

TYOLOGY OF PEOPLE IN RELATION TO FLYING AND FUTURE DEVELOPMENT OF ENVIRONMENTAL CRISIS

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Abstract. The present paper introduces a typology of individuals in relation to flying, categorizing them as Aviation Enthusiasts, Comfort Travelers, Anxious Travelers, Functional Travelers, Adventurous Travelers, or Environmentalists. We explore these categories in the context of potential changes in air travel prompted by the unfolding environmental crisis.

Keywords: typology, future of flying, environment

1. INTRODUCTION

Understanding the typology of people in relation to flying is valuable for various stakeholders in the aviation industry, such as airlines, airport operators, and travel agencies. Based on various studies and industry insights, we can broadly classify people into the following types:

- **Aviation Enthusiasts:** These individuals are passionate about everything related to aviation. They might even be professionals in the field. Their interest can stem from the love of the technology, the history, or the sheer thrill of flying itself [1].
- **Comfort Travelers:** This group values the comfort and efficiency of flying, enjoying the experience for its conveniences and luxuries. Their priorities may include access to lounges, premium seats, and high-quality service [2].
- **Anxious Travelers:** These people have fears or anxieties related to flying, whether it's due to fear of heights, concerns over safety, or motion sickness [3].
- **Functional Travelers:** These people see flying as a necessary means to an end. They may fly often due to work or other obligations and view the experience more pragmatically than others [4].
- **Adventurous Travelers:** This group seeks to discover new places and cultures, seeing flying as a means of adventure. Their priority is the destination and the experiences it offers, rather than the flight itself [5].
- **Environmentalists:** These individuals are deeply concerned about the environmental impacts of aviation and may limit or avoid air travel due to these concerns. They could be particularly interested in airlines' sustainability initiatives [6]. These categories are not rigid and individuals may not fit neatly into one. Personal preferences, attitudes, and experiences can shift over time, and thus, an individual's typology related to flying can also change.

2. TYOLOGY OF FLYERS IN REGARD TO THE UNFOLDING ENVIRONMENTAL CRISIS

The future of flying is at the same time ripe with new prospects but also potentially doomed with the impacts of the unfolding environmental crisis. There are several trends to watch out for:

- Electric Flying: The development of battery technologies could lead to the creation of fully electric aircraft, which could be not only greener, but also quieter and more efficient in operation than current aircraft powered by fossil fuels [7].
- Autonomous Flying: Just as autonomous vehicles are appearing on our roads, we could see autonomous aircraft in the air. These aircraft could be designed to fly without a human crew, which could increase the safety and efficiency of flights [8].
- Personal Air Vehicles: Concepts such as flying cars and drones capable of carrying people are already being developed. These technologies could enable personal air travel, changing the dynamics of urban and suburban transport systems [9].
- Hypersonic Travel: Hypersonic aircraft, flying at speeds more than five times the speed of sound, could significantly shorten the time required to fly between two points on earth [10].
- Sustainability: Aircraft are a significant source of greenhouse gases and there are pressures for the aviation industry to become more sustainable. This could include everything from transitioning to alternative fuels to designing more efficient aircraft [11].
- Space Travel: Commercial space travel is closer to reality, with companies such as SpaceX, Blue Origin, and Virgin Galactic offering or planning to offer space flights [12].

We can see the thread of environmental challenges woven into the fabric of these trends. Now, let us discuss how would the developments in the climate change affect individual types of flyers mentioned earlier.

2.1. Aviation Enthusiasts

The future of aviation is shaped not only by technological advances but also by the individuals who hold a deep passion for flight - aviation enthusiasts. Their knowledge and zeal for aviation contribute to the innovations that aim to address the significant environmental impact of air travel. Flights worldwide are responsible for around 2-3% of global greenhouse gas emissions, a figure projected to increase without substantial changes in the industry, according to the International Council on Clean Transportation [13]. However, various initiatives are underway to revolutionize aviation and reduce its environmental footprint.

The advent of electric aircraft holds promising potential, offering quieter and cleaner flights without the carbon emissions associated with conventional jet fuel. In the near term, the utilization of Sustainable Aviation Fuels (SAFs) is seen as a viable option to reduce aviation's carbon footprint. SAFs, made from sustainable resources, have the potential to lower carbon emissions significantly compared to conventional jet fuel [14].

Lastly, innovations in air traffic management could contribute to a more environmentally friendly aviation sector. More efficient routing and aircraft taxiing procedures can reduce fuel consumption and carbon emissions [15].

For aviation enthusiasts, these exciting technological advancements not only promise a new era in aviation but also demonstrate how the sector can adapt to meet the challenges posed by climate change. The question, however, remains, if these changes are enough to stop depleting of our carbon budget.

2.2. Comfort Travelers

In the face of mounting environmental concerns, the future of air travel offers mixed prospects for comfort travelers who cherish the convenience and luxury that come with flying. Nevertheless,

airlines and aviation enterprises are proactively investing in methods to mitigate the environmental toll of flying on the environment.

In the near future, comfort travelers can anticipate a more prevalent use of Sustainable Aviation Fuels mentioned above. These fuels are designed to significantly reduce carbon emissions, making air travel a more environmentally conscious choice without sacrificing the comforts of flying.

Further augmenting the future of comfortable yet sustainable air travel are advancements in aircraft design. Additionally, the concern of noise pollution, another environmental issue linked with aviation, could be substantially mitigated with the advent of quieter electric aircraft.

