

Designing strategies

to optimize young solo traveler's
intra-city journey toward sustainability



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Preface

Dear readers,

Reflecting on the past two years, I realize my journey has been intense and filled with significant personal and professional developments. I am a student doing a master's thesis in SPD; in addition to that, I am also an enthusiastic solo traveler during my leisure time. Traveling alone empowers me as I complete plans and handle unexpected challenges, for instance, adjusting the planning immediately or changing plans. Not only do I learn new knowledge about diverse countries and their cultures, but this process also teaches me how to arrange customized itineraries, understand myself better, and develop an agile mindset when encountering surprises. Traveling alone also gives me some accomplishments sometimes. The unexpected events during the journeys are not always negative; some accidents have created unforgettable experiences and memories.

While traveling alone, I observed many people taking pictures and appreciating the city's great scenery. However, I noticed that not many consider how we, as human beings, can contribute to the local environment. This led me to reflect on the typical travel mode, where I decided to focus on solo travelers as the starting point for my thesis and project.

Hence, I decided to combine my interest with my goal of this project- to create a meaningful thesis that explores the experiences of solo travelers and their potential contributions to local environments.

Acknowledgment

I feel thankful and lucky to have met you all in my current life stage. I have been indecisive about how to shape and communicate my project. However, I am thankful for the people who guided me throughout the process and illuminated my journey to complete my master's thesis.

Marina, thank you for encouraging me to shape the topic from the beginning to the end. You are always a good listener to my viewpoints, knowing how to highlight the most important parts. You have guided me in structuring academic writing more rationally and coherently. Three things were particularly remarkable for me during your guidance: I learned the importance of decision-making by asking myself three questions: Why am I doing this? How will the steps connect? What benefits will this decision bring to the overall process? This approach has truly taught me not only about the project itself but also valuable soft skills. I have started to rethink how to connect the details of each step and how I reason my selected methods, aiming not just for the easiest execution but for elevating the quality of outcomes.

Tobias, I appreciate that you always challenge my fixed mindset and bring new perspectives to the project. You constantly remind me to narrow down the key insights for an efficient presentation and communication. Your suggestions have encouraged me to be more flexible and agile, learn insights from related books on design methods, understand how others have approached similar projects, rethink the purpose of selecting methods, and practice them by managing the processes effectively and precisely.

Apart from my supervisory team, I would like to express my appreciation to Bart, who introduced my current mentor and initially guided me in shaping the topic, and to my friends (as my thesis partners), Anshuman and Yash, whom I have met here. Thank you to everyone who has inspired, suggested, and guided me, including my parents, friends, previous professors from my Bachelor's program, and supervisors at work. Your support has encouraged me to slow down, return to my studies, and develop greater flexibility.

Throughout the process, I realized that design is a people-oriented job; chatting, brainstorming, listening, and discussing are essential for fostering empathy and deepening our understanding of users. This process taught me to keep reflecting, introspecting, and learning how to interpret the insights instead of working hard behind.

Moreover, the pursuit of knowledge is endless; whether it is proactive or reactive, I have learned a lot from these experiences and practices, even if this isn't perfect. This thesis is not the best deliverables, but I will never forget to be humble about learning and improving myself at every stage and continually strive for growth.

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1

Project Initiation

This chapter introduces the project's initiation and overviews the opportunity, research goal, relevance, and research approach.

1.1 Introduction

The solo travel trend has been of growing interest among travelers. It began over ten years ago and has consistently gained traction (Elliott, 2023). In 2017, solo travelers constituted 27% of the customer base in Overseas Adventure Travel (O.A.T.). By 2019, this figure increased to 39%; in 2021, it rose to 47%. The percentage has reached 50% in 2023 (Elliott, 2023). Moreover, in a world undergoing rapid urbanization (United Nations, 2013), cities and transportation authorities worldwide have universally dedicated themselves to making sustainable transportation a key policy objective (Jeon, 2005). This reveals that governmental organizations have valued the importance of launching sustainability-related transportation policies for a long time. For instance, walking is the most environmentally friendly way to cover short distances daily to promote sustainability when traveling in the city. It is essential to the entire transportation system (Buehler & Pucher, 2023).

However, despite their environmental awareness, solo travelers often hesitate to choose sustainable options because traveling alone is inherently more expensive, making them reluctant to pay extra for eco-friendly choices (CBI Ministry of Foreign Affairs, 2024).

This leads to a crucial question: What strategies can encourage them to adopt more sustainable methods of urban traveling?

In this study, I intend to investigate how to make behavior change toward sustainability-oriented and contribute to sustainability by taking physical actions within the city.

1.2 Research Plan

Design opportunity

"Generation Z" refers to individuals born between 1995 and 2010 (Francis & Hoefel, 2018); they often labeled authentic digital natives (McKinsey & Company, 2023). Gen Z is considered a significant market segment in the tourism industry, making an average of 3 trips for leisure every year (TravelPerk, 2022). This leads to an opportunity to transform the tourism industry sustainably for Gen Z travelers. People who travel alone have more independence in choosing their transportation mode, which can encourage them to start contributing small actions toward sustainability. Moreover, intra-city travel involves shorter distances, and the transportation modes can be replaced easily in more sustainable ways, for instance, by foot or bike. Sustainable transportation modes, like walking or biking, help boost fitness and mental and physical well-being. For these combined reasons, this project selects Gen Z as the focal group and then dives into the inner values they keep and what attracts them to further contributions to the sustainability of the tourism industry.

Structure

The project follows the Basic Design Cycle (Roozenburg & Eekels, 1995), which involves four steps: Analysis, Synthesis, Simulation and Evaluation, and Decision. These steps are iteratively repeated through empirical investigation (Annemiek Van Boeijen et al., 2014). Inspired by these principles of the Basic Design Cycle (Roozenburg & Eekels, 1995), the project extends into eight phases to enhance its scope, the iteration of which is illustrated in Figure 1.

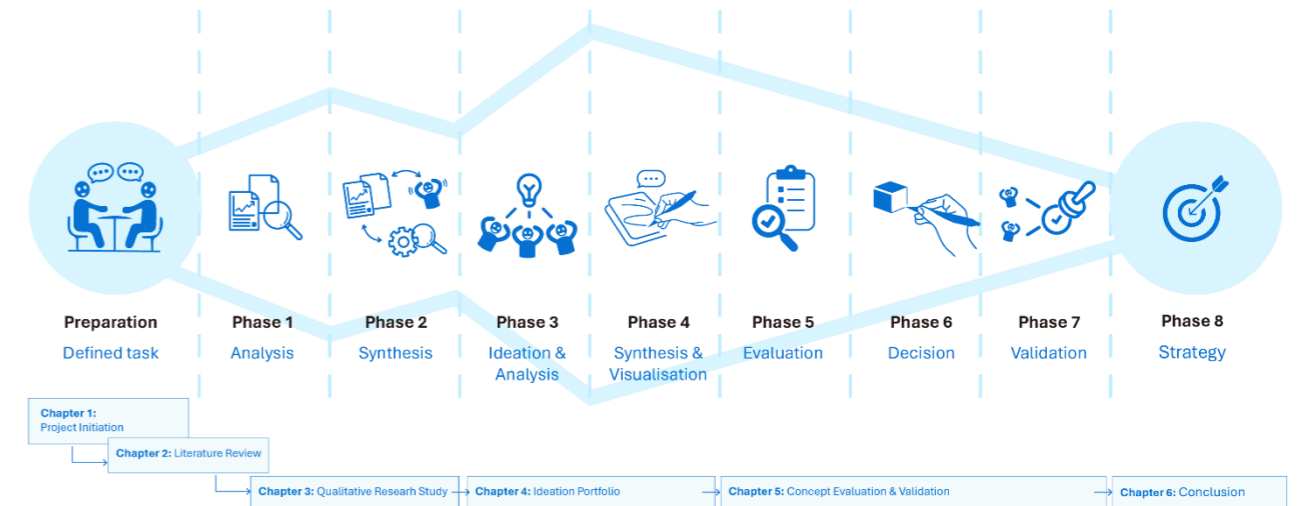


Figure 1- The iteration of this project execution by following the Basic Design Cycle (Roozenburg & Eekels, 1995)

Moreover, qualitative methods were employed throughout the entire process. The primary objective of using these methods is to gain a deeper understanding of users' inner values and to become more familiar with their perspectives.

The defined task was derived from my interest in traveling and insights from informal interviews with Gen Z individuals with solo traveling experience. These interviews and key insights were detailed in section 1.3, which is perceived as the beginning of the preparation phase. The project comprises six chapters; the preparation phase starts from Chapter 1 - Initiation and helps identify the research focus for further steps in the Analysis Stage.

Details of each phase and represented chapters are elaborated below.

Preparation

This part includes diving into literature with different categories, such as the user and corresponding traits, sustainability, and transportation scenarios, which is beneficial for gaining deeper insight into the context in the literature and managing the setup questions of conducting the in-depth interview.

- Chapter 1 introduces the overview of the project initiation, indicating the project goal and relevant approach applied in the research process.

The literature review spans the preparation phase through the 1st phase- Analysis.

1st Phase & 2nd Phase: Analysis & Synthesis

The in-depth interview guide was designed based on the key takeaways from the Analysis phase, and the core of that is to understand the inner values of users' thoughts and the reasons why they make decisions while traveling in the city. The overall insights were integrated and applied to generate a narrowed focus on the design direction and design criteria. The Analysis and Synthesis section contains Chapter 2: Literature Study and Chapter 3: Qualitative Research Study.

- Chapter 2 reviews the literature in depth as an exploration of further steps. This part helps the readers to have a holistic understanding of stakeholders and the environment, which reveals the relationship among people,

transportation, community, city, and government.

- Chapter 3 describes conducting the qualitative research study, including data collection, analysis, and synthesis, containing diverging and converging steps. This chapter provides comprehensive details on interview settings, the strategies employed in conducting the interviews, and the integration of insights derived from the gathered data. Subsequently, these insights were analyzed, synthesized, classified, and briefly concluded under the Persona and Design Criteria categories. The research question and sub-questions were further refined in this chapter, serving as a foundation for the ideation process, which marks the beginning of the divergence of ideas.

3rd Phase & 4th Phase: Ideation & Analysis, Synthesis & Visualisation

Following the integrated insights as the design direction, the design criteria were set meanwhile. In this phase, ideas were listed and detailed. Therefore, two main steps are essential in this phase: idea generation and visualization.

- Chapter 4 started with discussing generating and diverging ideas collaboratively with designers. Each generated idea was subsequently elaborated upon, integrating content, context, and storyboarding.

5th Phase & 6th Phase & 7th Phase: Evaluation, Decision, Validation

The final decision was based on the Design Criteria established at the end of the second phase. During the Decision phase, validation was incorporated to refine the current design. The decision-making process is detailed in Chapter 5: Evaluation & Validation.

- Chapter 5 evaluates the ideas by following the Design Criteria set in Chapter 3. This process filters the ideas and selects one representative idea that aligns with the project initiation.

8th Phase: Strategy

Conclusion synthesizes strategies from the research and design process, providing recommendations for designing for EU Gen Z and offering future directions for sustainable journeys.

- Chapter 6 concludes the findings at the end of this report, introducing the reflective strategies for the process's conclusion and discussing the implications and limitations.

¹Overseas Adventure Travel (O.A.T.): A member of the travel companies owned by Grand Circle Corporation based in Boston, provides group tourism services to destinations including Africa, the Arctic, Asia, Central and South America, Europe, Australia, and New Zealand.

1.3 Informal Interview

Aim

The main idea of conducting informal interviews is to gather ideas to efficiently scope the research direction and understand what aspects can be improved during solo travelers' journeys. Therefore, 9 participants attended the interviews and randomly selected members of Gen Z from different continents. The research of informal interviews focuses on three aspects:

- *The purpose of solo traveling*
- *How Gen Z perceives sustainability in general*
- *Their traveling behaviors*
- *exploring the possibilities for expectations toward final deliverables*

To understand the gathered data into insights, the differences between participants are categorized into Table 1 with three classifications to let the readers understand the number of each participant. All participants are students in the first session, with experience traveling alone in different countries, particularly Europe. There are also guidelines to guide readers in understanding the definition of each category in the table,

1. Participant No.: The informal interview was the first session of this project. Each participant was assigned a number code starting from 1, where the last digit of the code indicates the order in which they were invited. To illustrate, 101 indicates a participant in the informal interviews, whereas 01 represents the first person to receive the in-depth interview invitation.
2. Gender
3. Home Continent: As the participants' demographic was randomly selected to quickly gather ideas for scoping the questions, the continent of participants involves Asia, Europe, and America.

Participant No.	Gender	Continent
101	Female	South America
102	Male	South Asia
103	Male	Eastern Europe
104	Male	East Asia
105	Male	East Asia
106	Female	East Asia
107	Male	East Asia
108	Female	East Asia
109	Female	East Asia

Table 1- Participant classification

The insights gathered from the interviews were clustered into five primary themes to enhance the organization and interpretation of the insights. (Figure 2)

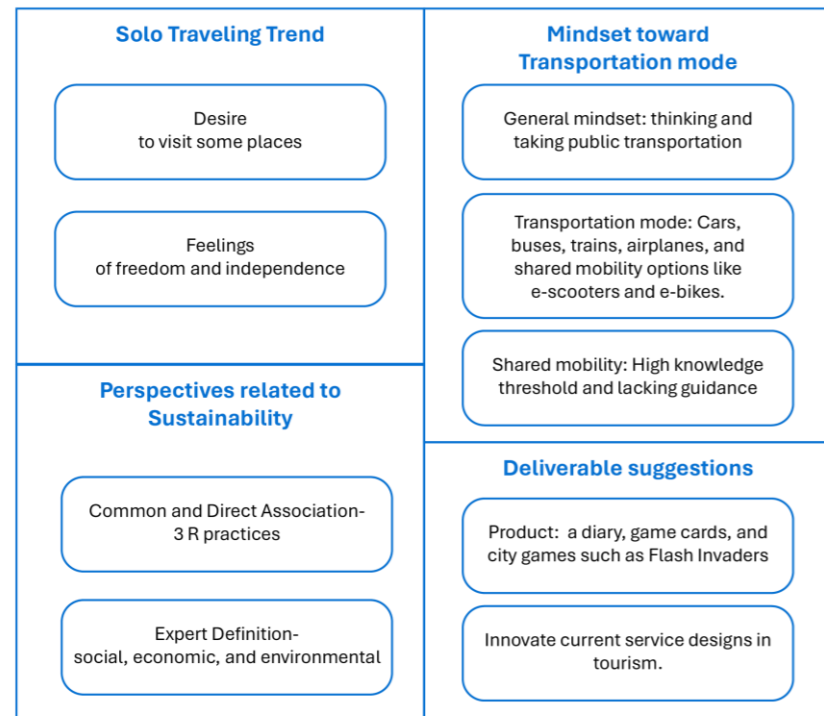


Figure 2- The clusters of informal interviews

Themes are explained as bullet points containing corresponding details, such as the quotes of participants and synthesis of overall feedback provided by participants, which are described below. (The coding process of the informal interview can refer to Appendix 1)

Solo traveling purpose:

The reasons why people travel alone vary; for instance, the majority focus on the desire to visit some places and the feelings of freedom and independence. One representative quote is from 106, *“I really want to go somewhere, and I don't feel the need to find a second travel companion. Usually, if the timing is right or if I think exploring the destination alone won't be boring, I'll book it solely.”* Another quote shows the desire for independence, which 101 cited, *“Traveling on my own is also a way of me connecting more with myself.”*

Perspectives related to sustainability:

This part explores varying levels of Gen Z's understanding of sustainability, the main association toward sustainability with the 3 R practices: reuse, reduce, and recycle. For instance, 105 stated, *“The most direct way to be environmentally friendly is to buy fewer things, especially those with complex packaging, and opt for dining in.”* This example illustrates that sustainability involves consuming less and making environmentally conscious dietary choices. Participant 105 further explains his understanding of sustainability: *“My understanding of sustainability comprises three pillars: social, economic, and environmental; now, some introduce a new factor - the political system.”* This highlights the complexity of sustainability and raises questions about its meaning, societal impacts, and actionable steps.

To provide a clearer overview and help readers understand their potential contributions, an expert definition of sustainability is discussed in the literature review to clarify the concept and its broader implications, including the actions I can take.

Mindset toward Transportation mode:

When considering city travel, reflections on general and public transportation reveal several modes, including cars, buses, trains, airplanes, and shared mobility options like e-scooters and e-bikes. Many participants noted that the knowledge threshold for using shared mobility is too high and the need for upfront payment deters use. For example, 104 said, *“The current knowledge threshold for renting one is high, so it wouldn't be my top choice.”* 109 added, *“In Belgium, I've seen bicycles, but the QR code requirement makes me afraid I'll have to pay.”* Additionally, there's a lack of clear instructions, as 109 noted, *“There's no guidance for using bicycles here, even though I sometimes want to rent one but I'm not sure how.”* This suggests insufficient guidance and high knowledge thresholds often deter shared mobility use. This raises questions about the transportation sector's role in urban sustainability, which will be explored in the literature review.

Deliverables suggestions:

This theme inspires the project's final design. These suggestions help quickly identify the type of final product that can be delivered. Possible formats suggested by participants include physical products like a diary, game cards, and city games such as Flash Invaders.

Additionally, there are ideas for innovating current service designs in tourism. For example, 107 stated, *“There is currently no guidance on environmentally friendly tourism. I think Google Maps doesn't provide such guidance regarding sustainability.”* This highlights the need for integrating sustainability guidance into existing services, which could significantly enhance the user experience and promote sustainable tourism practices.

In conclusion, conducting informal interviews helped define four main categories for the literature review: solo traveling, to understand the behaviors of our target users; Gen Z, the identified demographic; sustainability and sustainable development, the primary focus of this project; and transportation within the city, a sector that resonates strongly with travel behaviors. Identifying these categories aids in honing the research efforts, enabling the collection of pertinent information to address the specific needs and preferences of Gen Z solo travelers. This process also facilitates a better understanding of how to create plans that encourage sustainable travel practices.



2

Literature Review

To ensure that the main research questions are explored in depth before proceeding with the project, the literature study serves to uncover new knowledge and identify sub-questions concurrently. The foundations and arguments generated through this exploration provide an in-depth understanding that is crucial for managing the qualitative research study.

2.1- Solo Traveling Trend

Definition of Solo travelers

Solo travelers start journeys without friends or companions, encompassing short excursions nearby and longer vacations farther away (CBI Ministry of Foreign Affairs, 2024). This trend has seen an increase in recent years. It comprises a diverse range of travelers regardless of age and gender, each with unique activity preferences (The European Market Potential for Solo Tourism | CBI, 2024). In this project, solo travelers are defined as individuals who explore new cities for leisure purposes, primarily focusing on intra-city travel, traveling within the city.

Recent trend of solo traveling

Solo travel has shifted from a specialized form of travel to a more widespread preference among travelers (Yang et al., 2019). The rapid growth in the number of solo travelers in recent years has led to the emergence of tourism businesses specifically catering to this particular group of people (The European Market Potential for Solo Tourism | CBI, 2024).

According to Traveler (2023), to cater to solo travelers' needs, there are currently three main methods commonly applied by businesses to attract solo travelers.

1. Offer flexibility and customization based on different needs, such as offering a personal guide or transport service to fit their itineraries
2. Incorporate social elements into the tour, such as conversations between solo travelers and the tour leader via WhatsApp and Facebook
3. Address safety concerns, like authorities or groups assisting tourists who have been attacked or robbed abroad.

Google searches indicate a trend toward solo traveling; between 2016 and 2019, there was a 131% growth in people searching "solo travel" (Jorden, 2022). In the USA, the trend accelerated further, with a remarkable 236% rise in online searches for "solo travel" from April 2020 to April 2023 compared to the preceding years (Piva, 2023). This 236% increase is based on the search volume growth of 57%, 86%, and 93% from 2019 to 2023, respectively, as detailed in Table 2.

Month, Year	US monthly searches	Year on Year % Change
April 2016	758	-
April 2017	1,077	+42%
April 2018	2,402	+123%
April 2019	2,958	+23%
April 2020	1,262	-57%
April 2021	2,346	+86%
April 2022	4,534	+93%
April 2023	4,246	-6%

Table 2- Online searches for solo travel (Source: Solo Travel Statistics 2023 Guide, 2022)

A worldwide survey conducted in 2019 involving 21,000 participants demonstrates that 76% of respondents show interest and think about the execution of solo travel (Klook, 2019). Solo travel is attractive to individuals of all genders and age groups, spanning from Generation Z to baby boomers (Booking.com, 2018; Klook,

2019). The surge in solo travel is attributed to evolving lifestyles, changing attitudes toward relationships and marriage, and the growing number of people living alone (Klinenberg, 2012; Yang et al., 2019).

Influences on solo travel motivation and obstacles

The motivations behind solo travel can generally be categorized into two groups: involuntary and voluntary (Mehmetoglu et al., 2001). Many travelers are drawn to the idea of exploring a destination independently (Kirkwood, 2011). Previous studies have identified two primary motivations for solo travelers: curious hedonism, which involves seeking new experiences without sacrificing comfort and convenience, and social motives, driven by the desire to build and expand social networks (Laesser et al., 2009). Solo travelers who opt for solo travel are also driven by desires for freedom, flexibility, and retreat (Chiang & Jogarathnam, 2006; Mehmetoglu et al., 2001; Osman et al., 2019; Seow & Brown, 2018; Wilson & Little, 2005).

Compared with group travel, solo travel offers more flexibility and freedom in making decisions on everything during traveling. The freedom of not having to consider other people's travel needs is another critical motivator (Abbasian, 2019; Hosseini et al., 2021; Osman et al., 2020; Seow & Brown, 2018). The report conducted by Radical Storage (2022) below provides a more detailed explanation of the concept of freedom for solo travelers.

According to The European market potential for solo tourism, nearly 84% of solo travelers under 55 opt for solo travel due to a dislike of waiting for others. Other influences that dominate people's decisions include the desire for autonomy without being controlled (68%) and the freedom and independence provided by solo traveling (57%). In addition, a few factors, such as traveling alone due to having different interests than friends (43%), traveling for personal growth (42%), and meeting new people (41%), also contribute to encouraging individuals to travel alone. Apart from the drives leading to traveling alone, the solitude encountered during traveling alone leads to several favorable outcomes, such as spirituality, contemplation, and self-realization (Kalisch et al., 2011; Laing & Crouch, 2009). More detailed information can refer to Table 3.

Reason	< 55 years	55+ years	All
I want to see the world and I don't want to wait for others	84 %	64 %	74 %
I want to do what I want when I want	68 %	57 %	63 %
I like the feeling of freedom and independence	57 %	47 %	52 %
I want to meet new people	41 %	43 %	42 %
Personal Growth	42 %	30 %	36 %
I have different interests than my friends	43 %	37 %	40 %
My partner does not want to travel as much as I do	9 %	13 %	11 %

Table 3- Why people travel solo (Source: Solo Traveler World, 2023)

While solo travel presents numerous appealing aspects and a trend, dissenting opinions also exist. There are 3 main barriers that hinder people from traveling alone in their leisure time. Safety, expenses, and social limitations are the primary obstacles that prevent them from traveling alone (Yang, 2020). The main factors contributing to unsafety include harassment, unwanted attention, fear of various crimes, and the time of day (Ammattikorkeakoulu, 2017). In addition to the differences between traveling alone or with others, there are also 2 demographic distinctions considered the most by recent studies: generation and gender. This part is

explained in the following section.

Generation and Gender differences

Across different generations, solo travel appeals to a diverse range of individuals. According to TRAVEL TRENDS (2020), demographic analysis unveiled varying degrees of interest in solo travel among different age groups. Generation Z emerged as the most inclined towards solo adventures, comprising 76% of solo travelers. Conversely, millennials demonstrated the least enthusiasm, with only 58% showing interest. Gen X and Baby Boomers fell in between, with 73% and 71%, respectively.

When examining gender distinctions in solo travel, Overseas Adventure Travel found that women dominate the solo travel demographic, constituting 85% of their solo travelers (Industry Global News24, 2020). This trend is not isolated to a single traveling company; women are also prominently represented in other segments of the solo travel market, as highlighted in The European Market Potential for Solo Tourism report (CBI, 2024).

Following the gender differences, men and women have different motivations and barriers. Solo female travelers often seek empowerment, self-discovery, and personal challenges, while solo male travelers are typically motivated by adventure, exploration, and a quest for independence. Male solo travelers expressed that their primary concern regarding solo travel was the expense compared to traveling with a companion. By contrast, female's main concern is safety, which is also considered the main barrier stopping them from traveling alone (Piva, 2023). Recent available studies on solo travel mainly revolve around either gender-related topics (Chiang & Jongaratnam, 2006; Wilson & Little, 2008) or adopt a specialized market or segment perspective (Mehmetoglu et al., 2001; Laesser et al., 2009). From the previous studies, the focus is more on gender-based topics, specifically female-oriented ones.

