

Women in Aviation Nudge Trial Summary report



About the WIA Nudge Trial

Project scope

This project was funded by the Australian Government's Women in Aviation Industry Initiative in 2024 and used behavioural science to address gender gaps in aviation. This project focused on Priority 1: Leadership and Culture, it engages industry leaders (1.3) and disseminates materials to foster cultural awareness and change (1.4), as put forward by the *Women in Aviation Industry Initiative: Strategic Action Plan*.

The project scope included designing, testing, and refining behaviourally-informed interventions in real-world contexts to provide initial insights with potential for future scaling. Goals included identifying barriers and enablers, creating psychographic profiles, defining target behaviours, designing and piloting interventions, and recommending scalable nudges for cultural change across the aviation sector.



Project Overview

Project activities

- Literature review
- Stakeholder mapping workshop
- 60+ interviews
- Capture behavioural insights
- Create psychographic profiles
- Identify and prioritise target behaviours
- Design and develop nudges
- Implement 10 nudges with 4 organisations across Australia
- Run 4x 4-week nudge trials
- Analyse trial results
- Disseminate results

Project deliverables



Using behavioural science

Methodology and approach

A behavioural science approach to gender inequality in aviation recognises that gender inequity is driven by complex individual, interpersonal, organisational, and societal factors. Unlike traditional linear change methods, which often miss the complexity of human behaviour, behavioural approaches use psychology to create strategies that resonate more deeply with people, encouraging them to embrace change.

This approach involves experimenting with specific elements of experiences or decision-making to gradually shift attitudes and behaviours. By addressing nuanced psychological drivers, behavioural interventions and nudges can foster meaningful, sustainable change across the aviation sector.

The behavioural design process starts by focusing on the problem and understanding the system where behaviours occur. This was done through literature and desktop review on gender bias, the aviation sector, and behavioural interventions. For this project, the purpose was to build on prior research to ensure the nudges in this trial were theoretically sound, built on existing research and insights, and were tailored to the specific context.

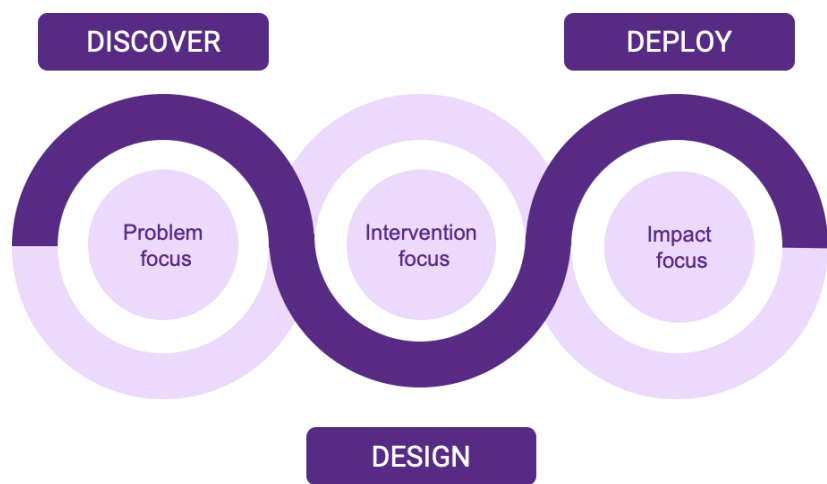


Figure 1: Behavioural design methodology

Behavioural research

Primary research approach

ThinkPlace^x conducted discovery interviews with aviation industry stakeholders and reviewed gender data from the Workplace Gender Equality Agency. This combined qualitative insights with industry-wide data for a balanced analysis.

