

Challenges: overwhelm

Overwhelm: *“There is so much that goes into a preregistration”*

- *Counterargument:* templates and FAQ pages can guide you and if you are unable to officially register a study, adopting principles of study preregistration is a good step (e.g. Open Science Buffet approach (Bergmann, 2023)).

i Find out more

The Open Science Framework (OSF) has a [frequently asked questions](#) page on preregistrations and registered reports.

Presenter Notes: When something is new it can be hard to wrap your head around the concept or practice and it can feel overwhelming. With preregistration, there are lots of templates that guide you through the process and support pages.

We will revisit how to address this challenge in section 2!

Challenges: lack of support

Lack of support: *“No one in my team knows or cares about preregistration”*

- *Strategy:* Often a reluctance to try out preregistration comes from a place of lack of familiarity with the process.
- Sharing resources, and suggest a group meeting to discuss/learn more about preregistration to increase familiarity.
- Reframe preregistration as a creative opportunity to plan great science! Planning is where the science is, as other research processes, like data collection can be delegated

i Additional resource

Relate to this challenge? See the preregistration [case study](#) which provides strategies.

Presenter Notes: A challenge which can be a bit more complex to resolve, is when there is a lack of support from supervisors or group members. This can come from a place of lack of familiarity. It is important to understand where this resistance is coming from. Opening up a discussion with the wider group can be beneficial place to start.

Instructor Notes: You can expand on student-supervisor reframing of preregistration: planning is where the science really happens, a lot of other tasks can be delegated (data collection, statistical analyses, writing up), but not the thinking /creative and smart planning. Students can make a plan and then have their supervisors check the robustness of their plans.

Additional resource with case study can be set as an in class exercise or homework (time allocation 15-60 minutes, depending on how in-depth you wish to go).

What preregistration is not

Preregistration does not prevent fraud or research misconduct (e.g. PARKing), but it does make it harder.

Definition

PARKing: “Preregistrating after the results are known” is considered research misconduct where researchers complete an experiment before preregistering which invalidates the purpose of preregistration (Parsons et al., 2022).

Presenter Notes: It is important to clarify what preregistrations don’t do.

They do not prevent fraud or research misconduct (e.g. PARKing).

PARKing or “Preregistrating after the results are known” is considered research misconduct where researchers complete an experiment before preregistering which invalidates the purpose of preregistration.

Instructor Notes: It is important to communicate with learners that preregistration is not the “silver bullet” that can resolve.

Challenges recap

- The lack of time and incentives, feelings of overwhelm and lack of support are common barriers that often overlap when in it comes to preregistration.
- There is lots of support available and you are not alone!

Find out more

Have a browse of some of the challenges and strategies to address barriers to preregistration here [Preregistration tutorial coming soon!]

Presenter Notes: Let us recap the challenges we have discussed. - The lack of time and incentives, feelings of overwhelm and lack of support are common barriers that often overlap when in it comes to preregistration.

- There is lots of support available and you are not alone!
-

Quiz

Presenter Notes: To round off section 1 we have a short quiz of 3 questions where the answers will appear after each question.

Q1. Which options below are benefits of registered reports

- ☐ In-principle acceptance (IPA) of manuscripts
- ☐ Prevents fraud
- ☐ Mitigates publication bias
- ☐ Opportunity for community feedback on project plans

Presenter Notes: Out of the following four options, which ones are benefits of doing a registered report?

- In-principle acceptance (IPA) of manuscripts
 - Prevents fraud
 - Mitigates publication bias
 - Opportunity for community feedback on project plans
-

A1. Which option(s) below are benefits of registered reports

- ☒ In-principle acceptance (IPA) of manuscripts
- ☐ Prevents fraud
- ☒ Mitigates publication bias
- ☒ Opportunity for community feedback on project plans

i Reflecting on answer

Although registered reports (and preregistrations) mitigate against questionable research practices, they do not prevent research misconduct or fraud (Yamada, 2018).

Presenter Notes: The answers are: - In-principle acceptance (IPA) of manuscripts - Mitigates publication bias - Opportunity for community feedback on project plans

Although registered reports (and preregistrations) mitigate against questionable research practices, they do not prevent research misconduct or fraud.

Q2. Which from the options below is an example of how preregistrations benefit the wider research ecosystem level?

- ☐ Mitigates publication bias
- ☐ Improves planning and project management
- ☐ Builds up reputation
- ☐ Visible productivity

Presenter Notes: Out of the following four options, which ones are benefits of doing a registered report?

- Mitigates publication bias
- Improves planning and project management
- Builds up reputation
- Visible productivity

A2. Which from the options below is an example of how preregistrations benefit the wider research ecosystem level?