2.2 Generation Z

The earlier mention of Gen Z's interest in solo travel indicates an opportunity to focus the project's demographic scope more precisely. This raises the question: What distinguishes Gen Z from other generations, particularly regarding their characteristics and differences?

Definition of Generation Z / Gen Z

"Generation Z" refers to individuals born between 1995 and 2010 (Francis & Hoefel, 2018); they often labeled authentic digital natives (McKinsey & Company, 2023). Moreover, they have been fully immersed in the online world, social media platforms, and mobile devices during their upbringing. This environment of their upbringing has helped shape a generation with sharper thinking skills who are good at finding and connecting information from different places (Possamai, 2022). Gen Z also find it easy to mix their online activities with real-life experiences, showing their comfort in both the digital and physical worlds (Possamai, 2022).

To explain Gen Z's worldview, particularly for this project, there are 3 aspects to delve into in detail. One aspect is their dependency on technology, another is their views on traveling, including solo traveling, and the third is their perspective on sustainability in general.

Technology dependency

With the emergence of mobile phones, social media platforms, electric cars, and artificial intelligence in recent decades, the experiences and behaviors of individuals who reached adulthood during this period have been significantly influenced, reflecting the profound impact of technological evolution.

An interesting point to note is that, in contrast to preceding generations, Gen Z has regarded social media and mobile devices as indispensable since childhood (TARI, 2011). Various studies indicate that their behaviors, attitudes, and lifestyles notably diverge from those of their parents and grandparents. Furthermore, Gen Z seek solutions to problems and inquire about information primarily through the Internet (TARI, 2011). Many believe that not only the skillset of seeking solutions but also the continuous stimulation and exposure to technology during Gen Z's childhood have enhanced their ability to compartmentalize significantly more effectively than earlier generations (Slack, 2022).

Views on traveling and traveling alone

Globally, 65% of Gen Z believe that spending money on travel to see the world is always worthwhile (Booking.com, 2019). In the coming decade, approximately one-third of Gen Z individuals (34%) intend to have undertaken solo travel at least once, with females and males accounting for 36% and 32%, respectively (Booking.com, 2019). As a result, this reflects that Gen Z exhibits great interest in travel in general, and so does solo travel, as mentioned in the solo-traveling trend. Additionally, independence holds significant importance for the current generation.

Gen Z's Perspectives on Sustainability

Regarding being eco-friendly, 90% of the Gen Z consumers surveyed said they've made changes to live more sustainably in their daily lives, focusing on adopting greener fashion habits (Wightman-Stone, 2021). Gen Z consumers are leading the way when considering sustainability in their purchasing decisions. According to Tidswell (2022), 54% of Gen Z individuals are willing to pay a 10% premium for sustainable products, compared to 50% of Millennials and only 23% of Baby Boomers. However, Forrester's Green Consumer Segmentation, 2023, indicates that EU Gen Z consumers are less inclined than the European population to fall into the "active greens" category, prioritizing environmental sustainability in their purchasing decisions.

The World Counts (2020) study investigated how environmental and transportation changes have affected Gen Z's travel habits. It reveals that Gen Z shows a stronger preference for eco-friendly travel as cities evolve than older generations. They tend to walk or bike more and use cars less. However, they are often classified as "convenient greens," showing concern for climate change but prioritizing convenience and affordability over environmental considerations when purchasing (Husson, 2023). Husson's research disproves some myths, including one that claims EU Gen Z is at the forefront of adopting eco-friendly behaviors.

This raises the question of whether EU Gen Z contain sustainability awareness in their actions. Meanwhile, another point worth understanding is that when many emphasize the importance of sustainability-related issues, what kind of actions can I take to encourage EU Gen Zs' willingness to engage in sustainable actions or choices, especially when they prioritize convenience?

Gen Z's characteristics and concerns show that they have high digital literacy, a high inclination toward traveling, and a high awareness of contributing to sustainability. Hence, to understand what sustainability means and its impacts, the following category will elaborate on what sustainability contains and the related issues carried by tourism from broad to detailed.

2.3 Sustainability and Sustainable Tourism

As previously noted, this section aims to explain the scope of sustainability and its relation to the tourism

industry. Understanding this relationship is crucial for comprehending how it impacts the selected target group—EU Gen Z—and the current aspects of sustainability, its applications, and the corresponding challenges. Additionally, it highlights the potential societal impacts. To gain a comprehensive understanding from broad to narrow, this section is built to start by exploring how experts define sustainability and then delve into its connections with the tourism industry.

Definition of Sustainability and related impacts

Sustainability embodies a fundamental human desire shared by virtually all philosophies and religions: the aspiration to shape a better world for the future (Russo & Comi, 2012). It offers direction for making long-term, strategic decisions (Russo & Comi, 2012). Sustainability is sometimes narrowly defined, concentrating only on a few problems like using up resources and causing pollution (Litman, 2007). But nowadays, it's seen in a broader light, considering a wider range of economic, social, and environmental issues, such as community livability, mobility barriers, and consumer costs, etc. (Litman, 2007). Besides, sustainability means creating fairness and balance for the future, with no definite end, always working to align environmental, economic, and sociocultural goals smoothly (Mega & Pedersen, 2021). Sustainability development ensures that current needs are met without jeopardizing the ability of future generations to fulfill their own needs (Cassen, 1987).

Sustainable development looks ahead and understands how ecosystems, societies, and economies are all connected. It goes beyond short-term gains, aiming for long-term prosperity while protecting the Earth's natural resources and promoting social fairness. This comprehensive approach aims to establish a sustainable balance among humankind, the environment, and economic gains (GGI Insights, 2024). In literature, many aspects explain how sustainability is combined and the diverse impacts it can provide in ecosystems, societies, and economics with both long-term and short-term periods.

Green tourism

Green tourism was introduced by the Slovenian National Tourism Organization in 2009 as a parallel term for sustainable tourism. They successfully brought together various stakeholders in the tourism industry to work together with the slogan "Slovenia is green, Slovenia acts green, Slovenia promotes green." (Mihalic, 2013; STO, 2016). In addition to Green tourism, the term-green travel emphasizes reducing the impact on local environments and communities by opting for sustainable and eco-friendly travel practices. This includes minimizing carbon emissions, managing waste, selecting eco-conscious accommodations, and patronizing local businesses to support communities (Woodley, 2023). Furthermore, according to the suggestions from the analysis conducted by VOYAGE GREEN (2023), the execution of green travel can be identified into six categories, as shown in Table 4.

Category	Actions
Carbon footprint reduction actions	carbon footprint offsetting, plan slow travel, book lower emission flights, use sustainable transport and eco transport
Water conservation and resource utilization	bring your own water bottle, save water, leave no trace, pack light, take and use reusables
Support for local communities	travel local, buy local, eat locally
Choosing sustainable destinations	choosing sustainable destinations, green accommodations,

and accommodations	and hotels with environmentally friendly practices
Respect for local culture and ecology	respect the local community, respect wildlife, enjoy green travel activities, walk or bike wherever you can
Establishment of sustainable travel partnerships	Partnerships with sustainable travel organizations

Table 4- Key actions for implementing green travel (Source: VOYAGE GREEN, 2023)

"Green Travel" refers to ways of traveling and engaging in tourism activities that consider and minimize the negative impact on the environment (Woodley, 2023). This may include using low-carbon transportation, supporting environmentally friendly accommodation options, reducing waste, and conserving energy, among other aspects, as mentioned above.

Moreover, responsible tourism is an essential aspect of sustainable tourism, emphasizing environmental considerations and social and cultural factors and ensuring that tourism activities positively impact local communities and the environment. Therefore, to understand its impact on travelers and organizations beyond just the environmental aspect, the following section was set.

Challenges and Obstacles

According to the analysis conducted by Deloitte (2023), the main reasons why people don't consider adopting a more sustainable lifestyle are a lack of interest (22%), sustainability causing high expenses (16%), and insufficient information to execute sustainable practices (15%).

In terms of the execution in business, even individuals and corporations increasingly emphasize sustainability, acknowledging its importance across diverse aspects; challenges arise from entrenched beliefs in the conventional neoliberal economic model, often referred to as "business as usual" (Dwyer, 2017). This model tends to hinder the adoption of sustainable practices.

Apart from individual and business execution barriers, tourism development's unsustainable trajectory stems mainly from the perspectives and actions of key stakeholders in the tourism sector, including Destination Management Organizations (DMOs), industry businesses, local communities, and tourists themselves (Dwyer, 2017). Market orientation, which focuses on delivering exceptional customer value to enhance business performance, often prioritizes economic effectiveness over sustainable development. This approach tends to separate economic responsibilities from other obligations, such as legal and ethical duties (Heikkurinen & Bonnedahl, 2013).

Under the condition of barriers toward sustainability, it is important to consider how to increase users' intention to contribute to sustainability. This highlights the need to design sustainability-related options that are more attractive to users.

Need of Sustainability in Traveling

Following the previous discussion, it's vital to focus on designing attractive sustainability-related options for users, especially for the target group in this project. This leads to defining the need for sustainability in travel based on understanding the current conditions and identifying areas for further improvement.

According to Lenzen et al. (2018), global tourism contributes approximately 8% of total greenhouse gas (GHGs) emissions. Haullex (2017) mentioned that GHGs related to tourism took up around 4.9% of global emissions and are projected to more than double within 25 years. The tourism industry ranks in Europe as the

third-largest economic sector, employing 17 million people (Halleux, 2017). Therefore, while tourism significantly contributes to Europe's overall economy, it is crucial to be aware of its environmental impact, particularly its emissions and pollution. For instance, in terms of solid waste, in Malta, each local person produces a daily average of 0.68kg of municipal solid waste, and the daily average of solid waste generated per tourist is 1.25kg in a hotel (Halleux, 2017). Other negative consequences are brought by the tourism industry, such as over-tourism, aggressive development instead of taking resources into consideration, waste, and resource scarcity toward the local community. Over-tourism arises when a specific destination experiences an excessive influx of visitors (Francis, 2017). The term "excessive" varies depending on the context and is determined by each destination's residents, hosts, business owners, and tourists (Francis, 2017). According to Dattani (2024), European destinations adopt diverse strategies to tackle overtourism and mitigate its impacts. These strategies vary considerably and include restricting visitor numbers, levying tourist taxes, controlling opening hours and access, mandating reservations in advance for popular attractions, and promoting tourism in lesser-known areas. Some experts or organizations have been dedicated to proposing ideas for sustainable tourism, such as Airbnb, which aims to reduce mass tourism by using technology to steer bookings away from Europe's most crowded tourist areas, promoting more sustainable travel options instead. One sustainable collaboration between Airbnb and the Association of Rural Mayors of France aimed at increasing short-term rental options in villages and enhancing the heritage tourism appeal of the French countryside (Airbnb, 2021; Dattani, 2024). Similarly, various terms aligning with similar meanings of sustainable travel include green travel, green tourism, ecotourism, and conscious travel.

Responsible tourism & CSR

Sustainable tourism addresses the overall sustainability of the tourism industry, whereas responsible tourism encompasses the individual efforts of people, businesses, and destinations to foster a sustainable tourism sector (Angelina, 2020). Responsible tourism is a term that is often mentioned and shares lots of in common with sustainable tourism. In the 1980s, there was considerable talk about promoting a more responsible approach to tourism, which became integral to the emerging idea of sustainable tourism (Krippendorf, 1987: 138–139). Responsible tourism is commonly recognized as a wide range of tourist activities that involve and support local communities while minimizing adverse social and environmental effects (Caruana et al., 2014). Additionally, the focus on responsible tourism mirrors the more significant trend of considering business operations' social and ecological effects, commonly known as corporate social responsibility (CSR) (Caruana et al., 2014). Overall, sustainable tourism is part of responsible tourism, and the scope of responsible tourism contains a bigger scope, not only supporting the environment but also addressing the positive impacts and involvements of the local community.

Emerging Trends in Tourism combining with ethical values

An increasing number of businesses in the tourism industry prioritize creating and managing unique "experiences" for customers to stand out in a competitive market (Pine & Gilmore, 1998). There are also a couple of tourism concepts followed as new consumer values are emerging, including a growing trend toward ethical consumerism (Szmigin et al., 2009), like slow tourism (Fullagar et al., 2012), transformative tourism (Ateljevic, 2009, 2011; Ateljevic et al., 2007), conscious tourism (Pollock, 2012, 2015), socially responsible tourism (Pollock, 2012, 2015), and various alternative approaches. Those are pointing toward the increase of ethical values in the tourism industry, which also elicits the possibility of seamlessly integrating

ethical values with the tourism industry.

After understanding the action of solo traveling, the user group (Gen Z), and the city's positive and ethical contributions, the subsequent chapter will discuss a frequently mentioned category from the informal interviews: transportation. This category is relevant to nearly every type of traveler's journey. The reason for classifying this category as a separate section is that many interviewees in informal interviews associated their experiences with transportation means during their journey, and numerous articles in the literature relate pollution directly to traveling behavior. To dive into the understanding of transportation, starting with the basic understanding of the most common transportation mode in the city and then the content that transportation might involve within the city.

2.4 Transportation and Intra-city travel

Nowadays, cars are considered the most used transportation mode in Europe. In Europe, car travel accounted for 79.7% of passenger kilometers in 2021. However, some transportation preferences vary in different European countries. For instance, research conducted in 2021 shows that car travel constituted the largest proportion of total transport performance in Lithuania, accounting for 91.7%, followed by the Netherlands at 85.4% and Finland at 85.2% among EU countries in 2021 (Eurostat, 2023). As for coaches, buses, and trolleybuses, Malta had the highest proportion (13.3%), with Hungary (12.8%) and Ireland (12.4%) ranking second and third, respectively (Eurostat, 2023).

Negative impacts caused by transportation development

Transportation plays a vital role in facilitating the movement of individuals and goods, thereby promoting economic development and enhancing quality of life (Litman, 2007; OECD, 1996).

Over the past twenty years, there has been an increasing focus on separating the harmful impacts of transportation from economic growth as an innovative approach to addressing unsustainable development (Loo & Banister, 2016; OECD, 2006; Tight, Delle Site, & Meyer-Rühle, 2004; Velazquez et al., 2015). The TDM Encyclopedia (2010) research clearly explains the influence with three pillars, economic, social, and environmental, as seen in Table 5.

Economic	Social	Environmental
Traffic congestion	Inequity of impacts	Air Pollution
Mobility barriers	Mobility disadvantaged	Climate change
Crash damages	Human health impacts	Habitat loss
Transportation facility costs	Community cohesion	Water pollution
Consumer transportation costs	Community livability	Hydrologic impacts
Depletion of non-renewable resources	Aesthetics	Noise pollution

Table 5- The influence of transportation on sustainability (Source: TDM Encyclopedia, 2010).

Meanwhile, the TDM Encyclopedia (2010) proposes suggestions to enhance transportation system efficiency and minimize negative transportation impacts, which are key strategies for advancing sustainability objectives effectively.

Travel Mode	Year	Transport emissions per kilometer traveled
Diesel car	2022	171g

Petrol car	2022	170 g
Motorbike	2022	114 g
Bus (average)	2022	97 g
Bus (local London)	2022	79 g
Plug-in hybrid	2022	68 g
Electric car	2022	47 g
National rail	2022	35 g
Tram	2022	29 g
London Underground	2022	28 g
Coach (bus)	2022	27 g

Table 6- The efficiency of how public transport shrinks the number of carbon emissions per traveler who takes public transportation. (Source: Destatis, 2023)

Besides, the carbon dioxide emissions in Europe from road transport have surged 21% since 1990, according to Destatis (2023). According to Table 6, Passenger cars and motorcycles accounted for 64 %, the largest share of emissions, followed by heavy-duty trucks and buses at 27% and light-duty trucks at 10%. Thus, all the information shows that the transportation sector still significantly contributes to carbon emissions (Destatis, 2023).

Following the description, there is a possibility of reducing carbon emissions from road transport, which gives rise to relevant questions:

- ***How can I shift users' decisions from driving cars or motorcycles within the city (in Europe) toward a more sustainable way of traveling in the city?***

This leads to a grey area: ***Is public transportation as sustainable as people claim?***

If it were considered a comparative eco-friendly choice, seeing that each transportation still provides a carbon footprint, arousing awareness by guiding people to opt for more sustainable modes of travel is critical. As indicated in Figure 3, the selection of modality plays a crucial role in determining the carbon footprint, with CO2 emissions from air transport being notably higher than other modes of transportation (EEA, 2016).

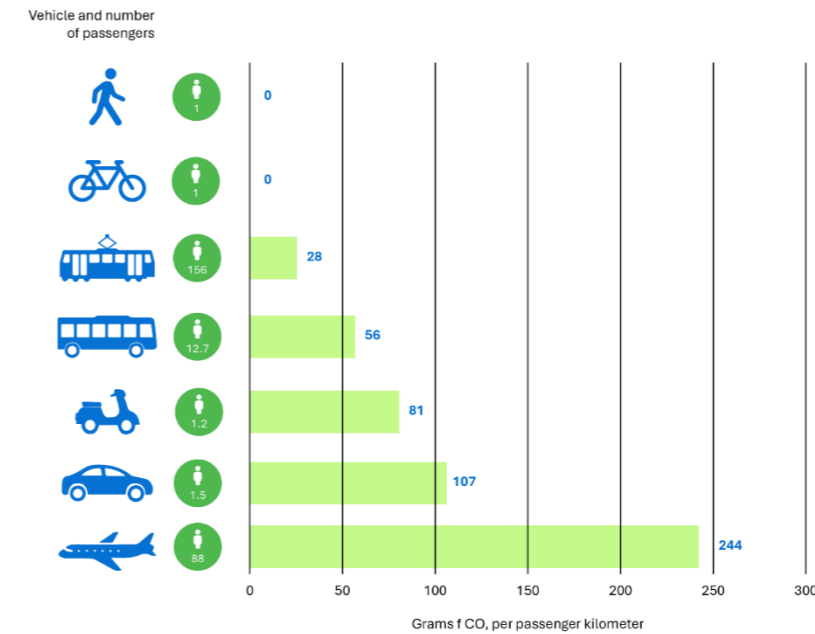


Figure 3- Specific CO2 emissions at average occupancy for various transport modes Source: EEA, Transitions towards a more sustainable mobility system, 2016, p. 52.

In terms of the tourism industry, all GHGs account for 4.9%, and transportation accounts for around 75% (3.7%). Ritchie(2023) has classified 6 takeaways for reducing the carbon footprint during traveling by comparing and analyzing the overall carbon emissions of each transportation mode in one of the European cities; one of the critical takeaways suggests that walking, cycling, or running, whenever possible, provide many advantages, such as lower local air pollution and better health. The merits that walking can provide when traveling in the city are also worth discussing, elaborated as follows.

Walking-A healthy and sustainable choice for traveling

Engaging in physical activity is vital to enhancing long-term health (Pate, 1995). Walking represents the most straightforward and cost-effective means to enhance a city's economic and environmental sustainability (Walker, 2013). The link between walking and sustainability, although less mentioned, is significant. As the Sustainable Cities Institute highlighted, walkable neighborhoods offer several advantages, including reducing greenhouse gas emissions, improving residents' health, fostering social interaction, and boosting the local economy (Cubukcu, 2013). These benefits extend to solo travelers exploring the city. With walkable neighborhoods, solo travelers can effortlessly navigate the city on foot, enjoying the independence to explore at their own pace while minimizing their reliance on transportation. This enhances their experience and aligns with sustainable practices, creating a win-win situation for solo travelers and the environment. In other words, walkability relies on the importance of both urban planning and design. In addition to considering the aspects of the merits of walking itself and the factors influencing how convenient and comfortable walking in the city is, there is an opportunity to attract young solo travelers by offering greater flexibility and freedom to make behavioral changes.

2.5 Conclusion of this chapter

This chapter has reviewed literature with 4 main categories to elaborate: solo travel, Gen Z, sustainability, and transportation. To briefly recap the importance of each section, 4 key takeaways are listed in each

section of this chapter.

1. Solo travel is gaining global popularity, particularly among adventure-seeking Gen Z. To understand solo travel needs comprehensively, research should expand to include diverse traveler groups instead of females as previous studies have predominantly focused on the concerns of female solo travelers. However, there is a growing trend in solo travel worldwide, especially among Gen Z, who are particularly interested in adventurous experiences. This shift highlights the need for research to address the broader spectrum of solo travelers' needs. For the travel industry and policymakers, this presents both new challenges and opportunities to enhance safety and services.
2. Gen Z, is seen as a group highly dependent on technology and sustainability awareness. EU Gen Z is at the forefront of adopting eco-friendly behaviors in sustainability. Nevertheless, Gen Z's behaviors contributing to sustainability are less active than their high awareness. Therefore, it is worthwhile to discuss what factors encourage them to behave in ways that align with the values of sustainability and benefit the overall society and environment. The next chapter will explore these possible factors by gathering data through in-depth interviews.
3. As a broad definition, sustainability incorporates diverse aspects that aim to shape a better world through long-term strategies. For this project specifically, visions in tourism are also discussed to encourage the application of green travel in the future.
4. Accumulated studies have provided a holistic view of the types of pollution caused by transportation, highlighting that public transportation can reduce the carbon emissions generated per person. Despite this, the transportation sector remains a major contributor to carbon emissions. Therefore, it is vital to encourage more environmentally friendly behaviors within the city, such as walking and biking, which generate less waste and consume fewer resources during exploration.

The takeaways provide valuable insights into current trends, customer behaviors of target users, and their actions within the city, particularly regarding solo travel. To understand the reasons behind their decisions and actions, these four takeaways offer several sub-questions and are also considered fundamental elements of in-depth interview questions.

Next steps

In the next phase, I conducted a qualitative research study using four key categories as the basis for interview questions. This process enables me to dive into the specific concerns of Gen Z and understand the factors that can transform their awareness into eco-friendly actions. My first step is to recruit Gen Z individuals with solo travel experience to gain their perspectives on these four categories, ranging from broad to detailed.

3

Qualitative Research Study

In the qualitative research study, to comprehend what target users perceived, the main research question and the gathered sub-questions were explored in depth by interviewing the participants; the details of the main research question and sub-questions can be referred to in the following method setup. Both analysis and integration extracted from this part then be applied in the subsequent design and development phases.

3.1 Method Setup of this chapter

Setup aim

This chapter aims to build on the key takeaways and accompanying questions gathered through literature reviews, delving deeply into the users' perspectives to foster empathy and understand the target group's viewpoints. Empathy enables us to understand and relate to others' feelings, allowing us to comprehend their problems, circumstances, or situations as if we were experiencing them ourselves (Alrubail, 2015). The foundations and arguments generated through this exploration can then be utilized to gain an in-depth understanding, thereby identifying design opportunities. In other words, the empathy fostered through the qualitative research study allows understanding of the concerns of the users, EU Gen Z, which helps to stimulate design opportunities. Hence, the methods used in the qualitative research study session are discussed below in this part.

Firstly, the original research question is

[- How can I encourage young solo travelers to consider choosing more sustainable options when traveling in the city?](#)

The following questions elicited from the key takeaways in literature reviews, which are:

1. With the highest awareness toward sustainability but low conversion into actions, what factors do they consider or prioritize during the solo travel journey?
2. What factors encourage them to behave in ways that align with the values of sustainability and benefit the overall society and environment?
3. As mentioned, what do they perceive as sustainability, and how do they apply it to their daily lives?
4. The transportation part showed that pollution is strongly associated with carbon emissions. Hence, what are their concerns regarding the selection of transportation modes?

To address the main research question and its related sub-questions identified in the literature, the qualitative research study is structured into two main phases: Data Collection and Data Analysis.

Data Collection focuses on gathering data and information from the target group, EU Gen Z, to address the research questions.

Data Analysis involves analyzing, synthesizing, and converting the gathered information into insights reflected in design opportunities.

Data collection

3.2- In-depth interview with semi-structured format: The in-depth interviews were conducted using open-ended questions, the aim of which is to comprehensively understand the users' perspectives and rich insights (Boyce & Neale, 2006). This approach was selected to obtain deeper, more valuable insights and connect with users more meaningfully. It allows participants to share their core values, personal ideas, and honest thoughts rather than just providing surface-level data.

Data Analysis & Findings

3.3- Familiarization with interview transcript: This step is essential for understanding the gathered data. By entirely reviewing the transcripts, we can interpret the data more effectively and consider how to organize the findings more clearly. Additionally, this process ensures the identification of key themes and insights for the next step, enhancing our analysis's quality.

3.4- Thematic coding: After conducting the interviews, thematic coding was used to efficiently organize the

data by identifying patterns and grouping them into themes. This process clarifies the relationships between themes and highlights the importance of participants' concerns.