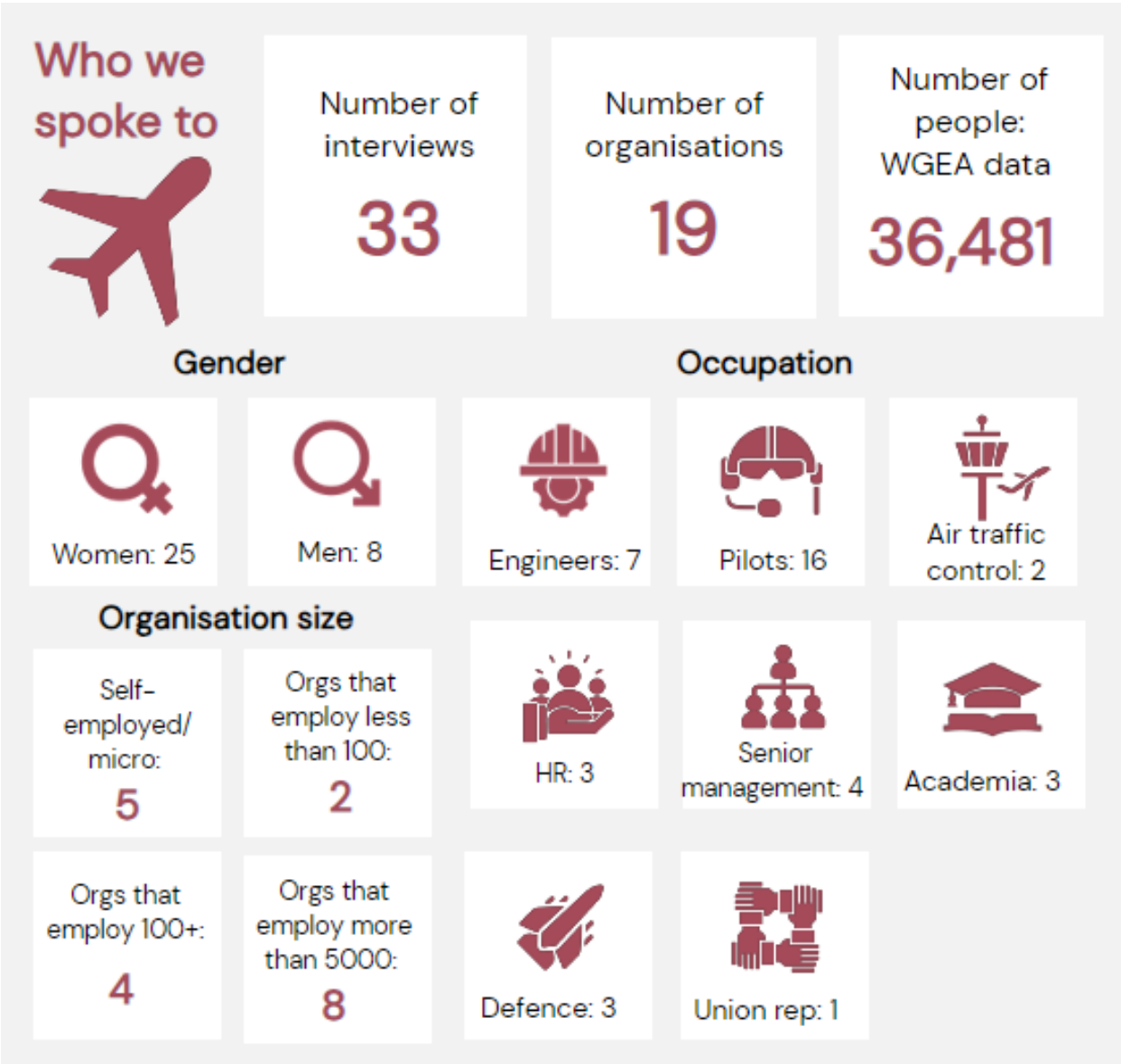


Figure 2: Graphic – Who we spoke to in initial discovery interviews

Research insights

Literature, desktop and primary research

The research showed significant gender-related challenges within the aviation sector. Women remain underrepresented, particularly in technical roles and management, with limited part-time options and high full-time requirements deterring retention. Medium-sized companies were identified as having the lowest female representation.

