Redesign travel norms: social norm interventions to reduce the behaviour of frequent flying among young professionals

Introduction

The aviation industry is one of the fastest-growing contributors to global greenhouse gas emissions. Although it accounts for a relatively small proportion of total anthropogenic emissions, its impact is disproportionately large due to the altitude at which emissions occur and the complex mix of gases released, including CO_2, NO_x, and contrail-induced cirrus clouds (Lee et al., 2009). As the demand for air travel continues to grow, frequent flying has become a normalized behavior, even among individuals who identify as environmentally conscious.

This contradiction reflects a broader behavioral paradox, many environmentally aware consumers continue to engage in frequent air travel despite expressing concern for climate change. Flying is often perceived as a symbol of modernity, success, and freedom, and these social and cultural narratives reinforce its desirability. Consequently, individual environmental beliefs may conflict with behavior, resulting in cognitive dissonance (McDonald et al., 2015). This tension, widely known as the "attitude-behavior gap," reveals the challenge of translating environmental awareness into consistent sustainable actions—particularly when the act of flying is deeply embedded in social norms (Barr et al., 2010).

Method

This thesis adopts a mixed-methods design to investigate how social norms influence frequent flying among professionals, and how design interventions may support behavioral change. The research consists of two complementary studies. Study 1 is a qualitative research based on in-depth interviews and thematic analysis. Its purpose is to capture how individuals experience, rationalize, and negotiate their frequent flying behavior within the context of social norms, emotional dynamics, and identity considerations. Study 2 is a quantitative experiment conducted through a survey with a between-subjects design. It aims to empirically test the causal effects of different social norm framings on emotional responses, purchase intentions, and perceptions of environmental impact across travel modes.

Result

Study 1 – Qualitative Interviews

- Frequent flying among environmentally aware individuals was strongly shaped by social norms such as role models, peer influence, and group expectations.
- Participants experienced conflicting emotions (guilt, regret, frustration) when their values and behaviors diverged.
- To cope with this dissonance, they used strategies like rationalization, moral justification, and offsetting (e.g., compensating with sustainable choices later).
- Importantly, even sustainable actions often lacked emotional reward, weakening long-term motivation.

Study 2 – Quantitative Experiment

- Participants exposure to unsustainable static norm + unsustainable dynamic norm messages increased participants' intention to choose train travel over flying.
- Social norm framings did not change perceptions of environmental impact, which followed a stable hierarchy: plane > bus > train.
- Participants exposed to unsustainable norms reported stronger negative emotions (guilt, anxiety, frustration etc.) and higher moral cleansing, which reinforced sustainable intentions.
- Actual transport selection, however, was mainly driven by pre-existing preferences and environmental concern, not by short-term norm messages.

Disscussion & Conclusion

Limitation

Key limitation of this study is its focus on individual behavior without accounting for systemic interventions such as flight taxes, airport restrictions which play a critical role in shaping travel at scale (Zijlstra et al., 2023).

Study 1 used a small sample of young European professionals, limiting generalizability, while Study 2 employed a hypothetical scenario rather than real choices. Future research should therefore examine how systemic policies interact with psychological drivers, extend analysis to cross-cultural contexts, and use field or longitudinal designs to assess whether normative interventions lead to lasting behavioral change."

Conclusion

The potential of strategic design interventions that do not rely solely on either negative or positive emotions but instead seek to combine them in a complementary way. On the one hand, negative emotions such as guilt, frustration, or anxiety can be powerful in creating a sense of moral urgency and responsibility pushing individuals to reflect on the environmental consequences of their choices and consider alternatives to flying. On the other hand, positive emotions such as pride, relief, and moral satisfaction are essential for reinforcing sustainable decisions once they are made, providing a motivational reward that encourages repetition and long-term adoption.

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