3.5- Insight Interpretation: To introduce a few interesting insights captured and analyzed through the quotes from the interviews following thematic coding. These insights were integrated into bullet points and tables, which helped to interpret the themes and patterns more detailed and nuancedly at the beginning of the analysis.

3.6- Scale visualization: Scales offer an efficient method to transform data values into new values suitable for visualization (Murray & O'reilly Media, 2017). This tool was selected to compare and outline the value tension between participants. Compared with the text, visualizing the scales helps the qualitative analysis clearer in interpretation and comparison and helps the readers understand, which benefits from observing the user trends.

3.7- Coordinates & Quadrant Analysis: The coordinates were derived from placing and combining different scales on axes, which helps to project more concrete needs from the participants. Meanwhile, the quadrant helps to identify and classify the target group and their differences. This method is then applied to creating Personas, as it effectively and quickly illustrates the different user groups through the quadrants.

3.8- Insight Integration: After analyzing the data, key insights were summarized in bullet points to clarify the factors influencing users' decisions, including users and their relevant behaviors. This highlights what affects the users.

3.9- Persona: Persona types were synthesized from quadrant analysis due to the division of 2 scales; Persona is a useful tool that is beneficial in identifying the EU Gen Z solo traveler types and corresponding details, shaping the solution-based directions satisfying the different requirements generated by each persona type.

3.10- Design Goal & Criteria: According to the Interaction Design Foundation - IxDF (2016), design criteria ensure that design concepts, products, and services align with user needs and business objectives. To support this project's purpose, key points combine with the project purpose and the values of EU Gen Z solo travelers' concerns for their journey. After understanding the differences between each Persona, this process establishes a fundamental standard for evaluating concepts during the idea generation phase.

3.11- Discussion of this chapter: This section briefly concludes the process and highlights the process of the qualitative research study and the main focus applied for executing the next step.

3.2 In-Depth Interview Setup

Aim

The aim of conducting in-depth interviews is to gather comprehensive information that provides insight into an individual's viewpoint, personal experiences, emotions, and the significance they attribute to a specific topic or issue (Rodica, 2008). In line with the knowledge gaps identified in Chapter 2, these in-depth interviews help uncover the inner needs and values of EU Gen Z when making sustainable choices while traveling in the city.

Execution plans

The in-depth interviews were planned to be executed in 4 steps according to Workbook E., 2014, which are sampling strategy, in-depth interview guide, interview, and analysis. (Figure 4 shows the rough process, and the details of what to do in each step are given below.)



Figure 4- The 4 stages of conducting the in-depth interview (Source: Workbook E., 2014)

Sampling strategy: The sampling strategy prioritized selecting European Gen Z individuals with substantial solo travel experience to gain a deeper understanding. Recruitment focused on university forums, social media groups, and travel communities frequented by young European travelers. Additionally, two international experts with extensive solo travel experience in Europe were included for a broader perspective. Recruitment was facilitated through online networking, using a recruitment flyer and Google survey distributed via platforms like WhatsApp. Interviews were conducted flexibly in person or online based on participants' availability.

In-depth Interview Guide Setup:

The main goal of the sampling strategy is to understand what motivates EU Gen Z to travel sustainably. In-depth, semi-structured interviews are chosen for their ability to provide rich, detailed insights into participants' views and experiences (Delve, 2024). This format allows for predefined questions and flexible exploration, helping uncover deeper motivations and identify areas for future improvement (Barclay, 2018). The interview guide includes open-ended questions organized into four sections: solo travel, Gen Z, sustainability and sustainable tourism, and transportation. An additional section at the end explores participants' ideal future scenarios to gain insights into their expectations and aspirations. The detailed interview guide is attached in Appendix 2, and the objectives of each phase are outlined below.

Stage 1: Understand EU Gen Z solo travelers' traveling habits: This part discusses their decision-making and flexibility during journeys.

Stage 2: Vision of EU Gen Z solo travelers on city travel sustainability: This phase explores their initial understanding of sustainability and green travel and how they apply it to their urban journeys.

Stage 3: The reasons behind taking specific transportation means: This part presents a scenario for participants to envision themselves traveling alone in the city, introducing various transportation options.

This approach helps to reveal their preferences, the reasons behind their choices, and the factors they value most.

Stage 4: The ideal situation in traveling in the future: Apart from personal habits, viewpoints regarding sustainability, and reasons for making decisions, this part is designed to understand how their current understanding reflects the future expectation

Interview execution: The entire period took around 2 weeks, and the expected participants were 10 Gen Z people, randomly selected from European countries and people out of Europe with rich experience traveling alone in European countries. The duration of each interview was around 40-60 minutes per participant.

3.3 Familiarize with Interview Transcripts

After conducting the interviews, a large amount of data was gathered. Familiarizing the data was conducted subsequently to understand the participants' insights and identify areas for improvement. Several steps were executed to help with data familiarization, participant classification, and identifying key themes and patterns from the extensive data set.

In the familiarization phase, integrated tables are provided as basic introductions to data analysis, guiding readers through the analysis step by step.

Firstly, to introduce who participated in the in-depth interviews, the table below provides a clear overview for readers to understand the differences between participants. Some tips are listed to guide the readers to understand the definition of the category in Table 7,

1. The in-depth interview is the second interview session of this project. Hence, the number of each participant code starts from 2, and the last figure represents the invitation order. For example, 202 indicates a participant in the in-depth interviews, whereas 02 represents the second person to receive the in-depth interview invitation.
2. As the target group is Gen Z, the Birth year of each participant ranges from 1995 to 2010.
3. Status is mainly based on three types: student, prepared to work, and work.
4. Details are for readers to understand what field or industry they are working in right now.
5. The note classifies whether the individuals are EU Gen Z or provides an international perspective. As mentioned in the 3.1 Method Setup, two internationals are perceived as providing objective and expert views based on their past experiences traveling in Europe.

Participant No.	Gender	Birth Year	Status	Details	Note
202	Female	1998	Work	Graduated 2 years ago, now working as a graphic designer	EU perspective
204	Male	2000	Student	Master student in Built Environment	EU perspective
205	Male	1999	Work	Postgraduate diploma in management and currently in charge of management consultant	EU perspective

206	Male	2000	Prepared to work	Preparing to be a flight attendant	EU perspective
207	Male	2002	Student	Going to become a master's student in Electrical engineering	EU perspective
208	Male	1999	Student	Master student in industrial design engineering	EU perspective
209	Male	2000	Student	Master student in industrial design engineering, used to exchange in the UK	EU perspective
210	Female	2002	Student	Bachelor Nursing student	EU perspective
211	Male	1997	Prepared to work	Postgraduate diploma in management (specialization - Operations and supply chain management)	International perspective
212	Male	1995	Prepared to work	Working-holiday in the Netherlands, recently preparing to have a start-up	International perspective

Table 7 -Participant classification

3.4 Thematic coding

The collected data from the transcripts underwent thematic coding analysis (Source: Rodica, 2008). This process enables text categorization, creating a structured framework of thematic concepts, as Gibbs (2007) described. The attached Figure 5 shows the result of the thematic coding. (Detailed results can refer to Appendix 3)

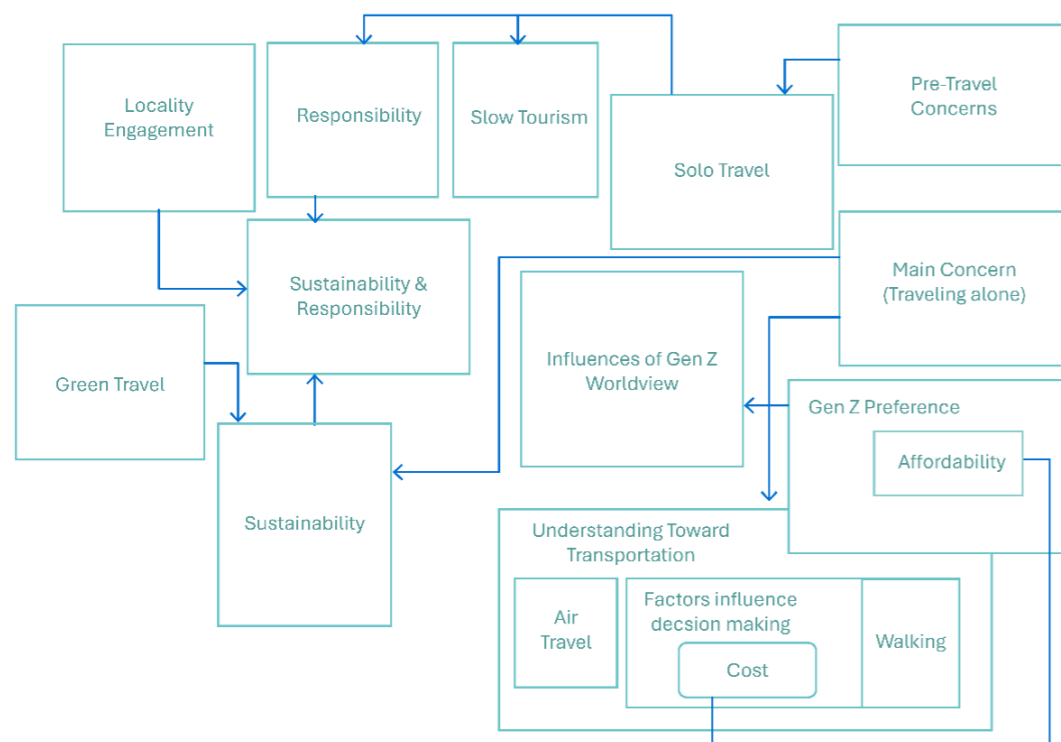


Figure 5- The result of the thematic coding

During the thematic analysis, several themes emerged from the interview quotes. One notable finding was the frequent mention of air travel from EU Gen Z in discussions about sustainability despite it being ir to the main topic. This initial analysis is the first step in interpreting the insights extracted from the thematic coding process. The themes identified during this process provide a preliminary understanding of their relationships. Thus, the following insights were collected to interpret the gathered data more precisely about EU Gen Z's standpoints and concerns.

3.5 Insights Interpretation

Additional interesting insights were found through the interviews after the thematic coding process. To interpret these insights, 7 bullet points are provided below, offering readers a clear overview to immerse themselves in the analysis.

1. **Three critical values for EU Gen Z solo travelers to travel alone: freedom, flexibility, and personal empowerment.** Participant 212 mentioned, *"Solo travel allows the freedom and the exploration of personal pace."* Gen Z finds solo travel appealing because of the freedom and flexibility to control their pace during vacations, and this sense of freedom empowers individuals to execute plans independently.
2. Many EU Gen Z solo travelers expressed a desire to **engage with the local environment and residents during their trips, embracing the local culture while also seeking acceptance and interaction with locals** in the present and the future. 206 quoted, *"The important value for traveling in the future is meeting new people, learning from each other, making new friends; geographically discovering the world is fascinating."* Another quote also mentioned by 212, *"Traveling is about interacting with people and experiencing a new thing with people around. For me, inclusiveness like the people should be welcoming, and even I should be able to, you know, embrace their culture. "*
3. With the economic factors and the premium perception of sustainability-related products, it's clear why EU Gen Z might be interested in sustainability but reluctant to apply it. To address this, **it's crucial to offer sustainable options at reasonable prices, as EU Gen Z tends to choose the most economical option in various situations.** The insights extracted from quotes 204, 207, and 210 specifically revealed the complex relationship between sustainability, affordability, and consumer behaviors among EU Gen Z in general. 204 quoted, *"Expensive sustainable choices create a dilemma for users to make a decision."* 207 stated, *"Sustainability sometimes makes people feel like a premium product that we cannot afford. But it's something we need to strive to."* As mentioned, the EU Gen Z's environmental consciousness is high. Travel choices often focus on price and convenience because, as 210 said, *"The entire economy and personal economic status drive people to the cheapest option."*
4. **The local food exploration process is greatly appealing to EU Gen Z,** being seen as exploring hidden gems as well as a treasure hunt, which they are particularly mentioning as the thing they can be responsible for and enjoy meanwhile." I don't know foods, you could say, because that was always like these hidden gems that I care about doing my travels." mentioned by 209.
5. **Overall, "being Responsible" this concept is more convincing for EU Gen Z (9/10).** According to their direct association, Sustainability primarily aims to reduce environmental harm, while responsibility encompasses a broader scope, including aspects like the local ecosystem. As 211 noted, *"Responsible*

captures the whole thing better than sustainable." 209 elaborated, *"I feel like sustainability is a part of being responsible, but in the greater scheme, essentially being sustainable means being responsible for your environment."*

Besides the 5 bullet points, a few additional findings are worth discussing. In terms of transportation, three criteria were provided for participants to rank during the interview session: convenience, comfort, and sustainability. Additionally, two values were frequently mentioned when participants ranked these criteria. To illustrate how participants compared these values when traveling, Table 8 was created below.

Participant No.	Gender	Compared items rank			Frequently mentioned value	
		Convenience	Comfort	Sustainability	Cheap	Safety
202	Female	1	2	3	✓	✓
204	Male	1	1	1	x	✓
205	Male	1	2	2	x	x
206	Male	1	2	3	✓	x
207	Male	3	2	1	x	✓
208	Male	1	2	3	✓	✓
209	Male	1	1	2	✓	x
210	Female	1	2	3	✓	x
211	Male	1	2	2	✓	x
212	Male	1	1	1	✓	x

Table 8- The comparison presents which factor participants prioritize the most when choosing transportation modes for city travel.

This table shows a few circumstances of how people rate the 3 values concerning transportation selection. The highly mentioned values under the transportation-related questions, safety and cheap, are listed in the same table for a more precise comparison. To elaborate, the following bullet points list the main insights from the table,

- Convenience is prioritized on most occasions (9 out of 10).
- Sustainability is often ranked lowest by EU Gen Z, indicating that they care less about sustainability when it comes to traveling alone this behavior.
- Cheap is highly mentioned, which in turn shows the fact that EU Gen Z are sensitive about the prices, being highly concerned about affordability
- Safety is frequently mentioned but not as high as other values; almost 50% of participants are aware of this value

However, the process above interpreted how they valued and considered the selection of transportation modality. More details were mentioned by participants during the interviews, explaining how they decided on different aspects and contexts where they encountered during the journey.

To explain the details, the following analysis discusses the findings more clearly and comprehensibly, and the data visualization in scales was set subsequently.

3.6 Scale Visualization

Data visualization is helpful to tell a story by presenting data in an easier-to-understand format, emphasizing trends and outliers (Tableau, 2018). Therefore, to interpret the details and differences from the interviews in an easy-to-understand way, six scales were compared:

flexibility of planning, decisions based on environmental friendliness, exploration pace (in the city), traveling preference, digital involvement (during the journey), and crowd.

These six categories were frequently mentioned in the interviews and reflect important values considered by participants. Hence, they were selected for comparison on scales.

Before breaking down the details of the scales, each participant represents one color for identification. Table 9 below indicates the representative color of each participant.

Participant No.	202	204	205	206	207	208	209	210	211	212
Color	Light Blue	Yellow	Orange	Light Red	Pink	Purple	Dark Purple	Light Orange	Light Green	Dark Blue

Table 9- Representative Colors of Each Participant

The content of each scale includes definitions, quotes cited by participants, and how participants were positioned as outliers. (Detailed quadrant analysis can refer to Appendix 4)

3.7 Coordinates & Quadrant Analysis

The key insights gathered from the participants' quotes clearly highlight their differences when compared through scale visualization. However, this method only shows the importance per scale and the tendency of most users but does not provide a detailed user comparison. Combining two scales in a quadrant analysis improves the observation, identification, and differentiation of major user group perceptions, enhancing the effectiveness of the scales.

Firstly, Figure 6 presents the combination of two scales to see how important digital information is involved during the journey and the preferred traveling pace in the city, the goal of which is to understand EU Gen Z solo travelers' preferred vacation.

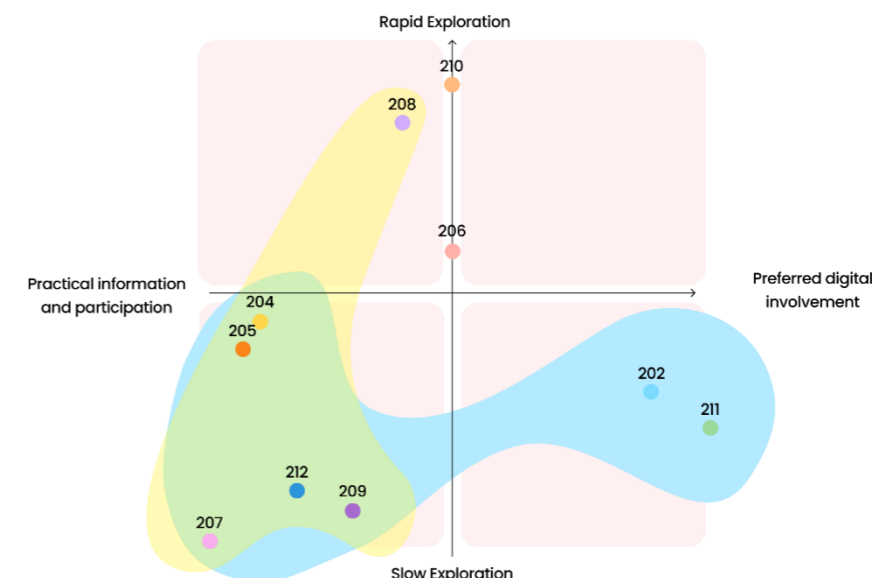


Figure 6- Combination of two scales, exploration pace (in the city) and digital involvement (during the journey)

Two main insights analyzed from Figure 6,

1. **Yellow segment:** EU Gen Z mostly favor exploring cities at a slower pace with practical participation. While digital involvement is less favored, their high technological proficiency makes it a valuable addition.
2. **Blue segment:** Slow exploration during vacation is preferred for most EU Gen Z as outlined in the scale of exploration pace

The results from Figure 6 suggest that enhancing overall design or service performance through digital means, such as integration with apps or wearable devices, may not be that appealing to the target users- the EU Gen Z. Instead, they seem to prioritize practical participation over digital enhancements.

Secondly, the scales of crowd awareness and flexibility in planning and adjustments were selected in Figure 7 to understand the relationship between crowd awareness and planning flexibility. This helps to gain deeper insights into how EU Gen Z perceives crowds during travel and if they might be influenced by the crowd being influenced to adapt their plans accordingly.

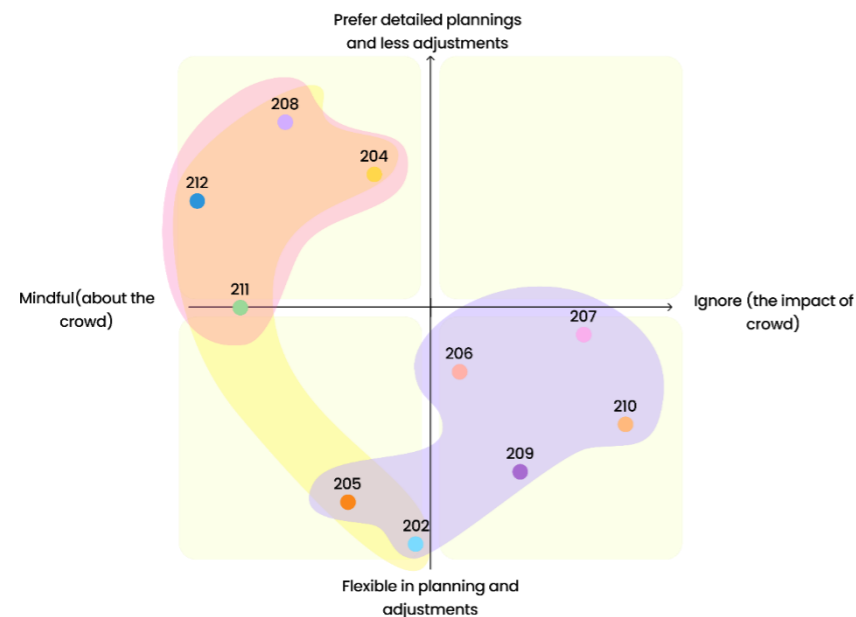


Figure 7- Combination of two scales, flexible of planning and mindful toward the crowd

Three main insights analyzed in Figure 7.

1. **Purple segment:** EU Gen Z are highly flexible in planning and adjustments. EU Gen Z are highly flexible in planning and adjustments. 211 is not considered as a part of the purple part or red segment, seeing that he still prefers sticking to the plan but is open to changes.
2. **Yellow segment:** There is a circumstance that EU Gen Z solo travelers are quite mindful about the crowd while traveling alone in the city.
3. **Red segment:** People who follow the planning are due to being mindful of the crowd.

These insights present design opportunities to promote less frequented destinations, such as niche places with fewer tourists, to users who prefer following fixed travel plans and adjustments.

Lastly, the scale of traveling motivators (in the city) was selected because many participants expressed

preferences related to their locality (detailed quotes can be found in the scale section). Another selected scale measures the preference for environmentally friendly choices. Combining these two scales (Figure 8) identifies the understanding of whether environmental considerations influence the decision-making process and the target group's traveling tendencies.

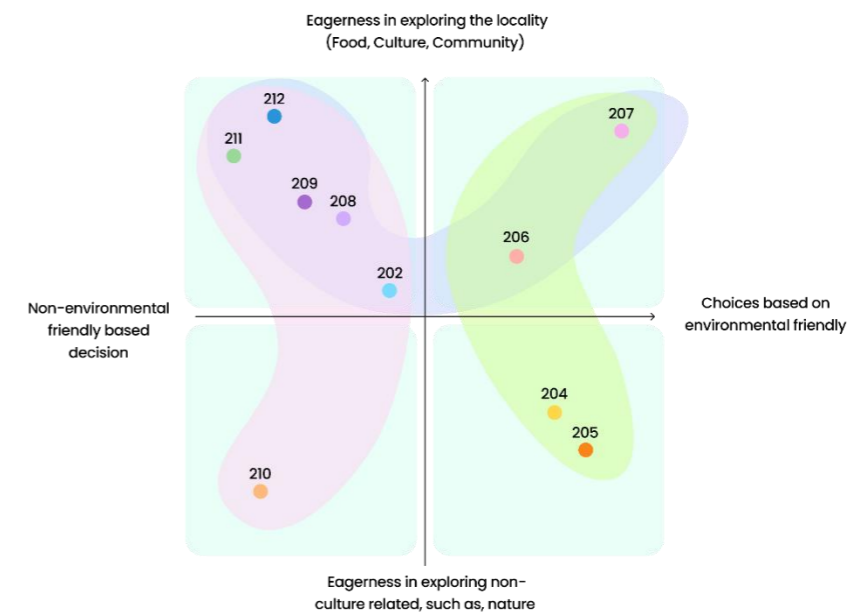


Figure 8- Combination of two scales, traveling motivators, and decision based on environmentally friendly

Three main insights gained through Figure 8,

1. Each quadrant has a distinct consumer or user base, indicating diverse market segments.
2. **Purple segment:** As shown in Figure 8, most EU Gen Z are enthusiastic about exploring the local area. However, their decision-making when traveling in the city tends not to prioritize environmental considerations.
3. **Pink segment:** Many travelers still decide without considering the environment. However, they show a strong interest in exploring local culture, food, and community while traveling within the city. This contrasts with the yellow section, as detailed in the following point.
4. **Yellow segment:** This part represents EU Gen Z individuals who prioritize environmental sustainability in their behavior and decision-making. For this group, attractions related to local culture and community, or things related to the locals, might not be attractive due to the different travel motivators they originally kept.

The segments in Figure 8 highlight the varying priorities and interests of EU Gen Z travelers. Despite their different travel motivators, a focus on environmental responsibility remains possibilities to become a significant consideration for these travelers.

This section explores findings related to their preferred way of traveling and travel style, highlighting trends such as their preference for physical engagement and a leisurely pace when traveling alone, as well as a focus on finding authenticity in the city despite less consideration for sustainability.

The following section, "Insights Integration," presents findings highlighting the importance of the project's original purpose and the connections between different sectors.

3.8 Insights Integration

The analysis and synthesis process revealed several valuable insights. These insights were categorized and summarized in the following bullet points to ensure a consistent understanding of the project and guide the development of a clear design direction.

User-EU Gen Z solo travelers

- EU Gen Z solo travelers: The demographic is selected as this group of Gen Z is considered to obtain the highest awareness compared with other Gen Z

Behavior- Being sustainable to the environment Be responsible to the locals

- **Being responsible is more favored by EU Gen Z traveling**
 1. **Insights captured through Qualitative research process:** Responsible tourism is more favored for the EU Gen Z due to the captured content containing a more complete scope rather than just environment
- **Why do they (EU Gen Z) need to be sustainable or responsible when traveling?**
 1. According to research, Gen Z, in general, has a high awareness of sustainability but low conversion in actions
 2. The population of Gen Z is increasing in terms of traveling compared with people from different generations. If they aren't sustainable to the environment and responsible to the local community, pollution in either kind will increase times significantly

Constraints for going in this direction

- Less information or awareness regarding being responsible to the locals was mentioned or advised regarding their (target users) actions.