Qualitative findings highlighted persistent gender barriers: feelings of isolation, lack of social support, and exposure to gender-based challenges, such as harassment and harmful stereotypes. Leadership roles and behaviours were found to be pivotal, with effective allies and support mechanisms enabling women to persevere in the industry.

Behavioural insights derived from desktop research emphasised that despite ongoing gender equality initiatives, systemic barriers remain. Effective interventions, including training, social support, mentoring, and blind hiring practices, have proven beneficial in reducing biases and supporting women's advancement. Practical tools—such as awareness raising and clear language—are essential for enabling change. There are potential risks in applying interventions, which can include reactance, tokenism, and potential reinforcement of stereotypes. These insights stress the need for carefully designed and implemented interventions that mitigate unintended consequences while promoting sustainable cultural change.

From research to insights

The behavioural design process

ThinkPlace^x conducted comprehensive research to define target audiences through six psychographic profiles and prioritised five key behaviours out of 17 target behaviours, based on their impact on gender bias and ease of adoption. Each behaviour was analysed using the COM-B and Theoretical Domains Frameworks to understand context and motivation, followed by designing targeted nudges for these audiences.

The 5 behaviours targeted in the trial:

1. Being aware of the gender bias and potential issues in an aviation career
2. Speaking up and responding to negative gender comments in a socially acceptable way, when directed at self
3. Speaking up and responding to negative gender comments in a socially acceptable way, when directed at a colleague
4. How to respond when someone has shut down a negative comment I have made
5. Engaging in conversation with male and female colleagues about reducing gender bias

The target audience

Psychographic profiles



Sky Dreamer

An initial enthusiasm and aspiration to work in the aviation industry but needs strength and resilience to face and overcome this male-dominated field.



Crossroad Contemplator

Ready to soar into a leadership position, but she's also eager to become a mother and start a family. Being a pilot, the system is not set up to support her return to work and progression in leadership.



Wings of Empowerment

Defying expectations and soaring to new career heights, she has dedicated herself to empowering and advocating for other women in the industry. Through leadership and advocacy, she is paving the way for a new generation of female aviators.



Aspiring Advocate

An empathetic father and aspiring ally, dedicated to learning and improving his understanding of gender equality to support women's advancement in the aviation industry.



Patriarchal Pilot

A traditionalist senior captain who staunchly upholds conventional gender roles and hierarchies within the aviation industry, perceiving them as natural and functional without recognizing their limitations or the need for change.



Aviator Ally

A trailblazing aircraft mechanic who is dedicated to fostering a safe space within the aviation industry, confronting bias and creating a supportive environment for women despite facing some resistance from his peers.

About the Nudge Trial

Trial details

The WIA Nudge trial was conducted across Australia and participants were from a range of roles, years of working in the industry, and experience across the aviation industry.



Figure 3: Locations of trial participants

About the Nudge Trial

Trial participants

Due to confidentiality, the participating partner organisations are not named in this report, however, a broad description of their roles in the aviation industry is included to demonstrate the trial's generalisability. Additional interviews were conducted with trial partner employees to understand their experiences and working environments.



Pilots



Students



Engineers & mechanics



Engineers & mechanics



A small regional general aviation organisation.



An aviation training provider.



The engineering team of a large commercial airline.



The engineering team of a regional and remote airline provider.

About the nudges

“Let’s Fly Fair”

All nudges were designed to be part of a broader cohesive nudge campaign, with the slogan “Let’s Fly Fair” and associated logo. This logo and slogan was placed on all nudges so that they could be recognised to be part of the same initiative, even if an individual only interacted with a few interventions. The slogan alone also reinforces the message of fairness in aviation.

The nudges ranged from toolkits, toolbox briefs, posters, games and social objects. These are described on the following pages.