- ☒ Mitigates publication bias
- ☐ Improves planning and project management
- ☐ Builds up reputation
- ☐ Visible productivity

i Reflecting on answer

Improves planning and project management, building up reputation and visible productivity are examples of benefits at the individual researcher level.

Presenter Notes: The answer is mitigating against publication, which is an example of a benefit of preregistration at the wider research ecosystem level, particularly when it comes to meta-research.

Q3. What can I do if I feel overwhelmed or lack time to do a preregistration?

- ☐ Give up on trying out a preregistration
- ☐ Find a preregistration template
- ☐ Reading Frequently Asked Question pages
- ☐ Trying an Open Science Buffet approach (Bergmann, 2023)

Presenter Notes: What can I do if I feel overwhelmed or lack time to do a preregistration?***

- ☐ Give up on trying out a preregistration
 - ☐ Find a preregistration template
 - ☐ Reading Frequently Asked Question pages
 - ☐ Trying an Open Science Buffet approach
-

A3. What can I do if I feel overwhelmed or lack time to do a preregistration?

- ☐ Give up on trying out a preregistration
- ☒ Find a preregistration template
- ☒ Reading Frequently Asked Question pages
- ☒ Trying an Open Science Buffet approach (Bergmann, 2023)

i Reflecting on answer

When trying out a new way of working, it is common for things to feel overwhelming. The Open Science Framework (OSF) has a [frequently asked questions](#) page on preregistrations and registered reports.

Presenter Notes: The answer is the bottom three answers: - Find a preregistration template
- Reading Frequently Asked Question pages - Trying an Open Science Buffet approach

Summary of section 1

- Taking the time to **carefully plan** your study design, data collection and approach to analysis, leads to more **rigorous, transparent** and **credible research**.
- Lack of time or incentives are two common barriers to adopting the practice of study preregistration
- It is important to openly discuss and address challenges
- Preregistration does not prevent fraud or research misconduct (e.g. PARKing).

i Reflection point

Which benefit and barrier resonated with you most?

Presenter Notes: To summarize section 1:

- Preregistration leads to more rigorous, transparent and credible research by taking the time to carefully plan the study design, data collection and approach to analysis.

- Lack of time or incentives are two common barriers to adopting the practice of study registration
 - Important to discuss and address challenges
 - Preregistration does not prevent fraud or research misconduct (e.g. PARKing).
-

Break! 15 minutes

Section 2: Build up your preregistration toolkit!

Presenter Notes: Now that you’ve taken a look at some of the challenges and opportunities of preregistration let’s practice improving elements of preregistration.

In the spirit of an “Open Science buffet” (Bergmann, 2023), let’s start to build up your study registration toolkit!

Starting small can help manage the feeling of overwhelm with trying out a practice for the first time!

Remember that one of the common challenges is feelings of overwhelm with doing a preregistration, and uncertainty about where to start.

Main preregistration elements

Recap of the main elements that make up a preregistration document:

- ☐ Research questions and hypotheses
- ☐ Sampling plan
- ☐ Design plan
- ☐ Outliers and exceptions
- ☐ Analysis plan

Tip

If you need a reminder of the essential and recommended elements that make up a preregistration document see preregistration part I ([LINK](#)).

Presenter Notes:

In the previous preregistration workshop, we outlined the parts that go into a preregistration document. As a reminder they are:

- Research questions and hypotheses
 - Sampling plan
 - Design plan
 - Outliers and exceptions
 - Analysis plan
-

Exercise instructions

The objective of the build up your preregistration toolkit exercise is to:

- **Identify** what makes preregistration elements vague
- **Practice** improving the precision and clarity of preregistration elements

Steps:

1. *Group practice* on one example preregistration snippet
2. *Work individually* on worksheet with 8 snippets (40 minutes)

Presenter Notes:

The two main objectives of the build up your preregistration toolkit exercise is to:

- Identify what makes preregistration elements vague
- Practice improving the precision and clarity of preregistration elements

We will first do a practice round as a group then we will work on our own

Instructor Notes: Remind learners that even if they have familiarity and practice in writing these preregistration elements, it can be helpful to revisit examples outside your own research area.

Doing the group exercise first provides scaffolding for learners to practice together and see a modeled answer before doing the exercise on their own. It also helps set up expectations and an opportunity to clarify understanding.

Group exercise

A research team wants to do a study on the topic of how indoor plants impact a person's mood. Take a look at this research question:

How do indoor plants benefit people?

1. On your own, *think* about how the question can be improved
2. *Discuss* answer with neighbor and *write* out a joint answer
3. We will *share* our answers in class

Guiding questions

What is ambiguous about this question? How would you measure “benefit”? How would you study the interaction between plants and people?