3 main Constraints of being sustainable and responsible

- Convenience
- Affordability (Cost)
- Flexibility

How can locality exploration be one key direction aligning with sustainability?

- **Hunger of Authenticity:** EU Gen Z solo travelers expect to create new experiences by experiencing the authenticity of the place they visited.
- **Benefit the local business:** Buys local produce and products to generate more benefits for local economies (Dwyer, 2017)
- **This solution fits EU Gen Z's needs in experience creation:** EU Gen Z solo travelers expect to create new experiences by being more inclusive and interacting more with the local community.

3.9 Persona

Analysis integration helps us to integrate the main points for better understanding. Nevertheless, to identify the differences between users and classify their needs, Persona is an effective tool as creating Persona assists designers with comprehending the needs, experiences, actions, and goals from the user's side (Interaction Design Foundation, 2014).

Following the analysis in Quadrant Analysis, Figure 8 is considered the most representative for dividing the

target groups into Personas because it includes participants from each quadrant.

This comprehensive representation ensures that all segments of the target market are covered, providing a holistic view of the diverse needs and preferences of EU Gen Z travelers. By including participants from every quadrant, the analysis can create more accurate and inclusive Personas. This approach leads to better-targeted design and marketing strategies while also identifying the differences between the target users. Using Figure 8 benefits the project by ensuring that all user perspectives are considered, leading to a more well-rounded and effective solution.

In Figure 9, each quadrant corresponds to a distinct Persona. Moreover, to offer a comprehensive understanding of each Persona type, Figure 9 employs labels A, B, C, and D to distinguish between them, facilitating the classification of their fundamental differences.

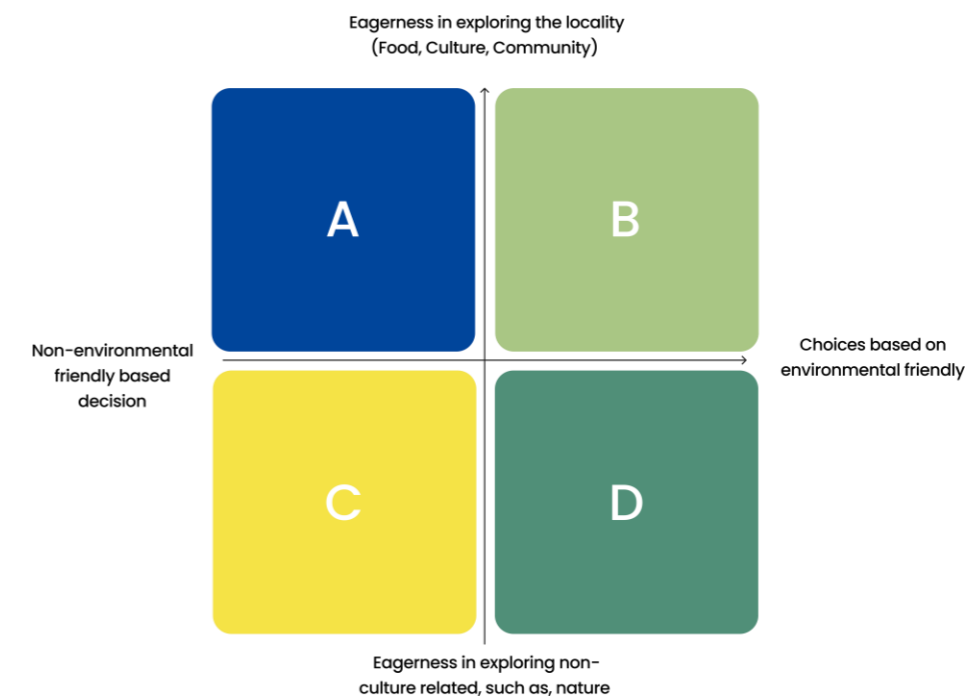


Figure 9-Persona type overview

As depicted in Figure 9, the description of each Persona contains demographic details, including corresponding introductions, characteristics, and needs, particularly when traveling alone in the city. (More details of each Persona group can refer to Appendix 5)

Persona Type A-Life Explorer

They are a group of people who desire to explore the locality but make decisions without caring about the environment



Figure 10-Persona Type A-Life Explorer

- **Description:** Max is a 23-year-old master's student with a vibrant and forward thinking who is always connected and up-to-date with the latest trends. He's socially conscious, innovative, and entrepreneurial, balancing studies with a love for travel. Max seeks authenticity in his journeys, preferring local experiences over tourist trails, and is always ready for new adventures. His travels are not just about sightseeing but about engaging with local cultures.
- **Quotes:**
 - "For me, inclusiveness like the people should be welcoming, and even I should be able to, you know, embrace their culture. "
 - "I don't know foods, you could say, because that was always like these hidden gems that I care about doing my travels. "

Persona B- Nature-Culture Enthusiast

They are a group of people who are eager to explore the locality and care about the environment



Figure 11-Persona Type B- Nature- Culture Enthusiast

- **Description:** Alex is an easygoing individual who has a deep appreciation for the natural world and diverse cultures. With a background in environmental studies, Alex travels not just for leisure but to learn and contribute to the places visited. Whether it's volunteering in reforestation projects or participating in community-led cultural events, Alex is always ready to lend a hand and share knowledge. Embracing the journey as much as the destination, Alex's travel stories are filled with insights about sustainable living and the beauty of human diversity.
- **Quotes:**
 - "Sustainability is like an eye opener, I guess I think also really sustainable documentaries can really help you to see the things that you didn't see before."
 - "I also think it's nice to really slow down and really see it, but it's also nice to take the bus because then you travel more quickly and you can also get a few of the city and decide where what the specific part you want to see more. "

Persona Type C-Life Enjoyer

They are a group of people who are eager to explore non-culture or locally related things and make decisions without caring about the environment.



Figure 12- Type C-Life Enjoyer

- **Description:** Molly is currently a working student studying in Nursing. Her worldview prioritizes personal happiness and growth, valuing her needs and thoughts over external influences. Despite understanding the impacts of personal behaviors, she still values personal happiness is important. She prefers to live in the moment and doesn't keep up with current trends. She only follows her heart and what she wants to do.
- **Quotes:**
 - “For me flexible is very important because I don't like to plan too much. I get too much stress and so for me it's very important.”
 - “News gives me too much stress, I don't like it. There are so many negative things happening. Also, I'm not really too much on social media as well.”
 - “I think that I don't think too much about the emission or sustainability while I'm traveling because I just want to relax and have a convenient nice time.”
 - “I can also not go, but on the other hand I'm thinking you only live once and I want to go there and it's only one hour by plane, so I don't know, but I I feel that I feel sorry that I fly so much, but still I my own like happiness.”

Persona D: Silent Green Practitioner

They are a group of people who have the eagerness to explore non-culture or locally related things and make decisions and care about the environment



Figure 13- Type D- Silent Green Practitioner

- **Description:** Nora is a consultant with Built environment master degree. She is deeply passionate about nature and the environment, regardless of where she is. In her daily life, she is committed to concrete and practical sustainable actions. When traveling, Nora always keeps a detailed plan with a little flexibility beforehand but she usually follows her plan. Generally, she enjoys visiting well-preserved natural landscapes and prioritizes experiences that allow her to connect with nature. While local and exotic experiences are not her primary focus, she appreciates them as added bonuses during her journeys.
- **Quotes:**
 - “I think sustainability should be a general human responsibility to take care about our environment.”
 - “I like to plan a lot before I go traveling. To know exactly where I will go and how I want to plan it, I have like quite a full schedule when I'm both the city trips and hiking as well.”
 - “When traveling is important to take the choice that is more sustainable and to get somewhere while on the other hand, I of course also experienced that usually the most sustainable choice is also the most expensive choice.”

Solution-based directions

Each persona group has specific needs. Consequently, solution-based directions were established to outline possible design approaches for each group. These solution-based directions offer foundational guidance, ensuring clear design strategies that address each persona's unique needs and preferences before expanding into a broader range of ideas.

For each group, three solution-based directions were generated for each persona to serve as the initial starting point for the design process. (Detailed solution-based directions for each persona can be found in Appendix 6.)

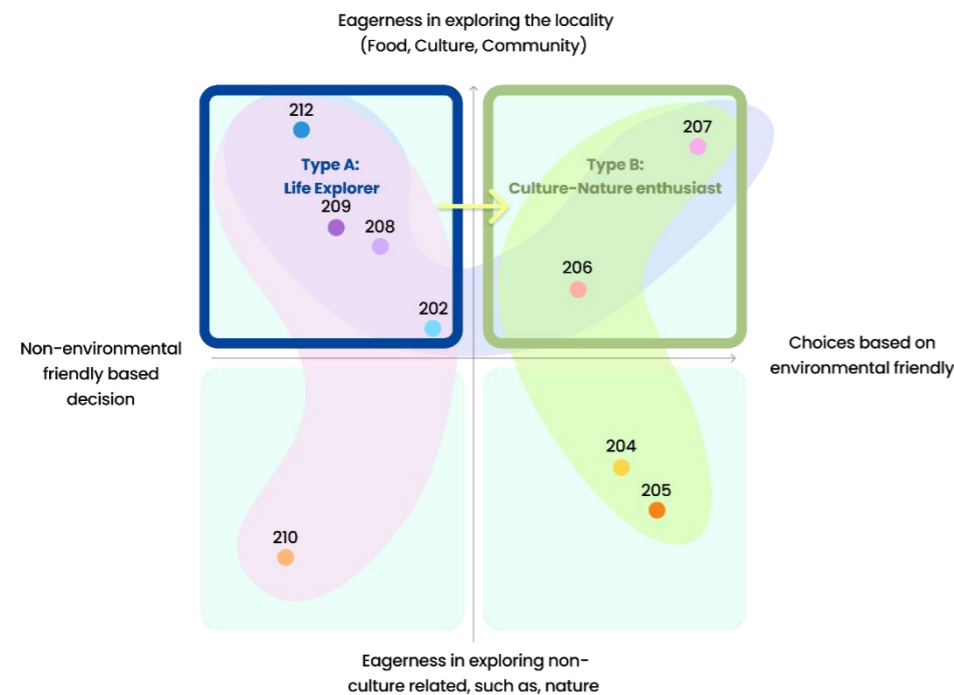


Figure 14- The shift from Persona Type A to Type B

After analyzing the solution-based directions, a key question arises: What user type should we prioritize, and what design direction should we adopt for execution?

As mentioned, the majority of individuals fall into the Type A quadrant. I perceive Type B, Type C, and D as control groups for the Type A persona, providing diversity in user needs. Type C includes users with difficulties shifting their behavior compared to other personas. In contrast, Type D consists of users who have made significant efforts to act sustainably but show lower interest in exploring local specifics.

These groups help me understand the different behaviors and motivations of various EU Gen Z solo travelers.

Nevertheless, this project aims to guide EU Gen Z solo travelers toward more sustainable journeys. Since most travelers are classified as Type A - Life Explorers, it is crucial to transition them from Type A to Type B to align with the project's intention, as illustrated in Figure 14.

This raises the question: [Why is catering to the needs of Type A users perceived as the strategy for establishing the design direction in the early phase rather than other persona types?](#)

Referring to Norman's insights (2004), designers can significantly improve user retention in application design by providing personalized recommendations and customized services that align closely with users' interests. This approach enhances user satisfaction and nurtures long-term engagement with the product. By studying different personas, I can develop more tailored and effective guidance towards sustainability. This project specifically means focusing on the needs of Type A users.

Hence, key solution-based directions satisfying Type A needs are listed below.

Solution-based Direction: Type A Persona- Life Explorer

- [How can travelers easily connect with locals through food during their trips?](#)

- [How can travelers find budget-friendly local options that also support the community?](#)

- [How can travelers uncover authentic experiences known by the locals in a city?](#)

Following the needs of Type A users, a crucial question arises: What is the connection between locality and sustainability?

As the Literature Review outlines, sustainability encompasses three economic, social, and environmental pillars. Encouraging EU Gen Z solo travelers to explore local areas aligns with these pillars in several beneficial ways.

In the economic aspect, exploring the locality supports local businesses and creates jobs, thus promoting economic sustainability (Churchill Northern Studies Centre, 2024).

Regarding the environmental aspect, local exploration reduces the environmental impact by encouraging low-carbon travel options like walking and biking, which have significantly smaller carbon footprints than other transportation forms (Ritchie, 2023).

Socially, engaging with local traditions and sites helps preserve cultural heritage (Dattani, 2024). Moreover, this approach educates travelers on responsible tourism, mitigates over-tourism, and fosters community connections (Francis, 2017; Possamai, 2022).

By integrating these aspects into the travel experience, Gen Z travelers enrich their journeys and contribute significantly to sustainable development.

That reason created this transition. Hence, the following section- Design goal and criteria were developed and presented to achieve this shift effectively in the next section, providing a clear and integrated overview.

3.10 Design Goal & Criteria

Design Goal: Assisting EU Gen Z solo travelers to explore the locality

The design goal is to follow the needs of Persona Type A-Life Explorer. To help EU Gen Z solo travelers explore the locality. Therefore, to check and evaluate if the design or service fits the design standard, not only was the design direction discussed, but the design criteria were also designed according to the points the participants highlighted in the interviews. Then, those integrated points were listed as criteria for the design direction.

Design Criteria: The criteria were formulated based on seven key pillars by the literature review and the analysis elicited from the in-depth interviews. Hence, to clearly explain what the pillars included in the Design Criteria, each selected pillar for specific reasons detailed below:

- **Convenience:** Literature frequently mentions convenience as a highly valued aspect. Most users often rated convenience as a top priority in transportation, making it a crucial pillar in our design criteria.
- **Affordability:** Although not ranked by participants, affordability is the most explicitly mentioned factor, with 7 out of 10 participants highlighting the importance of cost. Therefore, affordability is a key pillar.
- **Eco-Friendliness:** Due to the emphasis on eco-friendliness in this project, concepts specifically required to be eco-friendly for the local community and environment are required. Hence, this is a critical standard in our design.
- **Locality:** This pillar assesses how the idea benefits the local economy. Concepts should support the

local community or municipality, ensuring they contribute positively to the local area in social, economic, and environmental aspects.

- **Authenticity:** Analysis shows that our target users highly value local authenticity. To ensure EU Gen Z solo travelers can experience genuine local culture, authenticity is included as a pillar to estimate if this helps solo travelers understand local features.
- **Comfort:** Users value the comfort provided by an idea, not only the convenience but also comfort. Therefore, comfort is also included in one of the design criteria.
- **Safety:** The design must be safe for travelers, without risks or dangers. Safety is a key concern highlighted in the literature and emphasized by our target group, making it a vital pillar.

After explaining why these pillars were selected, it is important to note that the purpose of establishing the design criteria at this stage is to clarify the importance of evaluating ideas after the design phase. This ensures that each concept aligns with the key values identified, guiding the design process toward solutions that meet user needs and project goals.

3.11 Discussion of this chapter

The qualitative research study began in this chapter to answer the main question and sub-questions from the previous chapter. This chapter aims to deepen understanding through structured interviews, and the interview structure was based on the categories from the literature review, guiding the creation of an in-depth interview guide.

After collecting rich data from 10 randomly selected participants and analyzing it to identify key themes, the identified themes were further explored using various analysis and synthesis methods, such as scale visualization, coordinate and quadrant analysis, and persona development. This process allowed for analysis from multiple perspectives, fostering a deeper understanding of target users' perceptions.

Through this qualitative research, I observed that participants highlighted several important values when traveling in the city, including convenience, flexibility, and affordability. Many particularly expressed sensitivities toward their travel expenses, especially when traveling alone.

Additionally, the analysis showed that most EU Gen Z demonstrated an understanding of sustainability, as mentioned in the Literature Review. In the qualitative research process, I observed that their concerns mostly focus on environmental aspects, revealing constraints and their perceptions of considering the service or design itself. One common concern is that products labeled with ethical values were often perceived as unaffordable, inflexible, and inconvenient.

Such perceptions explain why their conversion to actions aligned with ethical aspects, such as sustainability and responsibility, was comparatively low. Based on the insights gathered, the design goals and criteria were established. These goals were aligned with the needs of Type A persons, who represent the major expectations of EU Gen Z, as referenced in Norman's insights (2004). The next chapter will begin with a brainstorming session, generating ideas that follow Type A's solution-based directions and exploring potential solutions.



4

Ideation Portfolio

This chapter presents a portfolio of 10 concepts focused on assisting EU Gen Z solo travelers in exploring localities. It serves as the stage where the ideas were diverged and explored.

4.1 Method Setup of this chapter

Setup aim

This chapter aims at diverging the ideas by following the converged directions from the previous chapter and then applying them to the creative session, brainstorming with the students with design-related backgrounds to diverge the idea possibilities. Therefore, before introducing how the creative session starts, the recap is introduced first to give the readers a fundamental understanding of what questions will be answered in this chapter. Recap about the last chapter: The design direction tends to guide the Persona Type A-Life Explorer moves to Persona Type B-Nature-Culture Enthusiast; there are three solution-based directions generated according to Life Explorer's needs, which are

- 1- How can solo travelers easily connect with locals through local food during their trips?
- 2- How can solo travelers find budget-friendly local options supporting the community?
- 3- How can solo travelers find local, authentic experiences in a city?

To brainstorm the ideas generating the solutions for these gathered questions from Persona, the creative session was designed afterward.

4.2- Creative session (Brainwriting with Post-its): As mentioned, this session aims to brainstorm ideas for solutions. This session was conducted with designers to generate innovative concepts. The brainwriting method was chosen for its advantages. Specifically, brainwriting is an inclusive idea-generation technique that ensures everyone has an equal opportunity to contribute and express their ideas (Lucidchart, 2019). The session was facilitated following the structure suggested in the Center for Applied Imagination's video (2013). This structured approach encourages participants to explore a wide range of ideas collaboratively before refining and developing the most promising concepts. The detailed execution process will be elaborated in the following section.

4.3- Concepts: After the creative session, 10 concepts were generated and integrated. Selecting 10 ideas ensures a diverse ideation portfolio, offering various perspectives and solutions. This diversity helps identify the most effective and innovative ideas while considering different aspects and possibilities for the project. Each concept includes a figure and provides detailed explanations to interpret the ideas clearly. These explanations cover the concept description, involvement of locality, usage, and context. The definition of each category is explained below,

- **Concept description:** It introduces the main idea behind the design concept, its purpose, and how it functions in a shorter description as an introduction. This category mainly provides a concise overview of what the concept entails. The concept description introduces what the concept is about.
- **Usage:** This category explains how the design concept is utilized by its target audience. In this case, it would be EU solo travelers and local hosts or guides. Meanwhile, this part clarifies how users utilize the services, such as registering and accessing resources or services.
- **Context:** This part provides the background and framework for interpreting actions and decisions within a particular scenario, which helps readers understand how the users react under certain circumstances

with the concepts.

- **Involvement of Locality:** The concept relates to several aspects of locality involvement. Moreover, the locality involves various aspects of local life, such as people, shops, cultural sites, and natural attractions. Hence, to clearly guide the readers in understanding what aspect the concept involves, this part is important to be elaborated.

4.4- Discussion of this Chapter: After the concepts were elaborated, this section summarizes the overall process of the ideation session and highlights the key takeaways. It also briefly introduces the next steps for evaluating and validating the concepts in the following chapter.

4.2 Creative Session

The analysis of the in-depth interviews helps to define the Persona. Subsequently, through the persona, the needs of the selected group of users are clear in defining what issues I, as a designer, need to solve. This led to the question: How should I avoid subjectivity and generate obvious and beyond-obvious ideas? Hence, I held a creative session to brainstorm ideas with other designers. The method I selected by referring to the book “Road Map for Creative Problem-Solving Techniques,” and the method of brainwriting was selected to generate ideas with the design background students. This session aims to increase the variety of ideas and enhance their quality, generating the obvious ideas or the ideas beyond the obvious level. Firstly, Figure 15 shows the setup for participating designers (Detailed Presentation can refer to Appendix 7)

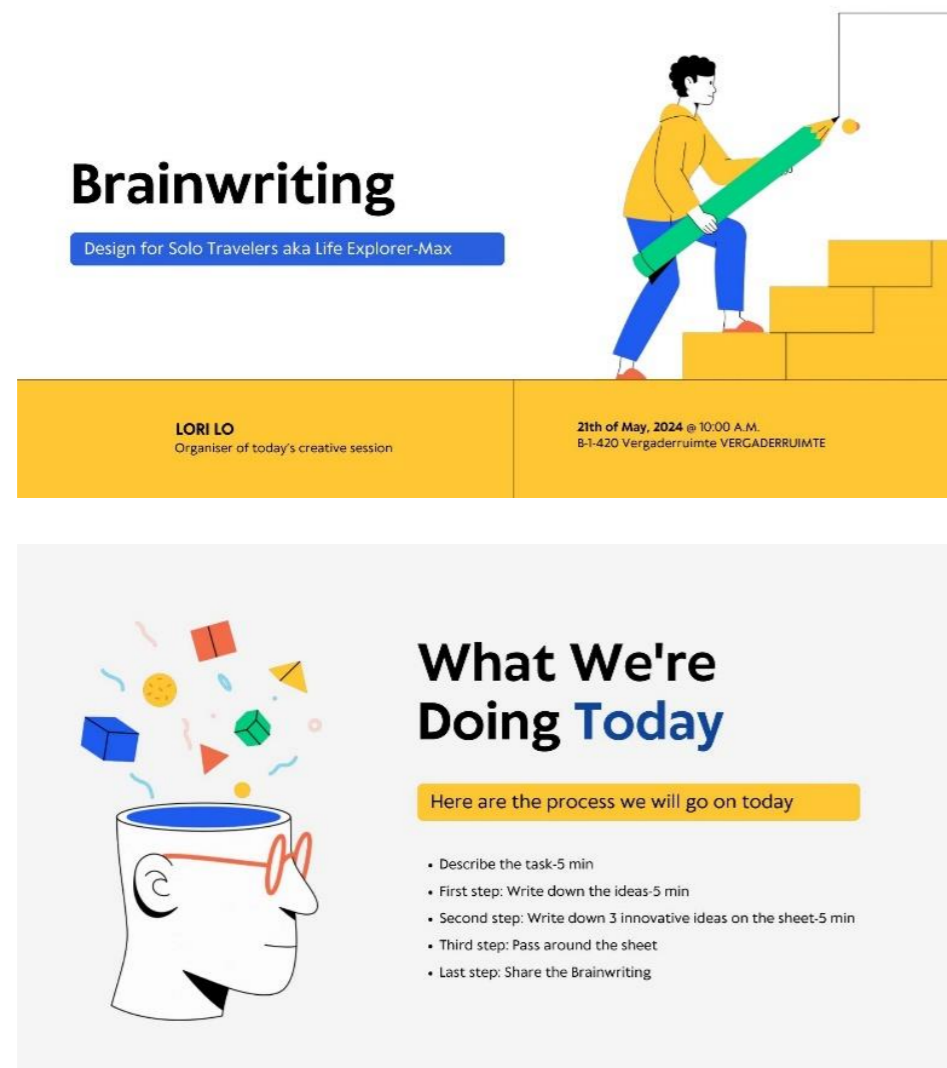


Figure 15- The presentation provided as the workshop guidance

As mentioned, the presentation was prepared during the session to provide participating designers with clear steps of what to follow, who they are designing, and what to do next.