In essence, these promising developments suggest that the future of flying will not merely maintain a focus on passenger comfort. It also represents a firm commitment to reducing the environmental impact of aviation, offering comfort travelers the luxury and convenience they desire without compromising the health of our planet. However, increased costs can be expected for travelers to compensate for the updates in the technology [16].

2.3. Anxious Travelers

For anxious travelers, environmental concerns related to aviation can exacerbate their worry. However, ongoing technological advancements and industry-wide efforts suggest a future where these worries can be significantly alleviated.

Electric aviation, a notable innovation, promises to not only reduce carbon emissions but also minimize noise pollution, which is a common distress factor for anxious travelers [17]. Furthermore, industry initiatives to counterbalance carbon emissions are gaining traction. The question remains whether those plans are viable or may be a part of greenwashing from the aviation industry.

Anxiety over the environmental impacts of travel can also be eased through better education about these shifts and the increasing availability of environmentally friendly travel options. This trend toward the "conscious travel" allows travelers to make more informed, greener travel choices. Consequently, this could provide peace of mind to those anxious about the ecological footprint of their travel.

2.4. Functional Travelers

Functional travelers, who view air travel as an essential component of their professional or personal commitments, are becoming more aware of the environmental implications of their journeys.

Fortunately, the future of aviation holds promising solutions that could allow functional travelers to continue their necessary travels while mitigating their environmental footprint. Key among these solutions are technological innovations, such as hybrid-electric propulsion systems [18].

Furthermore, major aircraft manufacturers, are making significant strides in enhancing fuel efficiency, thereby decreasing CO₂ emissions per passenger [19].

Alongside technological improvements, various initiatives aim to cap CO₂ emissions from aviation. For instance, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSA), an initiative by the International Civil Aviation Organization (ICAO), seeks to stabilize CO₂ emissions at 2020 levels by offsetting growth [20].

For functional travelers, these developments provide an opportunity to adhere to their travel schedules while actively contributing to a more sustainable future for the aviation industry. However, it is still unclear whether such incremental improvements will suffice to avoid dramatic changes in global climate.

2.5. Adventurous Travelers

Adventurous travelers, known for their desire to explore the most remote corners of the world, are growing increasingly mindful of their environmental footprint. As the European Union Aviation Safety Agency (EASA) and other sources [21] report, aviation contributes to roughly 2% of all global carbon dioxide emissions. As such, this demographic is actively seeking sustainable alternatives to continue their explorations without exacerbating climate change.

The future of aviation holds promising developments for such travelers. The advent of electric planes offers not just a significant reduction in carbon emissions, but also the potential to establish routes that were previously unfeasible due to high jet fuel costs [22].

Moreover, technologies involving lighter and more aerodynamic materials are being developed by companies like Toray Industries. These innovations promise to make aircraft more fuel-efficient, which in turn reduces their environmental impact [23].

On the flip side, in the burgeoning industry of space tourism, companies like SpaceX and Blue Origin are creating additional environmental burdens.

Additionally, digital technologies and innovations, including virtual and augmented reality, are offering immersive travel experiences without the need for physical travel. There is a potential of these technologies to revolutionize travel while significantly reducing its environmental impact [24].

In essence, the future of aviation could enable adventurous travelers to continue their explorations in a manner that aligns with their growing environmental responsibility.

2.6. Environmentalists

Environmentalists raise several critical points regarding the future of air travel, highlighting the urgent necessity to decrease greenhouse gas emissions as a foremost priority.

They advocate for the promotion of multi-modal transport systems [25], such as integrating high-speed rail for shorter journeys to reduce the frequency of flights.

Additionally, social campaigns like "flight shame" are gaining traction, aiming to instill a sense of individual responsibility and thereby influence consumer behavior toward more sustainable travel choices [26]. Collectively, these measures aim to curb the environmental impact of aviation and promote more eco-friendly alternatives.

3. CONCLUSIONS

Understanding the typology of travelers in relation to aviation serves as an invaluable resource for various stakeholders in the industry, allowing for more targeted strategies to address the diverse needs and concerns of passengers. As we navigate through an era marked by rapid technological advancements and the looming threat of climate change, it becomes increasingly evident that the future of air travel is a tapestry of both exciting possibilities and formidable challenges.

From aviation enthusiasts to environmentalists, each traveler type intersects differently with these trends. While technological advancements like electric and autonomous flying offer hope for a greener future, they are not a panacea; a multipronged approach is necessary to substantially reduce the environmental impact of aviation. This includes not just advances in technology, but also behavioral changes, policy initiatives, and public awareness campaigns like "flight shame."

It's clear that as the environmental crisis intensifies, so will the scrutiny on the aviation industry's sustainability efforts. Whether it's electric planes, sustainable aviation fuels, or even alternative modes of transport, the industry is at a pivotal moment that demands actionable solutions. These solutions not only need to be technologically innovative but also socially and environmentally responsible. Thus, the aviation industry finds itself at a crossroads, where the decisions made today will reverberate through the lives of all types of travelers and, indeed, the health of the planet for years to come.

For airlines, airport operators, and travel agencies, understanding this complex interplay between different traveler types and environmental imperatives is not just good business—it's a prerequisite for being a responsible player in shaping the future of global travel.

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