Figure 4: Sample of nudges part of the “Let’s Fly Fair” campaign

About the nudges

Description of the 10 nudges

1. Toolkit for women – This toolkit gives women practical tips and guidance on how to manage bias and respond to gender biased comments in a respectful yet productive way.

2. Speak Up Posters – This poster gives five practical ways to navigate discriminatory conversations and equips them with the information they need to do so.

3. Speak Up Brochure – The poster is accompanied by a brochure that goes into more detail about each of the approaches and offers more phrases staff may use.

4. Unconscious bias posters – A poster of a male pilot and engineer overlaid with the negative comments women hear in aviation. Juxtaposing the two exposes the engendered sexism and messaging that can be considered normal, and cause reflection and ideally discussion.

5. Toolbox brief – A short brief to aid managers and team leaders in discussing the topic of gender equality and inclusion as part of psychosocial safety.

6. Commitment poster – A poster that shows the organisation's commitment to gender equality.

7. Social objects – Embedding gender equality messages on objects used in a social context to promote discussion.

8. Aviation card game – A card game that is customised for aviation and adjusts the rules of well-known games like Rummy with a gender twist.

9. Aviation board game – A snakes and ladders game for gender equality in aviation, using a popular game to reduce cognitive load and encourage play.

10. Employee profiles – A poster showcasing individual technical experts, such as pilots or engineering, with their photos, names, and personal descriptions, highlighting their qualifications, experience, and unique personal traits. The purpose of these profiles is to humanise the pilots and foster trust and respect among customers.

Trial results

Results summary

Overall the results show a positive increase on key measures including awareness of gender bias and self-efficacy in standing up to gender bias and negative comments for both men and women.

All 5 target behaviours showed a positive shift, as measured through qualitative and quantitative measures used in this trial. The results align with Social Identity Theory, Social Contact Theory and Reactance. Results are analysed in more detail on the following pages.

Trial Partners found the process of implementing nudges easy, valuable, and complementary to their existing initiatives. Trial partners varied in their results, likely due to organisational factors such as culture, size, technical roles, and leadership.

The results are encouraging because overall they showed a positive effect in a short period of time, and no strong negative results were found. Given the nudges are relatively easy to implement, the nudges can be scaled to other aviation organisations.

This trial presents initial research and results, and future research can investigate causal factors, organisational and individual characteristics that influence the result, and measure over a longer period.

Trial results

Overview of quantitative results

This data shows the key changes between pre- and post-trial, as compared across all partners. The results are an average across the partners, and designed get an initial and indicative quantitative measure of the effect of the interventions.



+43%

Saw a positive behaviour change in themselves (gender bias awareness and actions)



+42%

Saw a positive behaviour change in others (gender bias awareness and actions)



+11%

Perception of opportunities to progress



-11%

Perception of fairness of recruitment process



+11%

Know how to stand up to inappropriate behaviour



+17%

Not making a gender-related comment that might make someone uncomfortable

Trial results

Key quantitative results by partner

	Regional general aviation	Regional and remote engineering team	Commercial engineering team	Training provider	Average
Saw a positive change in themselves	+71%	+36%	+21%	+33%	+43%
Saw a positive change in others	+71%	+36%	+18%	+67%	+42%
Safe and inclusive language and imagery	+8%	No change	No change	No change	+3%
Opportunities to progress	+12%	+8%	+14%	n/a	+11%
Fair recruitment process	+9%	-21%	-20%	n/a	-11%
Know how to stand up to inappropriate behaviour	+46% (from 54% to 100% of staff)	-14%	No change	No change	+11%
Made a gender related comment that might make someone uncomfortable	54% never to 100% never	No change	88% never to 93% never	87% never to 90% never	+17%

Note that the training organisation’s data is shown in the table, however their data has not been included in the average. This is due to the low response for the first two measures, as well as some other issues with getting responses from students and changes to the question wording requested by the training organisation.