Figure 16- Brainwriting session

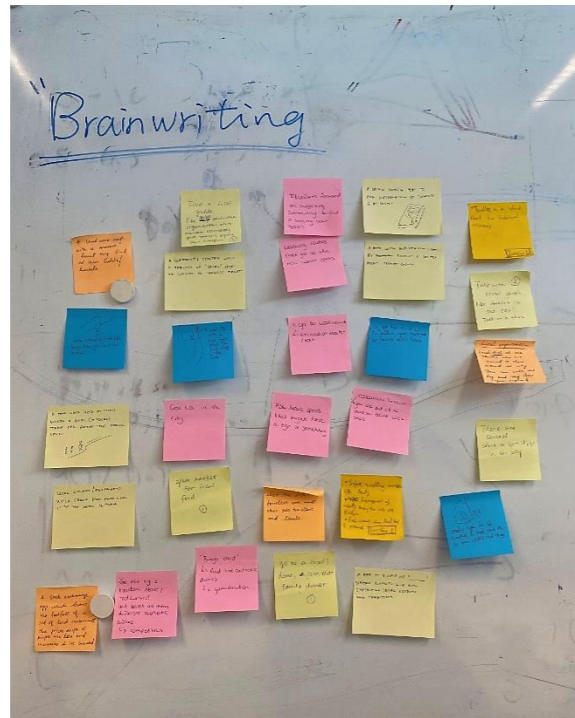


Figure 17- First round of the ideation process

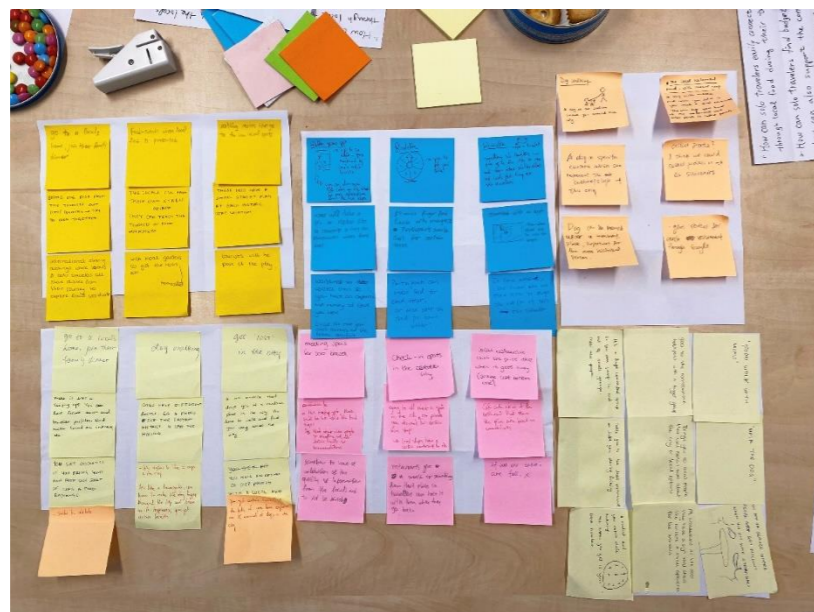


Figure 18- Second round of ideation- with 3 innovative ideas proposed per person, how others shape the ideas

After the creative session, guided by three main questions, such as design direction, various ideas were generated, and I observed five distinct directions of the ideas. Each category focuses on fostering interactions with various aspects of localities. The five directions are:

1. **Local Food and Diet Experience:** Ideas in this category focus on improving chances for target users to explore and enjoy the local cuisine, providing travelers with authentic dining experiences that connect them to the region's culinary traditions.
2. **Bonding New Interactions within the Local Community and People:** This aspect of ideas aims to

facilitate meaningful interactions between travelers and residents, fostering a sense of community and a deeper cultural understanding of the city.

3. **Updated Instant Local Information Using Technology Applications:** This category includes ideas that leverage technology, such as apps or trackers, to provide travelers with real-time information about local attractions, events, and other points of interest while exploring the city.
4. **Local Event Experiences (Seasonal):** Ideas related to this aspect focus on engaging travelers with seasonal local events, allowing the target users to participate in and enjoy festivities unique to the region and time of year.
5. **Clue Discovery Through Interaction Within the City:** This category includes ideas encouraging travelers to explore the city through interactive activities, such as treasure hunts or guided tours that reveal hidden places and lesser-known locations.

From the idea categories as strategies, I learned how designers envision concepts to satisfy the needs of the selected Persona, Type A - Life Explorer. These concepts aim to enhance the traveler's experience by ensuring rich and diverse interactions with the localities they visit. The following concepts were integrated from insights extracted during the creative session.

4.3 Concepts

Several ideas were generated and brainstormed through creative sessions, as mentioned.

To make the concept details more integrated for understanding, each concept contains a figure with four categories: **concept descriptions, usage, context, and the involvement with the locality** detail per concept. Some concepts contain **sub-concepts**, which can be introduced under the corresponding concept for better association. Meanwhile, some points are introduced initially for readers before diving into the concept content.

1. The target user group is EU Gen Z solo travelers; the common design goal is to increase the interactions between EU Gen Z solo travelers and the locality in the city
2. To ensure the understanding of the subject in the sentence is not confusing for reading, the following description will use "he" when describing a solo traveler's actions.
3. Specifically following what Persona Type A- Life Explorer requirements to design, the reason for specifically following Life Explorer's needs to design can refer to the analysis elaborated in Chapter 3- Qualitative Research Study.
4. Sub-concepts are introduced after the main concept, which presents the flexible changes from the original concept.

Concept 1-Dine & Meet

Concept Description: This shared app design allows solo travelers and locals to interact and join family dinners at local homes, aiming at matching solo travelers with local families. Both parties can browse each other's profiles to learn basic information and be matched based on similar interests. Solo travelers pay in advance at a price lower than regular restaurants. If the solo traveler brings a representative dish from his country to share with the local family, he can receive a discount. The service mode combines Airbnb and dating apps to match solo travelers who intend to join the dinner with a local family willing to host solo travelers.

Usage: This app is designed to be used by two main parties: solo travelers and local people or families willing to host solo travelers for meals.

Below are the detailed steps for both solo travelers and locals to describe how the app works:

- **For Solo travelers**

1. Use the app to browse the location of local families before departure or on the same day
2. Pick the date and time to eat together
3. Solo travelers can specify the ingredients they are allergic to on the app in advance to avoid food allergies and other issues
4. Arrive at the designated location and interact with the locals on the specified day.

- **For Local people or local families**

1. Post the available dates, times, and the number of solo travelers they can host on the app in advance.
2. Moreover, they can share the planned dishes they intend to prepare on the app beforehand or photos of dishes they have made in the past for solo travelers to refer to.

Context: A solo traveler who is curious about what locals eat saw the advertisement promoted on Instagram that he can enjoy having dinner cooked by a local family, which only charges a small amount of fee if he brought the representative food from his hometown or country. He could get another discount. Hence, he decided to try this service when he travels to another country. Then, he uses the app to find local hosts and arrange a meal, enhancing the travel experience by dining with locals.

The involvement with the locality:

- Solo travelers specifically can enjoy the comparatively cheaper price of local food and have opportunities to make friends with the local family or people.
- This design allows locals to meet new foreign and international friends, helps generate additional small income for local families, encourages efficient use of local food for the local family, and reduces food waste.

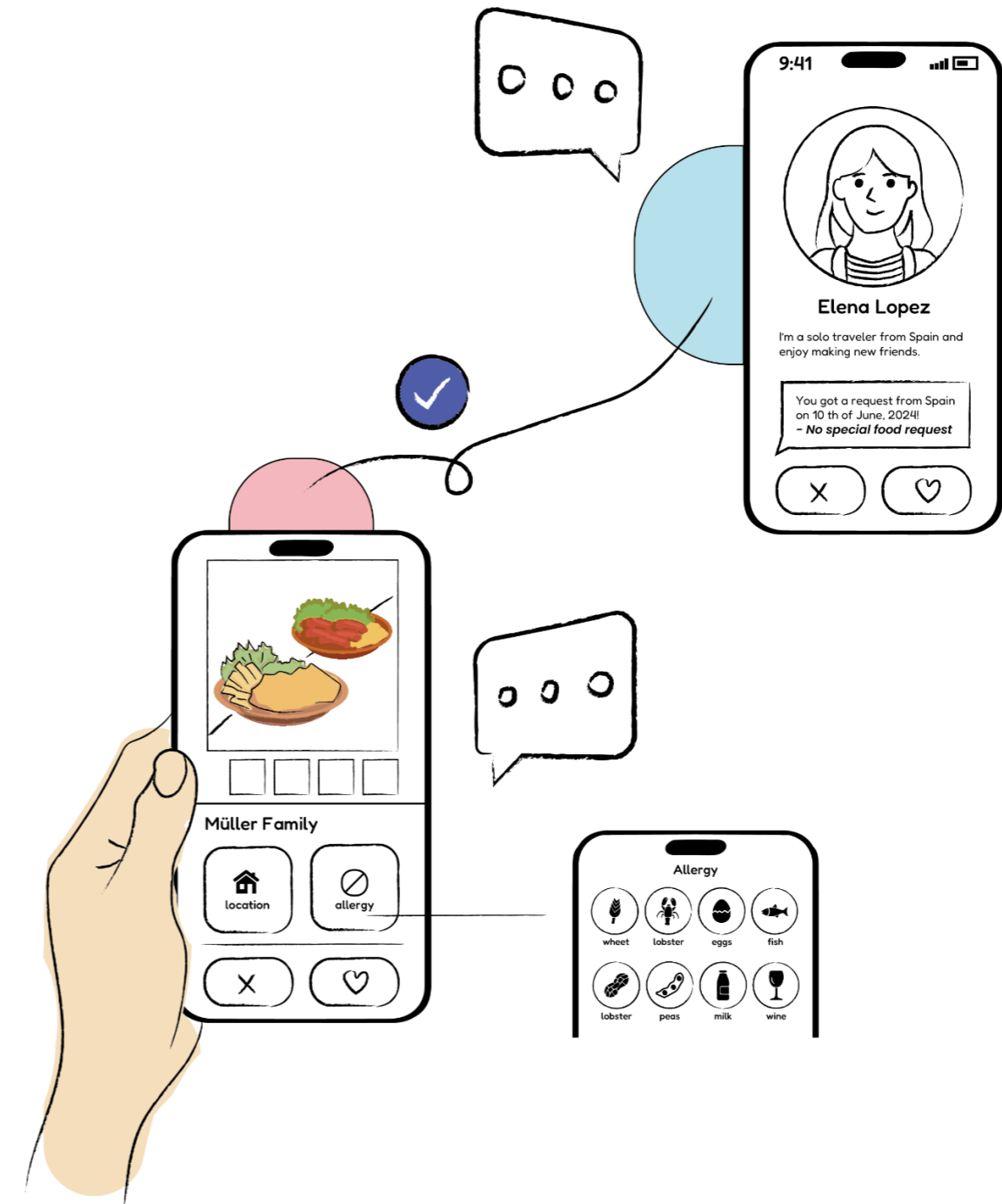


Figure 19- Concept 1 visualization

Concept 2-Lost with the Taxi

Concept Description: This concept aims to allow solo travelers to explore surprising locations recommended by locals in the city by randomly pairing up. Using shared taxis in the city as a medium to carry the solo travelers together at the beginning of their journey. Then, each solo traveler is assigned a booklet to record the local attractions and shops they visited during the journey. The more locations they visit, the more local discount vouchers they can exchange at the city hall.

Usage:

From the user's perspective, this service is designed for those with flexible schedules who wish to experience the city in depth but gain some unexpected surprises.

1. When the solo traveler arrives in the city, he can flexibly join this service for a fee lower than public transportation, sharing a taxi with others to a designated location.
2. The shared taxi service collaborates with the municipality and local volunteers to guide solo travelers who travel in the city.
3. Then, he will be randomly paired with local volunteers at the designated location and receive a booklet. The booklet is designed for solo travelers to record the attractions and shops they visit.
4. Each time he visits a location, he gets a stamp from the place he visited in the booklet. Once the solo traveler accumulates a certain number of stamps, they can exchange them for discount vouchers at the city hall.

Context: When the solo traveler arrives in a new city and is unsure where to go, he can register to take a shared taxi for the surprising city tour, which carries the other solo travelers with flexible plans and is still indecisive about where to go. Then, the taxi will take all registered participants to a designated meeting point, where those solo travelers will be paired with local volunteers. These volunteers will then lead them to visit various local shops and historical attractions within the city. Once accumulated more than a certain quantity of local locations in the city, he can earn small discounts on local purchases.

The involvement with the locality: municipality, local volunteers (local people), local shops

- Solo travelers can flexibly pair up with local people, which increases the opportunity to make new local friends.
- Local stores can increase their exposure and market their stores by the booklet through collaboration with the municipality.

Sub-concepts:

1. An app design can replace the paper format to reduce paper waste. This satisfies part of EU Gen Z who enjoy getting immersed in technology. Following the app design, this app also combines the functions of updating current data within the city, such as promoting less popular locations, like niche places, or unique events happening in the city, leading solo travelers to explore more interesting activities happening right at the moment in the city.
2. The app can also incorporate AR features that bring local stories and hidden facts to life as travelers explore various locations. For example, historical information or surprising elements could pop up when a traveler scans a landmark with their phone.

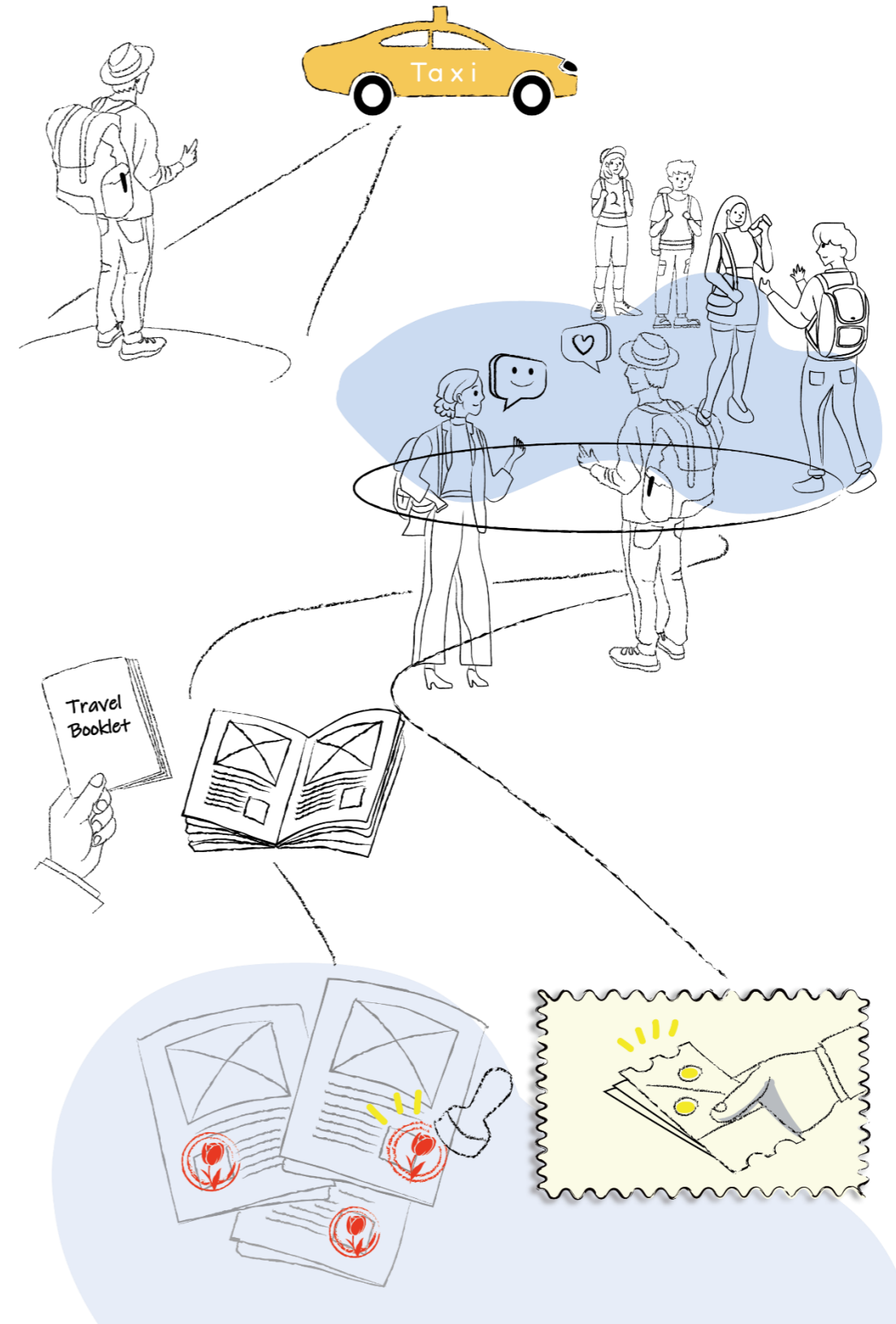


Figure 20-Concept 2 visualisation

Concept 3-Local Buddy Tours

Concept description: This exploratory travel mode caters to solo travelers who are also dog lovers. In this service, solo travelers are guided by dogs to discover the city's sights. Each dog has a unique personality and a designated route, allowing users to choose the type of route they prefer and walk with the corresponding dog responsible for that route.

Usage:

1. Solo travelers can register at a trained dog center to explore the city with a dog.
2. Then, he rents a dog and specifies the rental duration, for example, 4 hours. (4 hours is the maximum of service hours)
3. Based on his preferences, he can select the type of route he wants to follow, such as historical sites, natural scenery, or only shopping in the city etc. In addition, the corresponding dog will then guide them to visit places matching their interests and preferences.
4. Thereafter, along the way, If the dog needs to urinate, there are designated pet-friendly areas along the route within the city

Context: When a solo traveler, who is also a dog lover, arrives at the central station, he notices a promotion for a dog-walking service at the tourist information office. He is intrigued by this unique experience, so he decides to try it out. He walks to the nearby trained dog center, chooses the historical route, and pays the fee for the service. The staff hands him a beagle and provides snacks to feed the dog while exploring the city together. After walking with the dog, he finds some spots for dogs to relieve themselves due to clearly marked pet-friendly rest areas along the route in the city. Walking with a dog allows him to explore the city on foot slowly and observe the city's details.

The involvement with the locality: This service involves various stakeholders in the city, like residents, businesses, and tourism organizations, to encourage sustainable tourism. It enhances interactions between locals and dogs, creating an animal-friendly city and community. Additionally, it provides systematic dog training, reducing the number of stray dogs. This service attracts solo travelers and dog lovers to explore the city, encourages users to walk more, promotes a healthy lifestyle, facilitates interactions, and fosters a sense of community between travelers and locals.

Sub-concepts:

1. Use diverse types of dogs to represent the route difference based on the dog's traits; for example, a Beagle will lead travelers to the historical places and buildings in the city; the Shiba Inu will lead travelers to the natural places, like gardens or natural landscapes; Border Collie takes the solo traveler to outdoor adventures in the city. The routes include designated areas for dogs to relieve themselves.

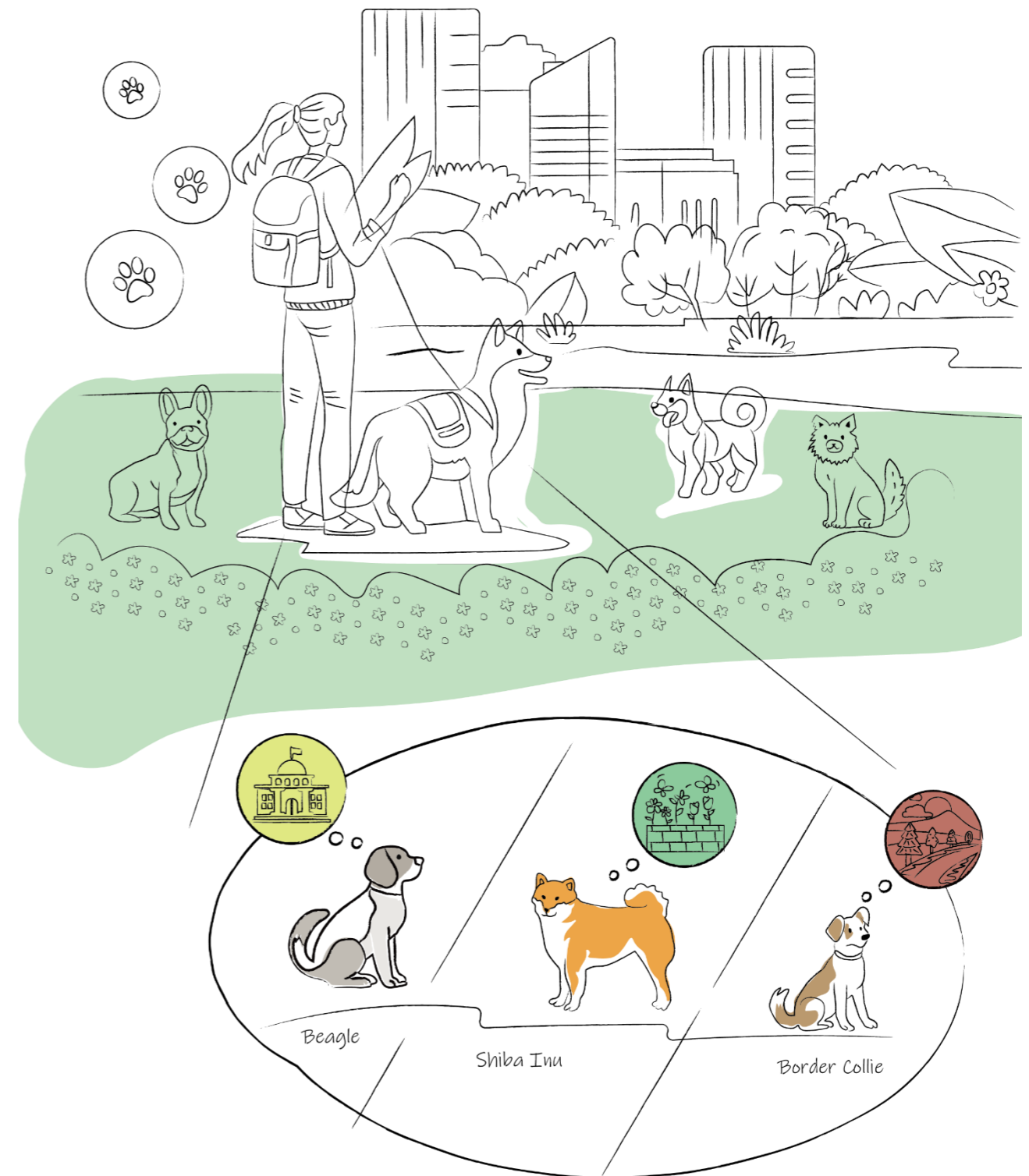


Figure 21-Concept 3 visualisation

Concept 4-Tamagotchi Digital Guide

Concept Description: The Tamagotchi guide is a wearable device designed for solo travelers to use during their journeys and aims to promote local attractions within a city. Solo travelers can explore the city using a Tamagotchi digital guide, which directs them to different attractions to complete daily check-in missions. Tamagotchi is a portable electronic device featuring a digital "pet" that requires care from its owner, which saw significant popularity during the 1990s (Wikipedia contributors, 2024).

Each of the three routes offers different surprise items, and users can choose the route that suits them best. Completing all the routes in the city will reward the traveler with a special gift. Additionally, the device tracks the number of steps walked during the journey. Upon reaching 10,000 steps in a day, the traveler will be notified of a special reward, such as discounts at local stores, souvenirs, and exclusive decorations for their Tamagotchis.

Usage:

Tamagotchi Digital Guide

1. Each Tamagotchi contains three buttons, A, B, and C, representing travel routes that include landmarks, natural landscapes, and surprise routes.
 2. The device generates a series of tasks for players along each path, such as scanning at specific locations with the wearable device or visiting landmarks; User can flexibly switch the route type
 3. The device counts the steps travelers walk per day. When a solo traveler decides to purchase a Tamagotchi guide, he can wear it and follow its instructions to complete their day tours in the city.
- For the solo traveler,
1. Choose a route to follow based on the instructions shown on the wearable device.
 2. By completing each task, they earn growth points for their Tamagotchi, gradually unlocking new abilities and items.
 3. Completing all three routes in a day will reward the player with limited edition items. Latest items are introduced daily and reaching 10,000 steps allows the traveler to obtain the daily item.

Context: A solo traveler arrives in Amsterdam and buys a Tamagotchi digital guide from the tourist information office. This guide offers three routes: leisure activities, famous landmarks, and natural landscapes. He starts his day by selecting the leisure route based on his vacation purpose. Then, he begins his trip in the city with the Tamagotchi guide. The solo traveler's first task is to visit a local café in Jordaan. He scans the café's QR code with his wearable device and earns growth points for his Tamagotchi. Next, he heads to the Nine Streets shopping district, where he takes a photo at a famous canal bridge, unlocking a new accessory for his digital companion.

Switching to the landmarks route, the solo traveler visits the Rijksmuseum. He scans his device at the entrance, receives historical insights, and explores the art exhibits, earning more points and a special museum-themed decoration for his Tamagotchi. Then, to end his day, the solo traveler chooses a natural landscape route, walking through Vondelpark. He reaches 10,000 steps then he gets the notification of a special reward: a discount of 10 euro at a local souvenir shop. The solo traveler collects his reward, completing his adventure with unique experiences and added items for his Tamagotchi.

The involvement with the locality: This process involves promoting collaboration between local businesses

and municipalities while marketing cultural landmarks. Encouraging local businesses and communities to collaborate with the municipality helps promote them through the digital device, thereby promoting a variety of local landmarks in the city.