Presenter Notes: Let's have a go at improving this answer: A research team wants to do a study on the topic of how indoor plants impact a person's mood.

First think about it on your own, then discuss answer with neighbor. Then after a couple of minutes we will share some answers as a whole group.

Take a look at the guiding questions to help you.

Group exercise: answer

From: How do indoor plants benefit people?

To: How does having physical contact with indoor plants reduce psychological and physiological stress in young-adult office workers?

Note

Notice how the improved answer states the type of interaction between plants and people, more specific details about types of benefits of interest and the target demographic (e.g. young-adult office workers).

Presenter Notes: So we went from “how do indoor plants benefit people?” to a clearer research question of:

How does having physical contact with indoor plants reduce psychological and physiological stress in young-adult office workers?

Notice how the improved answer states the type of interaction between plants and people, more specific details about types of benefits of interest and the target demographic (e.g. young-adult office workers).

Now it is your turn!

1. **Access** worksheet [LINK]
2. **Read** instructions
3. **Work** through improving the snippets (40 minutes)

Presenter Notes: Now it is your turn!

Access the “build up your preregistration toolkit! worksheet here and follow the instructions. We will have a bout 40 minutes to do this before we wrap up.

Instructor Notes: Check learners have access to the worksheet. Pause to take questions.

Exercise reflections

Presenter Notes: We have some time now to discuss how the exercise went for you, which relates to the assignment.

Instructor Notes: Invite learners to share the experience of doing this exercise. This slide acts a bridge to the assignment (next slide)

Assignment

One step at a time, then tell a buddy!

1. *Self-reflect* and commit to taking one action related to the preregistration process
2. Once you have chosen an action, *tell a friend* for accountability!

Possible actions

Writing out clearer hypotheses, researching a study registration template for your subject area. See “additional resources” in build up your preregistration toolkit worksheet.

Presenter Notes: From the main exercise the worksheet you may have identified a particular part of the preregistration process you wish to improve.

In this extension exercise you are invited to self-reflect and commit to taking one action related to the preregistration process (e.g. writing out clearer hypotheses, researching a study registration template for your subject area).

Once you have chosen an action, tell a friend for accountability! To help you, take a look at the “additional resources” section.

Instructor Notes: This extension exercise is designed to be an empowering and manageable action to commit to, which links to the spirit of “Open Science buffet” and the journey outlined throughout this session. It also promotes self-reflection, critical thinking and a sense of agency in the choices that are made in how research is carried out.

To conclude: Survey time!

Presenter Notes: Before we wrap up with a final summary, let’s revisit the survey questions from the beginning.

Instructor Notes:

- **Aim:** This post-submodule survey serves to examine learners’ current knowledge about the submodule’s topic.
 - Use free survey software such as particify or formR to establish the following questions (shown on separate slides)
 - Use identical questions as in the pre-submodule survey to be able to directly compare
-

1. What is your level of familiarity with the key components of a preregistration (e.g., elements found in a preregistration document)?

- ☐ 1. I don’t know
 - ☐ 2. I know a few key components
 - ☐ 3. I have a good grasp of the key components
 - ☐ 4. I am very familiar/have done a preregistration before
-

2. How would you rate your confidence to carry out a preregistration for your study? (1 to 5 scale: **1** = Not confident at all, **2** = Slightly confident, **3** = Somewhat confident, **4** = Very confident, **5** = Completely confident)

- ☐ 1. Not confident at all
- ☐ 2. Slightly confident

- ☐ 3. Somewhat confident
 - ☐ 4. Very confident
 - ☐ 5. Completely confident
-

Final Summary

- Preregistration and registered reports offer many **benefits** to researchers, teams and the wider community (e.g. **building reputation** and more **rigorous, transparent** and **credible research**).
- A number of **challenges** exist to the wider uptake of preregistration (e.g. perceived inflexibility, time commitment, overwhelm).
- Adopting a **few elements** of study preregistration at a time is good approach to working your way up completing a preregistration or registered report.
- There are lots of places to get **support** (e.g. Open Science Framework community pages).

Presenter Notes: Preregistration and registered reports offer many benefits to researchers, teams and the wider community (e.g. building reputation and more rigorous, transparent and credible research).

- A number of challenges exist to the wider uptake of preregistration (e.g. perceived inflexibility, time commitment, overwhelm).
- Adopting a few elements of study preregistration at a time is good approach to working your way up completing a preregistration or registered report.
- There are lots of places to get support (e.g. Open Science Framework community pages).

Instructor Notes: Allow time for questions and remind learners of their assignment.

Additional resources

[Discussion](#) about merits vs limits of study preregistration from IEEE Visualization Conference 2022

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