Trial results

Results by target behaviour

Analysing the quantitative and qualitative results based on target behaviour shows that the WIA Nudge Trial was successful in positively shifting each of the 5 behaviours.



Behaviour: Being aware of the gender bias and potentially issues in an aviation career

4/5 agree they are aware of gender bias. Overall, participants somewhat or strongly agreed that they were aware of gender bias. Verbal reports from partners indicated an increase of awareness – “*[The trial] raised awareness of colleagues who didn’t realise the extent of the issue .*”



Behaviour: Speaking up and responding to negative gender comments in a socially acceptable way, when directed as self

+11% Knowing how to stand up to in appropriate behaviours increased on average.



Behaviour: Speaking up and responding to negative gender comments in a socially acceptable way, when directed at a colleague. +43% (+21–71% range). There was a strong consistent positive increase across all partners in respondents seeing a positive change in others



Behaviour: How to respond when someone has shut down a negative comment I have made. +43% (+21–71% range)

There was a strong consistent positive increase across all partners in respondents seeing a positive change in themselves +17% improvement in participants not making a gender biased comment.



Behaviour: Engaging in conversation with male and female colleagues about reducing gender bias. Qualitative feedback shows that conversations were indeed occurring. It can also be inferred that conversations about gender bias contributed to the other quantifiable positive results. “[It created] awareness and conversation.”

“Created discussion amongst allies and women on how to be supported.”

Trial results

Discussion

The WIA Nudge Trial has yielded positive and promising results, highlighting that tailored behavioural nudges can contribute positively to gender equity in aviation workplaces.

Alignment to psychological and behavioural theory

The WIA Nudge Trial's targeted nudges led to an average 43% positive shift in participants' inclusivity behaviours and a 42% improvement observed in others. These shifts align with psychological theory that suggest that behaviour change requires capability, opportunity, and motivation. The interventions increased gender bias awareness and provided practical tools, boosting participants' motivation and ability to address bias.

Factors affecting variation across partners

While overall positive, the results varied across organisations, suggesting that specific organisational characteristics, such as leadership involvement, role types, and culture, can influence intervention success. For instance, the regional general aviation organisation demonstrated the most significant positive change in both self and others (71% for both), which may be attributable to a good existing organisational culture, strong leadership support, and a smaller organisation that facilitated personal interaction. In contrast, partners with larger and more technical teams, such as the engineering teams, experienced more moderate gains.

This variation shows the importance of choosing nudges that best suit the organisational context, and points to possible future research to investigate this further, particularly around the organisational characteristics, and ideal number and mix of interventions.

Good impact for low-cost and easy to implement nudges

This trial affirms the value of small-scale behavioural testing, demonstrating that tailored, low-cost nudges can have measurable impacts without unintended harm, and it offers a strong foundation for future expansion and continued improvement.

Trial Partner experience

What partners had to say

Given the ultimate aim of the nudges is to scale them across the aviation industry, we wanted to understand the Trial Partners' experience in implementing them.

Partners aimed to address challenges like moving from bystander to upstander, building resources, and tackling gender bias by equipping women to handle negative comments and encouraging male colleagues to support them. Partners reported that the Nudge Trial created momentum for change, sparking supportive discussions, raising awareness, and offering men practical ways to address bias when witnessed, often using non-confrontational items like pens and stubby coolers.

Partners suggested that aviation organisations should appoint someone to 'sponsor' or 'own' the initiatives to prevent them from losing focus. Interventions should be reviewed annually or biannually, integrated into staff induction, and briefed to managers so they can handle related questions. There was also a recommendation for making the initiative a policy responsibility rather than relying on individuals, with leadership buy-in and regular campaigns being crucial. Organisations should understand competing challenges and avoid treating gender equality as a box-ticking exercise.

Quotes from trial partners

The trial provided valuable insights and resources that complement our gender inclusion initiatives."

'The interventions are great for changing behaviour in a non-confrontational way.'