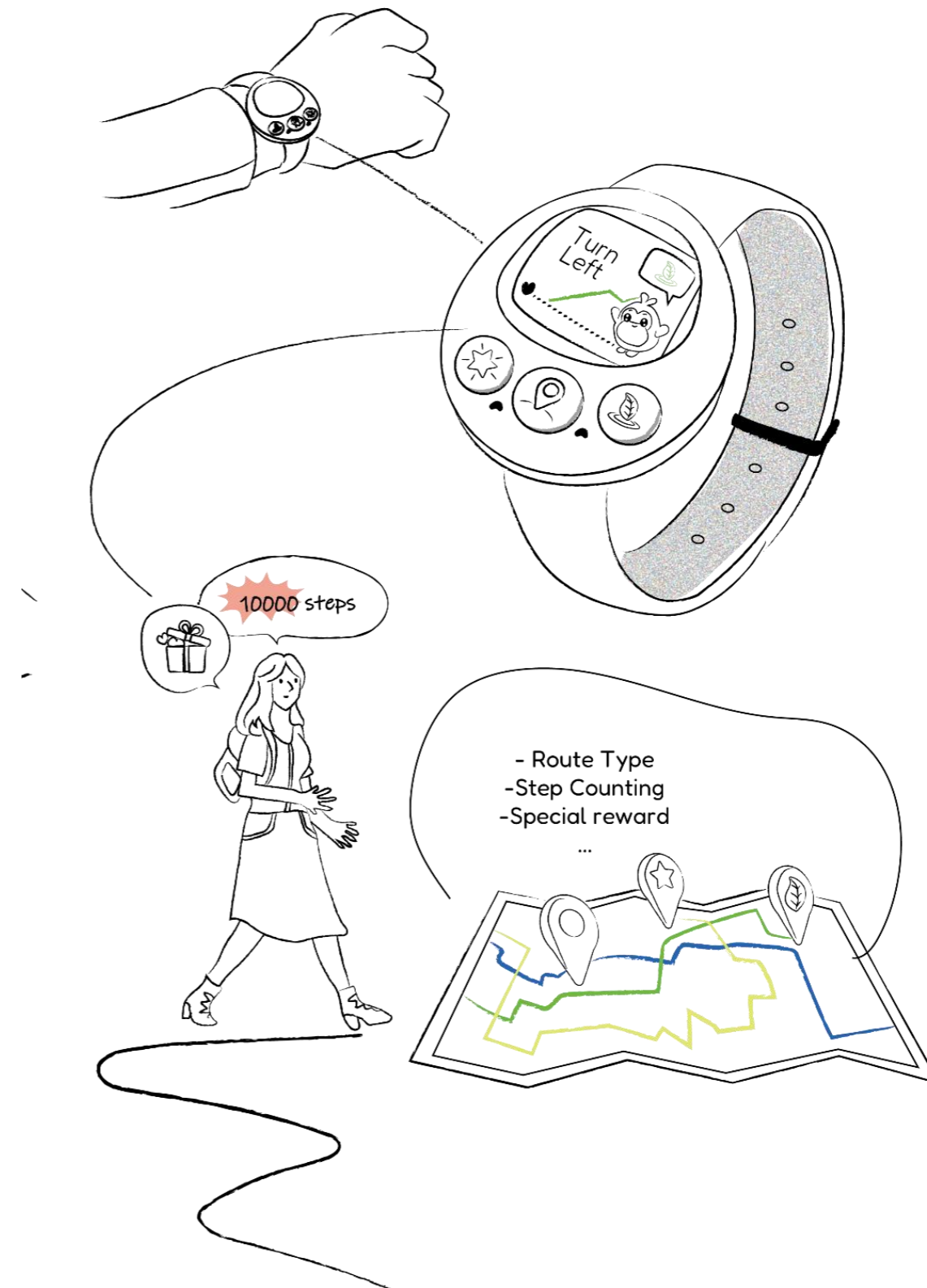


Figure 22-Concept 4 visualisation

Concept 5-Food Roulette

Concept Description: This concept is designed for restaurants to offer a roulette service at specific times daily or weekly. The service is announced on both social media and in places frequently seen by travelers. It allows solo travelers to join other solo travelers and locals' meals together randomly, fostering new friendships and increasing opportunities for fun social interaction.

Usage:

1. Solo travelers arrive at the restaurant before the designated time to register for participating in the activity.
2. Once the activity begins, participating solo travelers and local people spin the roulette wheel.
3. After the wheel stops, participants follow the number they received on the roulette wheel and proceed to the corresponding table, sitting together and eating.

Context: A solo traveler is exploring the city and is uncertain about what to do next. As he wanders, he comes across a local restaurant. Then, his curiosity makes him walk inside. Coincidentally, he arrives just as an activity is about to begin. When the activity starts, he turns to spin the roulette wheel. The number indicated on the wheel dictates his seating arrangement at a table. Once seated, he begins ordering food and chatting with residents and other solo travelers gathered at the table.

The involvement with the locality: This service model enhances interactions between locals and solo travelers, creating an engaging, friendly, and interesting dining experience. It provides a unique opportunity for people to meet and connect and serves as a platform to showcase the restaurant and its local cuisine. Participants in this game are encouraged to explore the local food culture with residents. Further, the feedback and recommendations shared by participants contribute to increased exposure and potential repeat patronage of the restaurant.

Sub-concepts:

1. Local restaurants combine their local dishes by incorporating them into a roulette wheel. Each dish is assigned a corresponding number on the wheel. Solo travelers are unaware of which dish they will receive until they roll the roulette in the restaurant. Upon determining the outcome, they select their meal based on the roll's result.
2. Exclusive offer from the restaurant: Local restaurants can tailor set meals for groups seated together, offering special discounts on selected dishes for participants who join the game. Alternatively, they may provide a wider range of local delicacies at discounted rates for participants to choose from.

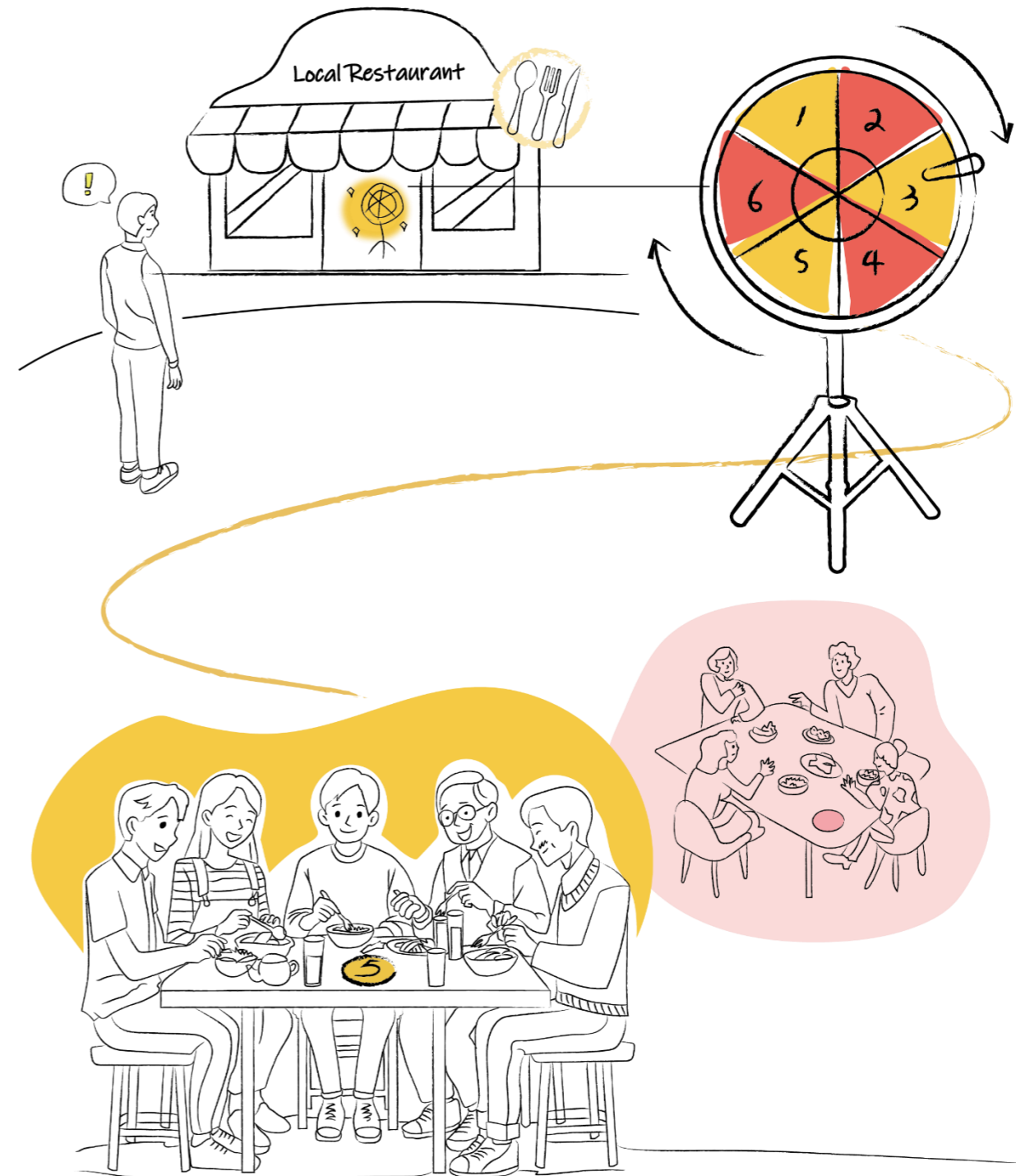


Figure 23- Concept 5 visualisation

Concept 6-Let's meet up and go

Concept description:

This concept serves as an add-on for existing tourist information services, acting as a central hub located in transit spots like train stations or tourist offices. It facilitates city information exchange and fosters interactions among locals, solo travelers, and other visitors within the city.

Visitors will find a bulletin board with a large, detailed city map, showcasing key attractions and landmarks. Residents and past travelers recommend locations by placing pins on the bulletin board, each pin providing detailed information about the corresponding spot. There are three types of pins with distinct colors: one color represents what past the solo traveler other travelers generally recommend going; another color represents what locals recommend, and the other represents official recommendations from the tourist office or city guides. Besides, this spot occasionally allows solo travelers to pair up with other solo travelers or travelers together to explore the city as occasional surprises, further enriching the experience for all involved.

Usage: On the bulletin board, each pin on the map has a small tag with the business's name and photo on one side and a QR code with information on the other. Local businesses can register with the municipality and participate in categorizing their services.

Solo travelers can collect the paper as a souvenir and use the provided rope next to the bulletin board to string it together.

Context: When the solo traveler exits the station, although he already decided where to go before departure, he still wants to get an overview of the city. Therefore, he walks to the tourist information center and sees a bulletin board with a city map pinned with various local businesses and travel information. As he considers it, he notices some local volunteers standing by to help other travelers and others who are also checking where to visit first. Thereafter, he starts chatting with them naturally. During the conversation, he gets along well with the other travelers and decides to join them in exploring the city together.

The involvement with the locality: This provides local businesses with an opportunity to promote themselves, which contributes to enhancing the relationship between the government and local businesses, allowing travelers to quickly learn about the local attractions and see more options at once, rather than taking time to do research through Google reviews.

Sub-concepts

1. Local shops can also hang their shop information and seasonal discounts on the pins on the bulletin board in the assigned format for passengers to view. This enhances the coherence and convenience for travelers.



Figure 24- Concept 6 visualisation

Concept 7-Local Bingo Game

Concept Description:

This design encourages exploring the local food and attractions within the city, allowing solo travelers to discover and taste local specialties. This increases interaction and fun while deepening their understanding of local culture. The bingo card includes categories of local foods and attractions. Participants can collect stamps to complete the bingo card, with prizes determined by the number of lines they achieve. The bingo card is designed in a postcard to enhance familiarity and convenience for users. One side features the bingo card, while the other shows the corresponding categories' routes. This makes it easier to carry around and allows it to be used as a postcard once the journey is completed.

Usage:

1. Firstly, the solo traveler buys the city's bingo card. The bingo card introduces the special food in the city through icons on the postcards
2. Then, solo travelers can collect the stamp when they order the corresponding food in the city from the local stores or shops
3. After finishing a day traveling in the city, he can hand in the completed bingo card to the office to get the prize based on the completed lines in the bingo cards
 - Prizes: 1 line: small city souvenirs; 2~3 lines: special offer for some local shops or restaurants; 4~5 lines: free meal; full stamps: Grand Prize, such as a local hotel stay, a fully complimentary dining experience, or a high-value shopping voucher.

Context: After arriving at the destination, solo travelers purchase a bingo card postcard as a souvenir. Based on the routes on the postcard, solo travelers can follow the route suggested on the bingo card. While collecting stamps, participants can explore and taste local foods using this bingo card. At the end of their journey, they can bring the completed bingo card to the office to redeem prizes. After redeeming their prizes, they can send the bingo card as a postcard.

The involvement with the locality: This boosts the collaborations between the municipality and the local stores. Moreover, it helps market the landmarks the municipality intends to promote or attract solo travelers. Additionally, offering engaging food exploration activities enhances the city's tourism, appealing to travelers and drawing more visitors to experience its unique culinary delights.

Sub-Concept:

1. Applied for seasonal events: To reduce the overproduction problem of some fruits or vegetables, then the card can be full of the same vegetables

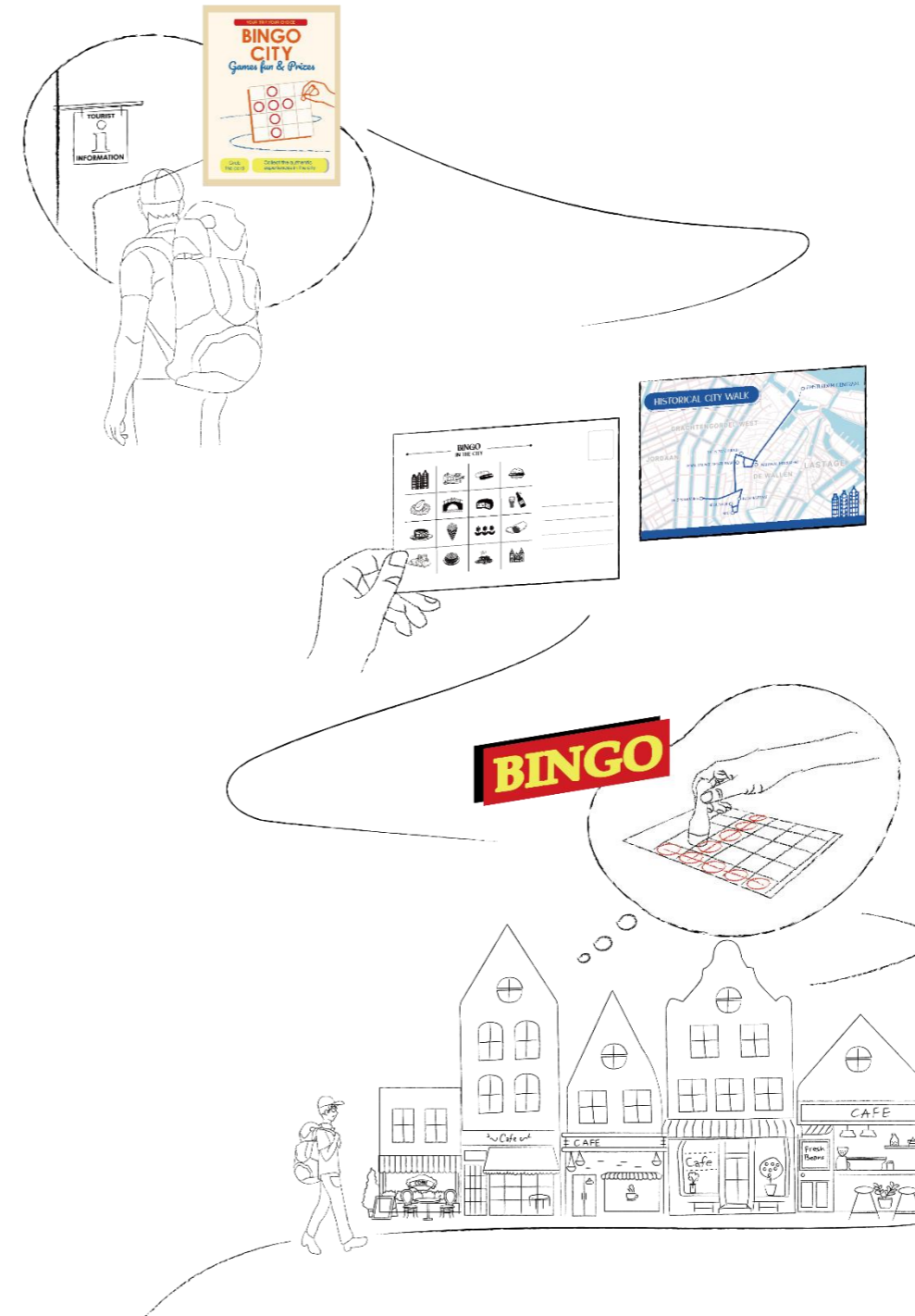


Figure 25- Concept 7 visualisation

Concept 8-Hidden Gems Collection

Concept Description: This concept introduces a city-based game where participants solve puzzles to explore the city's history, culture, and unique features. Through engaging gameplay, users are guided to discover landmarks and attractions, embarking on a journey to solve clues and uncover hidden gems. From the puzzle-solving process, they interact with locals, collect clue cards, and infer information along the route to deduce answers and find relevant places. Moreover, this process provides users with a structured and rewarding way to explore and learn about various parts of the city, enhancing overall participation experiences.

Usage: Exploring Hidden Gems in the City involves discovering unique locations, including popular spots and hidden places.

1. Initially, users receive a map card and can purchase a small purse to collect clue cards.
2. As they navigate to each location marked on the map, participants receive a paper card from recycled materials featuring a QR code with detailed information about the place they have reached.
3. Then, they collect these cards throughout their journey and put them together at the end, creating a comprehensive set of city exploration collections.

Context: Before a solo traveler started traveling, he had no concrete plans. Hence, he decided his destination when he arrived in the city. Upon arriving in the city, he came across a small poster advertising an interesting activity: a puzzle-solving adventure. Then, he eagerly signed up and purchased a small purse to house his clue cards and city map as he was intrigued by this game.

As he walked around the city, he eagerly gathered clues and solved puzzles, seeking assistance from friendly locals whenever he hit a roadblock. Along the way, he engaged with fellow solo travelers who were also partaking in the activity, forming unexpected bonds over their shared adventure. Together, they uncovered hidden gems and iconic landmarks scattered throughout the city.

After finishing his journey, he carefully put each clue card in his bag, treasuring them as reminders of his unforgettable experience. Now, these cards hold memories from his trip, serving as precious reminders long after returning home.

The involvement with the locality: This concept highlights the importance of marketing and promoting local attractions, culture, and history through an interactive game. Participants of this design engage with the city's history, culture, and architecture, fostering a deeper appreciation for its heritage. The game features landmarks and attractions boosting tourism, increasing foot traffic, and benefit local businesses and vendors by providing an educational and enjoyable experience.

Sub concepts:

1. Diverse route options: While Hidden Gems collection highlights popular city spots, it also promotes niche locations to prevent over-tourism. By designing puzzles that guide participants to these lesser-known places, we can encourage the exploration of unique areas.
2. Combination with the app: To reduce paper waste, we can develop an app in collaboration with different cities. This app will create digital memories for participants, providing an eco-friendly alternative to paper cards.

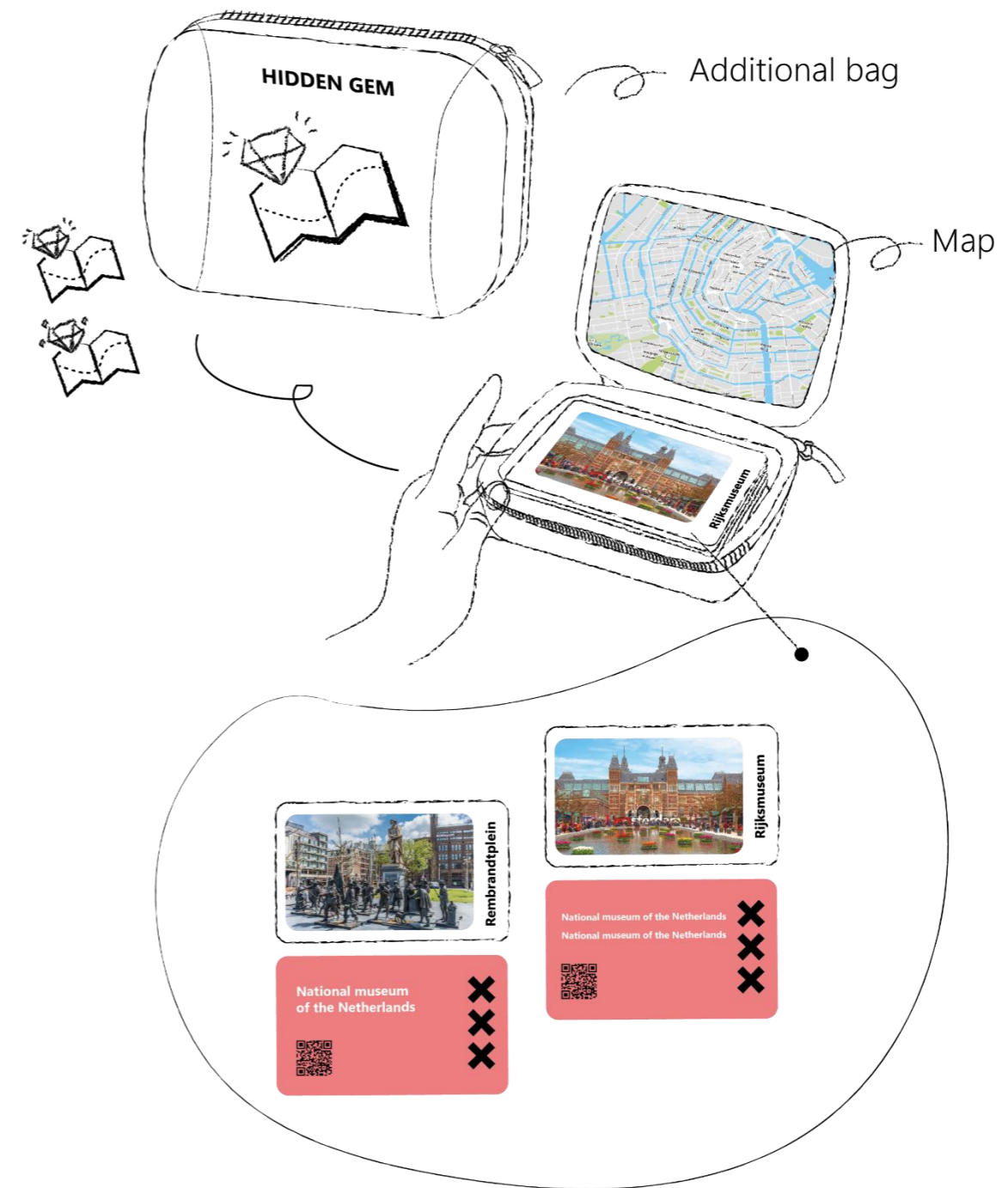


Figure 26- Concept 8 visualisation

Concept 9-Travel Mingle Pin

Concept Description: There are three types of pins for participants in the interaction game. One pin is specifically designed for solo travelers, enabling residents to identify them and help or engage in conversation. The pin features a simple and easily recognizable design and can be worn on clothing or attached to a backpack. Local residents who enjoy volunteering and interacting with solo travelers also wear a pin, making them easily identifiable. Additionally, employees of local shops wear pins to participate in the activity and assist travelers who get confused in the city.

This idea can boost collaboration between the local municipality and residents. The earning of this mode will contribute to the local maintenance and expenses.

Usage: For local businesses or volunteers, wearing this badge demonstrates their willingness to assist travelers, and market themselves meanwhile. For Solo travelers,

1. For those interested in purchasing a souvenir, the pin can be obtained at various locations throughout the city, such as tourist information centers, hotel front desks, or designated sales points.
2. Wearing the pin: Once acquired, travelers can wear the badge on their clothing or attach it to their backpacks, ensuring visibility during their journey.
3. Interaction moment: Upon seeing travelers wearing the badge, residents (or local volunteers) can easily initiate conversations with them.
4. If travelers encounter problems and require assistance, they can identify and seek help from locals who also wear the pins.

Context: When a solo traveler gets confused while considering public transportation options, he wears a solo traveler pin. Then, a local volunteer noticed the badge and proactively asked if assistance was needed. Thereafter, the local volunteer guides the traveler to his destination, which makes the solo traveler suddenly feel the residents' friendliness, enhancing his positive impression of the city.

The involvement with the locality: Firstly, this design fosters friendly interactions by involving solo travelers, local volunteers, and nearby shops to assist solo travelers in exploring the city. This collaborative effort enhances the travel experience and creates a supportive environment. Wearing the pin increases security, as it signals to locals to offer help when needed, boosting travelers' sense of safety. Additionally, these pins promote cultural exchange, enabling travelers to engage with residents and businesses, thus deepening their immersion in the local culture.

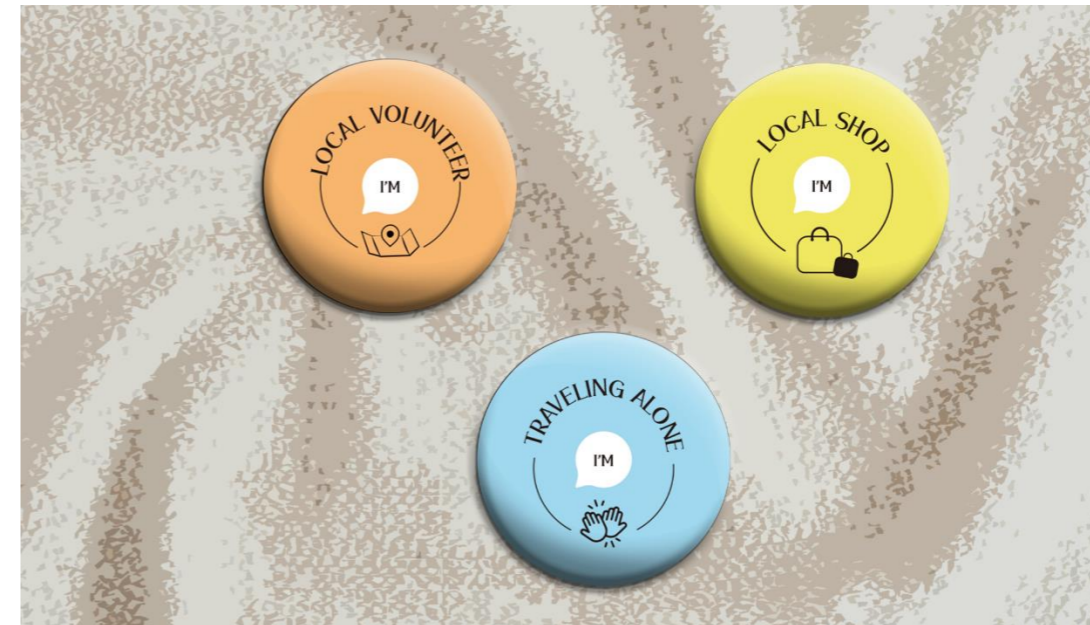
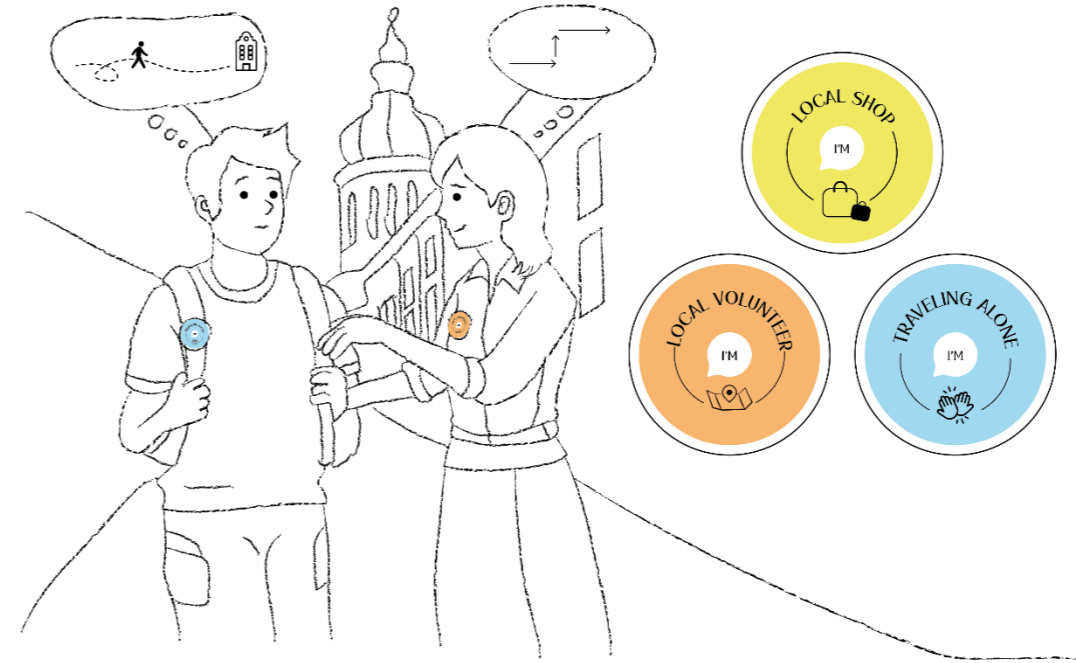


Figure 27- Concept 9 visualisation

Concept 10-a day in the life of “ _____ ”

Concept Description: This immersive activity allows tourists to experience local life by spending a day with a local family or individual. The goal is to provide tourists with a deep understanding, connection, and firsthand experience of local customs and traditions. This enhances cultural exchange and mutual understanding, making it ideal for solo travelers who enjoy slow exploration, relaxation, and fostering deep connections. Participants pay a fee to enjoy a day with locals. During peak seasons or city festivals, when accommodations are overbooked, the municipality can promote this service to alleviate the stress on the city's lodging facilities. This ensures a seamless and enriching experience for both tourists and locals.

Usage: To participate in the "A Day in the Life" experience, applicants can apply through various channels such as social media platforms, local tourist information centers, or accommodations reception desks.

1. Participants must pay the regulated fee in advance once the application is submitted.
2. Upon arrival at the designated meeting point, the matched local hosts will greet participants; the host can decide how many people they want to host daily.
3. Participating travelers will immerse themselves in local life throughout the day by engaging in various daily activities under a local family's or individual's guidance. The host designs these activities and may include cooking, participating in traditional customs, visiting local markets or landmarks, and more.
4. During the overall experiences, participating travelers can engage in meaningful conversations and interactions with locals, fostering a deeper understanding of the local culture and their way of life.

Context: One solo traveler stumbled upon a social media campaign promoting a unique opportunity to spend a day with locals before his journey. This idea suddenly attracted him. Thus, he promptly signed up for the service and selected a suitable day to participate. When he started his journey and arrived at the designated spot, he was warmly greeted by the host family, and they drove him to their home to start the day. In the morning, he enthusiastically joined the local family in agricultural activities, such as planting or harvesting crops, eager to learn about their farming customs and way of life. As lunchtime approached, under his hosts' patient assistive guidance, he prepared farm-to-table dishes, tasting the flavors of authentic local cuisine.

With a satisfied appetite, he started to explore more in the afternoon. Accompanied by his newfound local friends, he ventured into the picturesque countryside, marveling at its natural beauty and serenity. As the day drew close, filled with unforgettable experiences and meaningful connections, he bid farewell to the host family, returning to where their journey had begun.

The involvement with the locality: This concept provides local people with opportunities for additional income. Generally, it enhances the connection and cohesion between the community and locals. For solo travelers, this concept allows solo travelers to gain deeper insights into the local culture. Directly supporting local families or individuals by paying activity fees helps promote the locality's economic development. Face-to-face interactions provide opportunities for in-depth cultural understanding and respect among solo travelers and host families. Furthermore, participating in these activities also helps preserve and come down to local traditions and customs, allowing travelers to experience physical activity with spiritual interactions more profoundly.

Sub-Concepts:

1. Integration with AR: To further enrich the experience, this concept combines augmented reality (AR) technology through a dedicated app, offering real-time cultural insights and historical backgrounds as tourists explore the city.
2. The experience can be customized with themes, such as a "Traditional Cuisine Day" or a "Green Community Day," letting tourists comprehend specific aspects of local life.

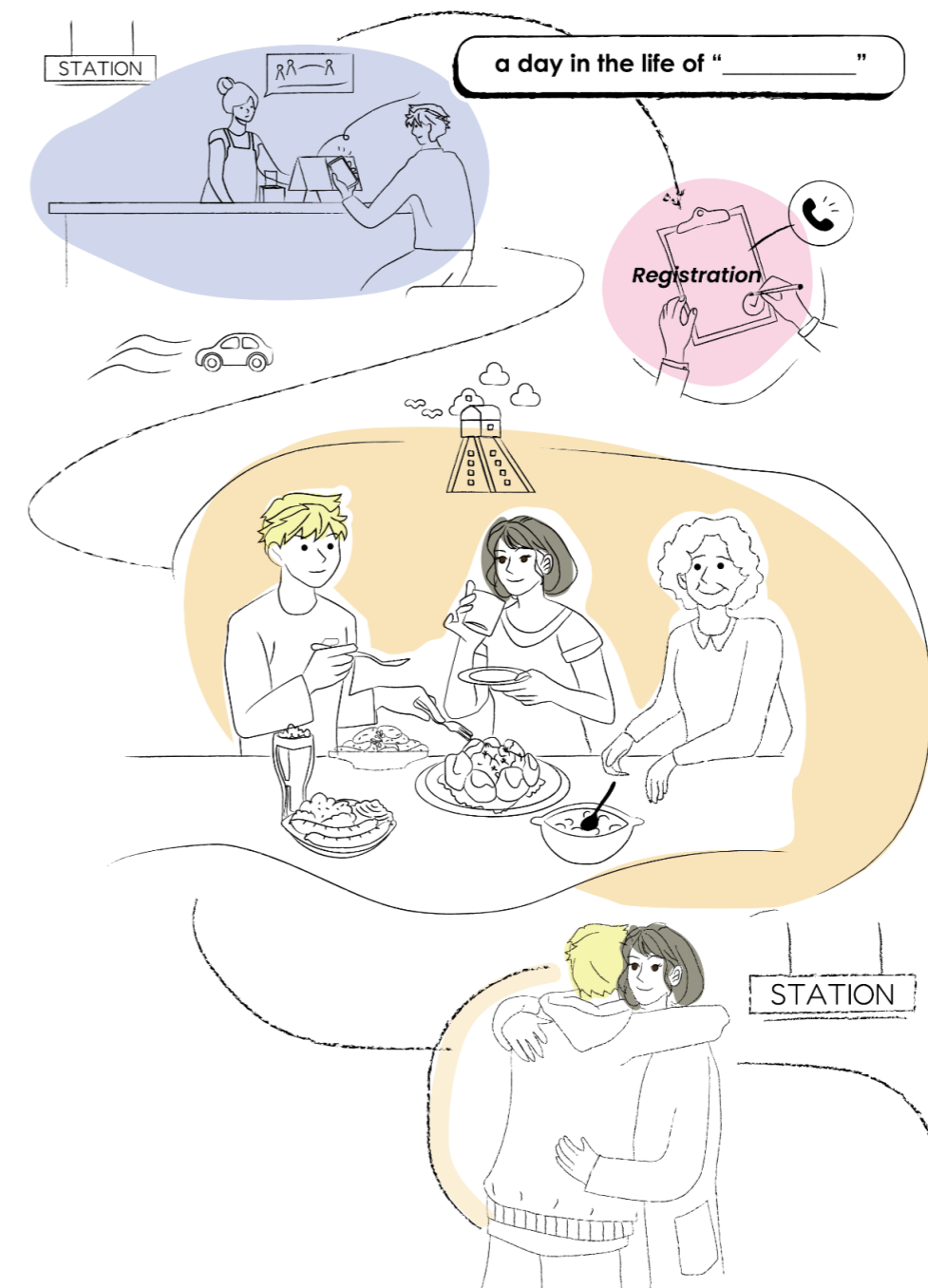


Figure 28- Concept 10 visualisation

4.4 Discussion of this chapter

Following the creative session with fellow designers at the beginning of this chapter, I categorized their solutions into five distinct directions to better understand the scope of each idea. These directions contain various approaches to exploring authentic experiences, being classified as follows: local food experiences, promoting meaningful interactions with locals and the community, updated local information via technology applications, local event experiences, and clue discovery through city exploration. This classification offers a clear framework for concept integration. Eventually, Ten distinct ideas were generated, each incorporating elements from multiple categories. Table 10 provides an overview of which concepts fall under each category.

No.	Category	Ideas
1	Local food experiences	<ul style="list-style-type: none"> • Concept 1- Dine and meet • Concept 2- Lost with the Taxi • Concept 5- Food Roulette • Concept 7- Local Bingo Game
2	Promoting meaningful interactions with locals (local people and community)	<ul style="list-style-type: none"> • Concept 1- Dine and meet • Concept 2- Lost with the Taxi • Concept 3- Local buddy tours • Concept 4- Tamagotchi Digital Guide • Concept 5- Food Roulette • Concept 6- Let's meet up and go • Concept 7- Local Bingo Game • Concept 8- Hidden Gems collection • Concept 9- Travel mingle pin
3	Updated instant local information using technology applications	<ul style="list-style-type: none"> • Concept 4- Tamagotchi Digital Guide
4	Local event experiences	<ul style="list-style-type: none"> • Concept 10- A day in the life of “_____”
5	Clue discovery through city exploration.	<ul style="list-style-type: none"> • Concept 2- Lost with the Taxi • Concept 3- Local buddy tours • Concept 4- Tamagotchi Digital Guide • Concept 7- Local Bingo Game • Concept 8- Hidden Gems collection

Table 10- Idea type category and corresponding ideas

Each concept has its pros and cons. Therefore, evaluation and validation were conducted to evaluate their compatibility with the project, comparing the details of each idea to determine the best fit for the project's execution, ensuring that the selected idea aligns with the design goals and overall objectives.

5

Evaluation & Validation

Based on the idea elaboration from the last chapter, this chapter begins with evaluating the generated ideas. It then proceeds to select the most representative one for validation. The validation process was conducted to refine further and confirm the viability of the chosen concept.

5.1 Setup of this Chapter

Evaluating ideas is a crucial step in the early stage of innovation, which is helpful for managers in designing the direction of future innovation projects (Sukhov, 2018). Thus, after the concept ideation, this chapter aims to filter out the ideas for iteration and deliver the final concept by following the Design Criteria set in Chapter 3 (3-10 Design Criteria).

The design criteria include seven norms: convenience, affordability, eco-friendliness, locality, authenticity, comfort, and safety. The applied methods are C-BOX and Harris Profile. These two methods are commonly used for idea evaluation. Hence, the detailed reasons for selecting these two methods, first-stage evaluation and second-stage evaluation, are elaborated below.

5.2- Idea Evaluation with C-BOX structure: The C-Box is a 2 x 2 matrix to evaluate ideas after concept generation. It helps filter ideas and determine the most valuable for further development. The axes are chosen based on design criteria rather than feasibility and innovation. This method simplifies idea selection and clarifies the next steps in concept development.

5.3- Harris Profile: After utilizing the C-BOX method for initial idea filtering, the Harris Profile was employed as a second-round filter to further refine and pinpoint the concept most aligned with this project's objectives. The Harris Profile facilitates straightforward, comparative evaluations by assessing various concepts based on their performance against each criterion (Annemiek Van Boeijen et al., 2014). The key pillars extracted from the remaining design criteria evaluated in the Harris Profile include eco-friendliness, locality, authenticity, comfort, and safety. These criteria were chosen because they offer a comprehensive evaluation, ensuring that the concepts adequately support the project and meet the target audience's expectations. This round of idea filtering is perceived as a more rigorous evaluation than the previous one due to the inclusion of more criteria pillars. This method is beneficial for selecting the final concept for further presentation and validation.

5.4- Validation Testing: The Local Bingo Game was selected after completing the evaluation using two methods. Following this decision, I conducted validation testing to gather feedback from stakeholders, including locals and users. Product validation ensures a product meets predefined requirements during product development (Shopify, 2024). By applying validation at this stage, I aimed to understand stakeholders' perspectives on the chosen concept and ensure it aligns with their expectations and needs.

5.5-Discussion of this chapter:

This section summarizes the validation methods and the overall insights gathered from the testing results, integrating these findings to provide cohesive results to the project.

5.2 Idea evaluation with C-BOX structure

In this section, two axes from Design Criteria were selected to filter the ideas in the first round: convenience and affordability. Figure 29 illustrates the distribution of most ideas along these axes. Convenience and affordability were prioritized to quickly scan through the ideas of whether to meet users' expectations. Below are brief definitions of these two axes to provide a basic understanding for the readers:

1. **Convenience (Y axis):** This concept/idea is easy to operate, apply, and adopt during the journey.
2. **Affordability (X axis):** This concept/idea ensures that users do not incur significant additional expenses during their trips.

The axes mentioned are applied in Figure 31.

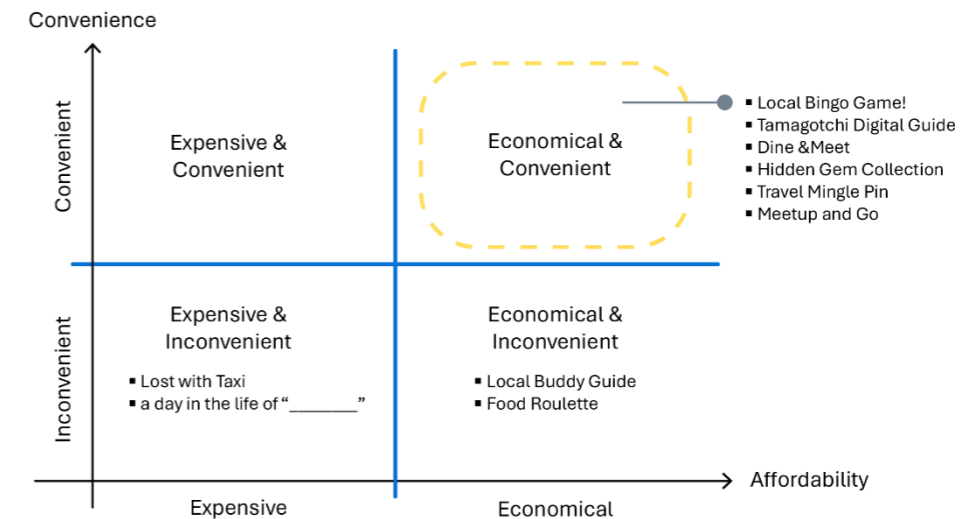


Figure 29- The results after using CBOX for filtering the ideas

In Figure 29, there are four quadrants with different meanings. It shows that most ideas fall into economical and user-friendly categories, and no ideas are expensive but user-friendly. Both economical and user-friendly ideas were selected based on their great performance.

Expensive & Inconvenient

Lost with Taxi: Collaborating with taxi owners and residents might present some challenges. For instance, the service cost might be too high to increase local profits, and the price could be too expensive for solo travelers. Additionally, the waiting time for each solo traveler is unpredictable, leading to significant inconvenience and difficulty in pairing solo travelers with local people.

A day in the life of "_____": This service mode indeed offers authentic local experiences by showing how locals live. Additionally, it benefits locals interested in making new friends and earning some income. However, not all locals have a distinct lifestyle within the city. Taking this service is expensive compared to traveling and purchasing small souvenirs. This service might be less convenient for solo travelers if they aim to visit numerous attractions in the city, as it lacks the flexibility needed for exploring multiple sites.

Economical & Inconvenient

Local Buddy Tours: This concept can provide enjoyable journeys for solo travelers who are also dog lovers. The service, facilitated by dogs, can be economical and affordable for users. However, it may be less convenient for locals or municipalities to manage, as it involves where to keep the dogs, how to care for them, and the training they require.

Food Roulette: This idea can attract residents and solo travelers by offering an exciting and surprising way to explore new dining experiences through a roulette that decides on a restaurant. However, the concept's inconvenience lies in setting fixed activity times and ensuring high participation from locals to make the service effective. Therefore, this service might be better suited as a monthly or bi-weekly event rather than a daily one. Less frequent scheduling would make it more convenient and predictable for both participants and local restaurants.

Lastly, five ideas fall into this section. The reasons for classifying them into this quadrant are briefly explained below.

Economical & Convenient

Local Bingo Game: This concept is highly user-friendly, and it is familiar with the format of postcards. It offers an economical option for participants since they only need one card to join the game, and obtaining a postcard is inexpensive. Moreover, participants can gain benefits, such as discounts on meals, when they reach certain lines in the Bingo card, adding value to their experience. Additionally, this concept allows users to conveniently send the card after completing the game, making it a seamless and enjoyable experience from start to finish.

Tamagotchi Digital Guide: This wearable device concept is considered economical because similar products are priced between 3 and 30 euros. Travelers can easily carry it during their journey and treat it as a unique souvenir to bring home. Its portable size and weight make it compact and convenient to carry and use in various situations.

Dine & Meet: This concept helps solo travelers save money by offering comparatively lower-cost meals while allowing them to know where to enjoy dining in advance with a local family. Additionally, it is user-friendly, as travelers can check the details of the matched family, including their cuisine portfolio and when and where to enjoy the meal in advance.

Hidden Gems Collection: This concept is economical, as it primarily requires papers and one additional small purse, both inexpensive. The purse conveniently gathers the collected clues and the map, making it easy to organize everything.

Travel Mingle Pin: This product is lightweight and easy to carry, which enhances its convenience. The production cost can be kept low by utilizing existing production methods, avoiding significant additional expenses. Its familiarity with users also adds to its convenience. Moreover, it helps travelers quickly identify whom to ask for assistance, facilitating immersion in the local context.

Meetup and Go: Compared to the current location in the transfer center, this is considered a modest improvement. It enables solo travelers to conveniently access, verify, and track city information sourced from locals, local shops, and past travelers. The entire service is free of charge to solo travelers, enhancing its overall convenience.

To evaluate the ten ideas, I utilized an evaluation method with CBOX structure as a trial idea scanning round; based on the initial results, I proceeded with a more rigorous evaluation using the Harris profile. This second round incorporated additional criteria to ensure a thorough assessment of each idea.

5.3 Harris Profile

Six ideas were selected for further evaluation after the initial round of idea screening using the C-BOX method. In the second round, these ideas were assessed using the Harris Profile, which provides a thorough and comparative evaluation of each concept, ensuring a rigorous selection process for the final idea to be presented and validated. This part involves and applies five key design criteria: eco-friendliness, locality, authenticity, comfort, and safety. These criteria were chosen to ensure the project aligned with the target group's needs. For a detailed explanation of the chosen norms, please refer to Section 3.9, "Design Goal & Criteria," in Chapter 3 - Qualitative Research Study; the definitions of each criterion are briefly described below. The evaluation results are shown in Table 11.

1. **Eco-Friendliness:** The concept must be environmentally sustainable, benefiting the local community and minimizing environmental impact.
2. **Locality:** Support and positively contribute to the local economy, community, and environment.
3. **Authenticity:** Offer genuine local cultural experiences and help EU Gen Z solo travelers understand and appreciate local features.
4. **Comfort:** Provide comfort to users, including relieving physical pain or enhancing physical joy
5. **Safety:** Ensure the safety of travelers, posing no risks or dangers during utilization

Criteria/ Concept	Local Bingo Game				Tamagotchi Digital Guide				Dine & Meet				Hidden Gems Collection				Mingle pins				Meetup and Go			
	-2	-1	1	2	-2	-1	1	2	-2	-1	1	2	-2	-1	1	2	-2	-1	1	2	-2	-1	1	2
Environmentally friendly			1	2	-1	-1	1	2			1	2	-1				-1				-1	-1	1	2
Locality			1	2			1	2			1	2			1	2			1	2			1	2
Comfort			1	2			1	2		-1					1	2			1	2	-1	-1	1	2
Authenticity			1	2			1	2		-1					1	2			1	2			1	2
Safety			1	2			1	2	-1	-1					1	2			1	2			1	2

Table 11- The results of the Harris Profile

After evaluating the Harris Profile, the next step is identifying better ideas based on the results. Three ideas have shown better performance than others, based on their position on the Harris Profile curve and cumulative points. These ideas are "Local Bingo Game," "Mingle Pins," and "Hidden Gems Collections." Detailed reasoning and analysis are provided below. (A detailed analysis of other concepts can be found in Appendix 8.)

1. **Local Bingo Game:** With the highest score in all aspects, this concept demonstrates exceptional potential through strong collaboration between the municipality and local shops. It aims to provide authentic experiences for EU Gen Z solo travelers exploring the city, encouraging them to spend

locally. The concept is highly familiar and adaptable, meeting the expectations of EU Gen Z solo travelers while promoting sustainable and environmentally friendly travel practices. Adopting a holistic idea of "local food" or a "local seasonal food" approach can foster methodologies that address all pillars of sustainability, leading to more concrete outcomes in sustainable consumption (Vargas et al., 2021). The lightweight postcard format allows users to easily carry it and explore the city deeply by collecting stamps through local purchases. Solo travelers can actively support the local economy and earn prizes based on the number of stamps collected, enhancing engagement and rewards.