"We know there are scalability benefits."

"There is a heavy need for this (nudge trial) to continue to support young women entering the industry."

Considerations

Limitations and future research

Limitations

The primary research involved around 60 participants and the trial involved approximately 250 people from four organisations meaning, while there was a good spread across the aviation sector, industry-wide generalisability may be limited. While the nudges were tested across multiple organisations, not all were applied universally, relying on design judgement and context-specific choices. This approach doesn't allow for isolating the impact of a single nudge as in controlled settings. Survey results were illustrative but not statistically robust, with a drop in follow-up responses suggesting potential engagement bias.

Future research

Future studies could expand the participant base for broader representation and statistical significance, with post-trial interviews to deepen insights. Research targeting specific organisational types would be valuable, comparing smaller regional groups, large enterprises, or particular roles like air traffic control. Similarly, testing single nudges across various contexts could clarify comparative effects, and large organisations could trial nudges in other areas to assess results across diverse settings.

Conclusions

Reflections about the Nudge Trial

Having evaluated the trial results from qualitative and quantitative data and analysed the results by target behaviour and the Trial Partner's organisational and team characteristics, it is clear that the Nudge Trial was successful in raising awareness and shifting behaviour.

Throughout the Nudge Trial process, we observed that the taking on of the nudges acted as an intervention in itself. Even before the pre-trial survey was sent out, conversations about gender bias were beginning to increase and raise awareness (two of the five target behaviours!).

The fact that the organisations were prepared to take on this initiative showed their commitment to gender diversity, which itself sends a strong message to the teams they were nudging.

Conclusion

The results are encouraging because overall they showed a positive effect in a short period of time, and no strong negative results were found. Given the nudges are relatively easy to implement, the nudges can be scaled to other aviation organisations.

The take-aways

What this means for aviation

This trial demonstrates that relatively simple and easy-to-implement nudges can make a significant difference. The positive results achieved in a short period, with low-cost interventions, highlight the potential for greater industry-wide change if these are scaled.

This trial offers a fresh lens through which to view the challenges of attracting and retaining women in aviation. It proves that behavioural interventions are an effective tool and should be applied more broadly. These nudges, if shared and applied consistently, can steadily shift industry culture to become more inclusive.

Moreover, these nudges complement existing initiatives, providing measurable data that organisations can use to identify areas for improvement and track progress.

By embracing a behavioural science and nudge approach, Australia's aviation industry can take significant strides towards a more inclusive and equitable future.

Take-aways

Simple and easy-to-implement nudges can make a significant difference.

This trial offers a fresh lens through which to view gender bias in aviation

The nudges complement existing initiatives

Your turn

How to implement

Here is an action guide for aviation organisations looking to apply gender nudges in their context. All nudges are available for public download.

1. **Reflect and embrace change** – Acknowledge any gender gaps as an opportunity for positive growth.
2. **Select context-appropriate nudges** – Choose interventions like toolbox briefs and social objects that suit your workplace culture and encourage organic discussions on inclusivity.
3. **Address resistance to change** – Manage initial pushback by transparently communicating that opportunities are based on competence and invite men as allies.
4. **Prepare for more gender issues to be raised** – Increased awareness may lead to more reports of bias, indicating positive cultural progress.
5. **Leverage executive commitment** – Leadership buy-in is essential to embed and sustain change at all organisational levels.
6. **Implement strategically over time** – Space interventions to avoid change fatigue, using a campaign-style approach for sustained engagement.
7. **Rotate interventions for impact** – Keep nudges fresh by rotating them periodically, fostering long-term change.
8. **Ensure organisational ownership** – Embed initiatives within the organisational structure to maintain continuity beyond individual champions.

By following these steps, aviation organisations can effectively implement gender nudges, creating a more inclusive environment and positively influencing retention, attraction, and overall workplace culture in the aviation industry.

Let's Fly
fair