2. **Mingle Pins:** This concept performs average overall but does not significantly encourage environmentally friendly behaviors within the city. Instead, it emphasizes increasing interactions with local people and shops. This approach adds value by creating unexpected and surprising social interactions among travelers, positioning the concept as a meaningful souvenir purchase. These interactions can foster stronger connections among visitors, residents, and local stores, enhancing community engagement and support.
3. **Hidden Gem Collection:** This concept emphasizes authenticity and local experiences, supporting the local economy and urging EU Gen Z solo travelers to uncover hidden gems in the city. Nonetheless, using printed materials for puzzles creates paper waste, which isn't sustainable. Transforming the concept into a digital format, like a mobile app, could reduce environmental impact and keep users engaged in this concept.

Three concepts closely aligned with the project goals were selected after two rounds of filtering ideas using the Harris Profile. These concepts enhance interactions between travelers and locals, each with a different emphasis. Overall, the Local Bingo Game emerged as the best concept in both rounds of evaluation. Its strong performance in each criterion makes it ideal for guiding EU Gen Z solo travelers on a sustainable journey.

Chosen Idea for Validation Testing

Based on the performance data from the two evaluations mentioned above, I selected the Local Bingo Game for prototyping because it received the highest scores, reflecting strong alignment with user preferences. The idea of the Local Bingo Game was selected for prototyping and testing, with the following mockup illustrating the concept's appearance. (Figure 30 and Figure 31) Since the context is focused on Europe, Amsterdam was chosen as an example for prototyping the idea. According to Schroder Investment Management North America Inc. (2021), Amsterdam has been recognized as the world's most sustainable city for 2024 by the consultancy and engineering organization Arcadis. The sustainability of a city is evaluated based on four key pillars: economic growth, social progress, environmental stewardship, and efficient urban governance (United Nations, 2013). The prototype of this concept includes four routes designed for the Amsterdam context: the historical city walk, the canal belt area, museums, and nature trails, each designed to satisfy different preferred routes.

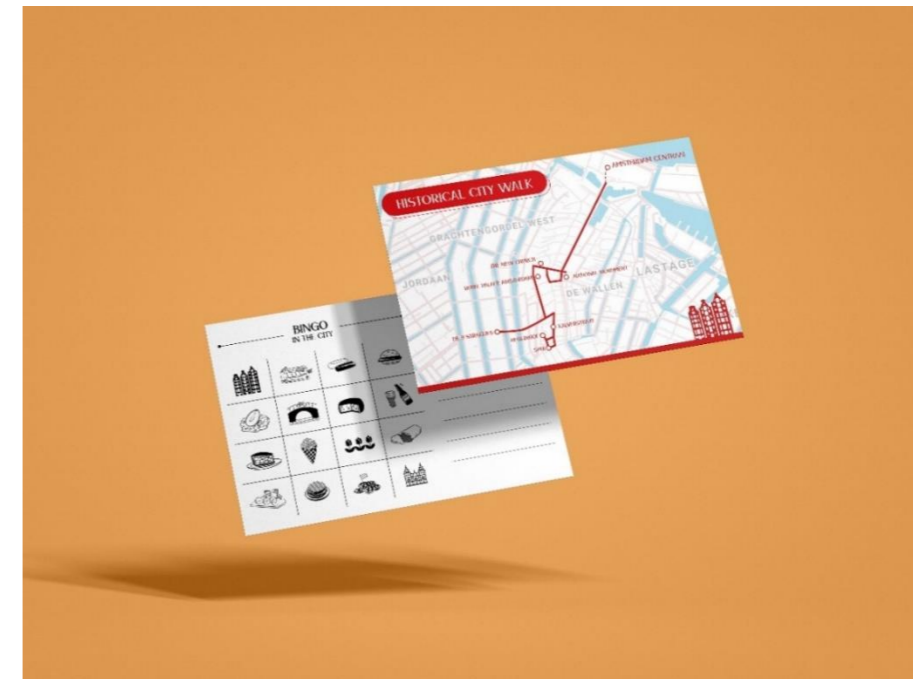


Figure 30- Prototype of the concept



Figure 31-With 4 types of routes

Inspired by the analysis and synthesis results from the qualitative research study, it was found that EU Gen Z travelers tend to engage in city activities through physical participation and prefer authentic travel experiences. Therefore, this design highlights combining routes of local experiences tailored to different

preferences, focusing on guiding users to explore local food.

The concept encourages travelers to gain authentic city experiences and promote local food consumption, aligning with sustainability principles. Local food systems reduce the need for long-distance transportation, a significant source of greenhouse gas emissions (Churchill Northern Studies Centre, 2024). Additionally, the analysis recommends enhancing physical activities over relying heavily on new apps or extensive technological functions.

Apart from the core idea of how the concept works, it is also essential to address the practical aspects of collaborating with other stakeholders. The two main stakeholders in this project are local shops and municipalities. The details are divided into two categories for each stakeholder to clarify their roles.

Local shops:

- **Consignment Goods:** Selling postcards on consignment and splitting the revenue from these sales.
- **Seal Stamps:** Giving travelers a seal stamp when they buy corresponding items or food.
- **Guidance:** Guiding travelers to nearby places where they can collect additional stamps.
- **Discounts:** Offering discounts to solo travelers who have accumulated bingo lines and earned rewards from the municipality.

By participating in these activities, local shops can increase the visibility of their products and attract more customers, benefiting from the surge of travelers looking for genuine experiences. This collaboration enhances the travelers' experience and boosts the local economy.

Municipality:

- **Engaging Local Shops for collaboration:** Recruit local shops that promote local food to participate in the collaboration, negotiating discounts and special offers for travelers to expand the initiative's reach and impact.
- **Providing Clear Guidelines for users:** Developing easy-to-understand visual guidance for solo travelers interested in participating in the Bingo postcard initiative.
- **Designing and Managing Bingo Card Rewards:** Organizing rewards based on contributions from local shops, ensuring those offers are attractive for participants' expectations.
- **Promoting Local Resources on Bingo Cards:** Utilizing different types of local resources effectively on postcards to enhance diversity and promote different exploration experiences for participants.

The actions described above aim to meet users' needs, foster stronger community engagement, and encourage local residents to embrace sustainable tourism practices in the region.

The following validation section was conducted to ensure it meets user criteria and expectations, assess how well it resonates with users, and gather feedback on potential improvements. This approach will help refine the idea to address user needs better and enhance its effectiveness.

5.4 Validation Testing

Validation testing was conducted to identify areas for improvement of the selected design concept. I created five categories of questions by following the structure proposed by Norman, D. A. (2013) to gather feedback from stakeholders, including users and local shops, focusing on usability, user experience, and practicality. Detailed questions can refer to Appendix 9. This process assessed the concept's visibility and feasibility,

ensuring effective collaboration. Feedback from users and local shop employees revealed key areas for future design enhancements listed below.

User Feedback

- **Highly adaptable with postcard format:** Easy to carry around and usable as a postcard
- **Facilitating city exploration and interaction within the city:** The maps featured on the postcards encourage walking and exploration in the town and foster increased interaction with local shops and food establishments.
- **Enhance route maps with icons for attractions and clear directions, including specific turn instructions:** Enhance route maps by adding icons for each attraction and clarifying directions and street names, including specific turn instructions. For instance, indicating turns at specific streets after visiting each attraction indicated from the route map.
- **Consistent start points for all postcards will decrease confusion:** Ensure consistent route starting points. For example, museums and cultural-nature routes should also originate from Amsterdam Central Station to avoid travelers getting confused when finding the main object and where to start.
- **Two icons need minor adjustments for clarity:** The "pastiche" and "kroket" icons require improvements to enhance the users' understanding.
- **An additional map showing all stamp collection points:** Providing an additional map showing all collaborating locations where users can obtain stamps will be beneficial for users to reach where to collect stamps efficiently.

Stakeholder (Local shop) Feedback

- **Postcard shape is an interesting way to attract travelers and facilitate interactions:** Using postcards is an interesting and innovative idea to promote local business.
- **Experience with similar service modes from Asian companies, leading to a willingness to collaborate:** From previous and current collaboration with Asian companies using similar methods, they are willing to participate in similar activities, applying lessons learned and optimizing processes.
- **Different Perspectives from employees and employers:** While employees working in the local shops find this collaboration intriguing, owners may prioritize different considerations, such as cost-effectiveness and strategic alignment with business objectives.
- **Digital solutions are more valuable for investment:** One local shop is unwilling to collaborate through physical products as the main focus is primarily on digital solutions, such as apps and websites. From their perspective, investing in digital platforms and apps is seen as more effective and efficient.

5.5 Discussion of this chapter

To evaluate whether the idea aligns with user expectations, this chapter strategically applies two methods for filtering ideas: the CBOX structure evaluation and the Harris profiles evaluation. Both evaluations use criteria based on the Design Criteria derived from interviews. The design is assessed from different perspectives by separating the evaluation into two rounds, ensuring a more comprehensive analysis.

Eventually, the Local Bingo Game idea is selected based on its overall performance. In the ideation portfolio, I focused more on using the product than on how stakeholders can collaborate to implement the ideas.

Therefore, in the evaluation part, I classified and analyzed the collaboration required for this project, detailing what local shops and the municipality should execute and how this execution can be effectively coordinated.

For instance, local shops can promote their businesses through this collaboration by consigning products and offering discounts to users. On the other hand, the municipality needs to ensure clear communication with stakeholders, including solo travelers, local shops, and residents. They should also recruit locals to contribute to the Bingo Card and guide solo travelers to an authentic exploration experience with clear guidance in understandable steps and visuals to increase their willingness to participate in this activity held in the city.

After elaborating on how stakeholders can collaborate with this design, this idea is applied in the validation testing to gather more concrete suggestions from users and other critical stakeholders, such as local shops. From the user's perspective, I observed that they are interested in buying such postcards and exploring the city, especially since it has multiple functions. Nevertheless, to elevate the current design, the user proposes a few adjustments, such as indicating the street name, highlighting identical origins, pointing to the directions toward where to get the stamp, etc.

Apart from users, most local shops find using postcards to complete bingo lines exciting and innovative, even though similar initiatives have been applied in other countries. However, many of these shops are not individually owned, which limits their ability to decide on collaboration. Additionally, some local shops may prefer something other than physical products, even with municipal proposals, as they rely on the effectiveness of digital platforms like websites and apps.

The potential benefits of using postcards have not yet been proven with sufficient evidence or statistical data. While some shops find the idea intriguing, persuading local businesses to collaborate with the municipality remains challenging, especially when they are already effectively using online resources for marketing.



6

Conclusion & Limitation

To conclude the project, this chapter summarizes the overall process, outlines the limitations encountered during implementation, and provides suggestions for future research directions.

6.1 Conclusion

This project was initiated to enhance users' willingness to contribute to sustainability while traveling within the city. It began with a personal interest in the topic, followed by informal interviews discussed in Chapter 1. These interviews identified four key categories: solo traveling behavior, target users—Gen Z, the role of sustainability in the city, and transportation. These categories formed the basis for the Literature Review in Chapter 2.

The insights gained from the literature review were crucial for refining our understanding of the target users, EU Gen Z, and developing several sub-questions to guide the in-depth interviews and qualitative research detailed in Chapter 3. This chapter involved familiarizing, analyzing, and synthesizing interview data to uncover trends and user preferences, which were then categorized into four Personas. By the end of this chapter, the focus shifted to specific solo traveler groups and their needs, with the goal of helping EU Gen Z discover local attractions during city exploration. This approach aligned with Norman's (2004) insights, which emphasize meeting users' needs and enhancing their exploration of the locality. Additionally, exploring local areas ties directly to the three pillars of sustainability, showing how these activities can positively impact economic, social, and environmental aspects.

In Chapter 4, the project moved into the brainstorming phase, starting with a brainwriting session involving design students. This session generated ten potential ideas, setting the stage for further development and evaluation.

In Chapter 5, the proposed ideas were rigorously evaluated and validated through a comprehensive screening process, assessing each from multiple perspectives to identify which best aligned with the project's goals. The selected concept was the Local Bingo Game, with Amsterdam used as a prototype for visualization.

Subsequently, the validation process with stakeholders provided valuable insights. Testing with users and local shops revealed that both groups found the Local Bingo Game concept interesting and feasible for city collaboration. However, several areas for improvement were identified: enhancing icon clarity, providing more precise direction through route maps on the postcards, and developing a digital version of the game. Feedback from local shops varied during user testing. While many were open to collaboration if supported by the municipality, there were concerns about differing views between employees and employers. Additionally, integrating online resources was considered more effective for local shop collaboration than relying solely on physical products like postcards.

To summarize the overall project, three key stakeholders were frequently mentioned as guiding EU Gen Z solo travelers to become more sustainable within the city: EU Gen Z solo travelers themselves, local shops and residents, and the local government. (Figure 32)

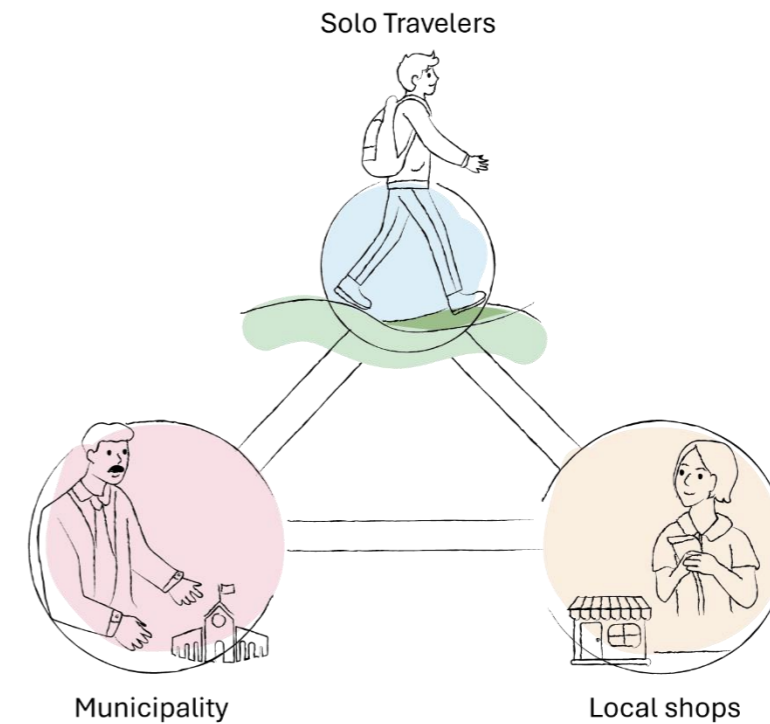


Figure 32-The relations between stakeholders

To reflect on the overall project and integrate the insights gained from the Local Bingo Game, a few reflective strategies are critical to design strategies that optimize young solo travelers' intra-city journeys toward sustainability.

1. The first step is to enhance collaboration with locals, particularly from the municipality.

During the validation process, I observed a high willingness among local shops to collaborate with the municipality through interactive activities. Hence, increasing communication with locals and participating shops will be crucial. The municipality can propose promotional support for these local shops to enhance their marketing in tourism, creating a win-win situation. (Shown in Figure 33)

- Increase opportunities for systematic planning guiding sustainable city development, for instance, by starting regular communications promoting more collaboration with the local shops and people about improving the city's current environment.
- Additionally, increasing the willingness of local shops to participate requires effective motivators. Enhancing their exposure and boosting their income by attracting more visitors can serve as strong incentives. One method to achieve this is through marketing support in digital platforms and physical advertisement. For example, creating a map featuring all collaborating local shops can guide travelers to visit these stores more frequently, promoting and marketing these businesses within the city.

As local shops see their collaboration and efforts contributing to the local environment and community being recognized, EU Gen Z solo travelers will become more aware and inclined to make sustainability-related contributions. This highlights the importance of stakeholder collaboration in creating more sustainable journeys for EU Gen Z solo travelers.

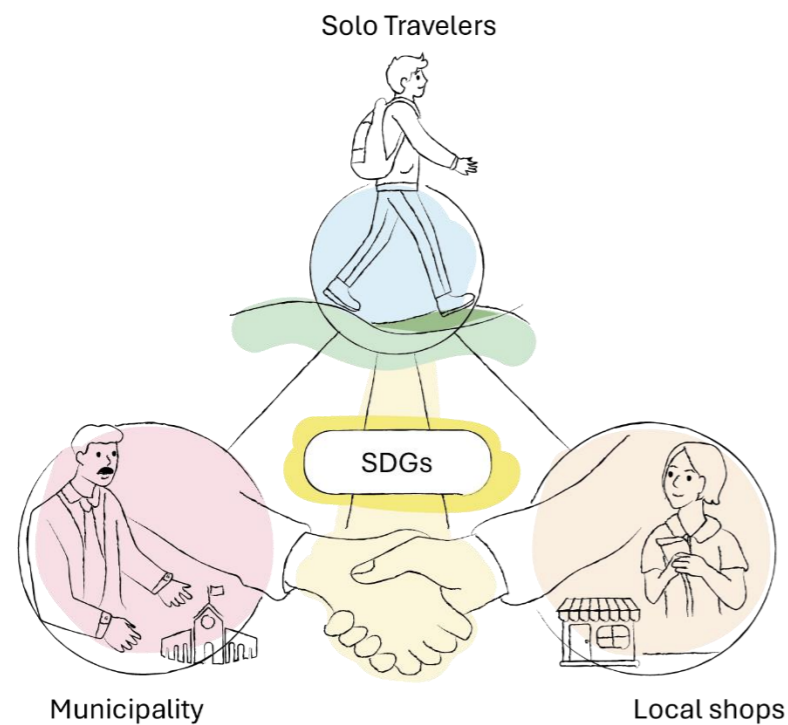


Figure 33- Collaboration stems from the locals themselves

This approach ensures that the local community values the travel experience created for solo travelers. Moreover, it aligns with one of the key indicators in the Sustainable Development Goals (SDGs), emphasizing the importance of collaborative networks. Collaborative networks (CNs) are partnerships formed by independent entities that cooperate towards a shared objective, utilizing combined resources and defined roles. The application of CNs is mainly situated in the EU, aligning with its sustainability goals (Senay Sadic et al., 2024).

For instance, taking the Local Bingo Game in this project as an example, the municipality can use this small postcard to promote EU Gen Z solo travelers. Creating a map featuring all local shops willing to collaborate can also guide travelers to visit these stores more frequently. This map will promote and market the participating shops within the city, encouraging active participation and collaboration. This approach benefits both travelers and local businesses.

2. Secondly, to guide EU Gen Z's behavior towards more sustainable practices in the city, locals should **provide effective and viable sustainable options** rather than focusing solely on environmental aspects.

- Offering local services and products fulfills their desire for authentic city experiences and enhances their sense of responsibility toward the city. EU Gen Z values genuine societal positivity, making local elements like food, as highlighted in interviews, particularly appealing.
- While many Gen Z travelers focus on food and culture, strengthening this aspect is an attractive option, and enhancing connections with local people can be a significant advantage. This can be improved through future collaboration, further promoting sustainable behaviors and deeper engagement with the local community.



Figure 34- More viable options related to sustainable practices for EU Gen Z

3. To resolve the value tension between solo travelers and local shops, **products launched in physical format should also be available digitally for easy access by solo travelers.** This target group values practicality, including affordability and accessibility. While digital engagement isn't always crucial for product success with EU Gen Z, it provides significant convenience for stakeholders, as noted from user testing with local shops.

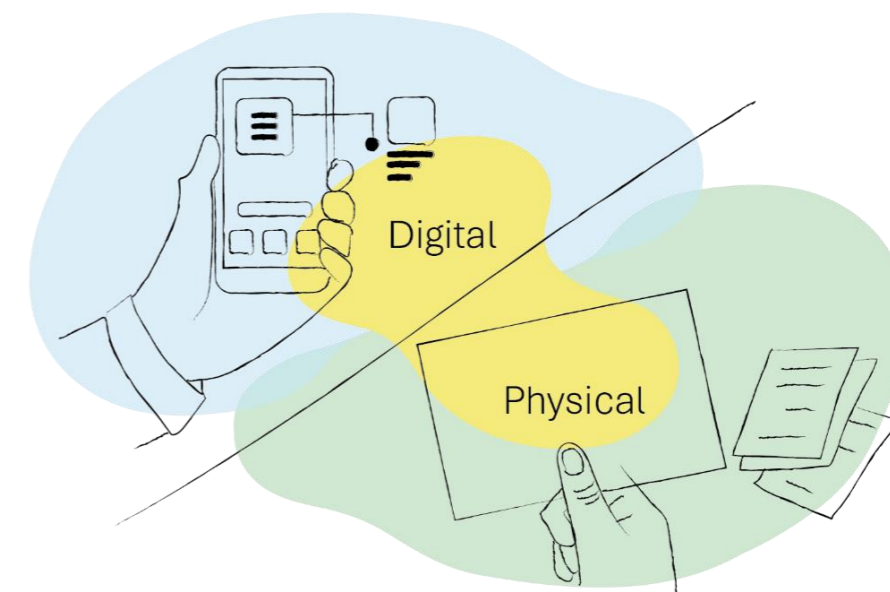


Figure 35- Emphasis on physical but also viable on digital platform

4. To avoid over-tourism in focused areas or city centers, **increasing the visibility of niche or less popular**

places for EU Gen Z. Niche places, often known only to locals, offer unique experiences.

To spark the interest of EU Gen Z solo travelers, it's essential to emphasize the value of exploring these niche places and to provide a flexible and authentic city experience. These insights, derived from participant interviews, highlight the importance of municipalities **developing and promoting current niche places rather than overly marketing the already popular spots.**

Implementing these strategies can create a supportive network that enhances the sustainability of young solo travelers' journeys within the city and strengthens the ties between travelers, local businesses, and the community.

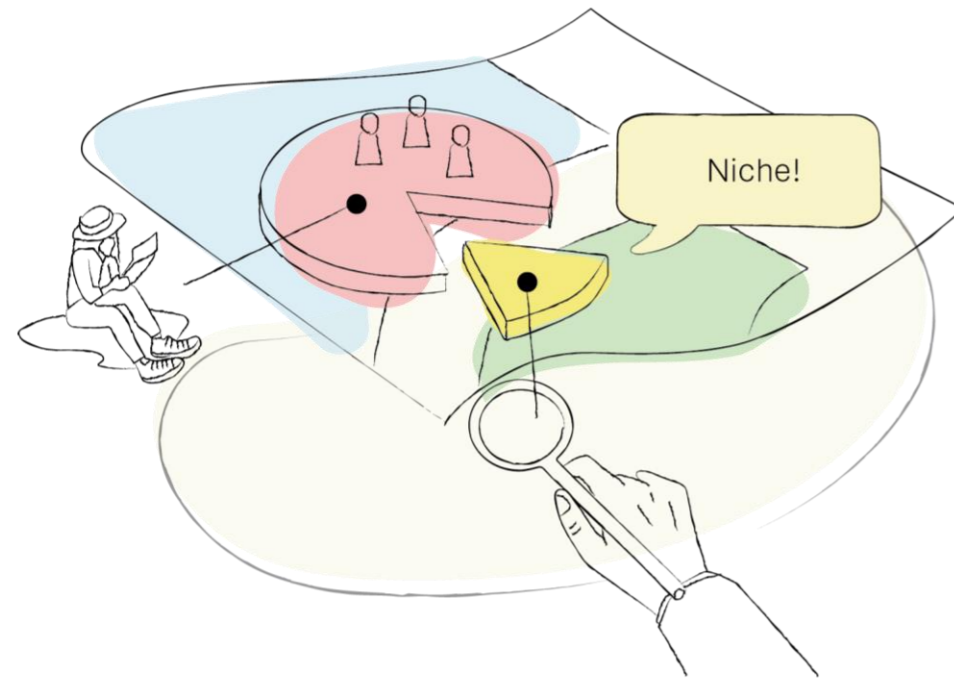


Figure 36- Promoting and developing resources in niche places instead of popular spots within the city

6.2 Discussion

This section explores key findings from my research on EU Gen Z solo travelers, shedding light on their preferences and behaviors to inform tourism strategies tailored to this demographic.

Focus on Gen Z Travelers: Past academic studies on travelers have primarily focused on Gen Z, female solo travelers, and those in the Asian context. This research, however, provides valuable insights into the specific concerns and preferences of EU Gen Z travelers, thereby highlighting potential strategies to attract this group.

The random selection method in this research resulted in more male participants in the interview sessions, offering a broader perspective and highlighting varying preferences within this group. This comprehensive approach helps identify effective strategies to attract and engage EU Gen Z travelers.

Technological Affinity vs. Physical Engagement: While Gen Z shows a strong affinity for technology—such as websites, social media, and digital platforms—qualitative findings suggest they prefer physical engagement over constant digital interaction during their travels. Conversely, many local shops rely heavily on digital resources. This disparity indicates a potential mismatch between local businesses' digital focus and Gen Z's preference for tangible experiences. Addressing this gap can help businesses and tourism boards align their offerings with Gen Z's preferences, enhancing their travel experience.

Concept of Sustainability: This research shows that EU Gen tends to associate sustainability primarily with environmental concerns rather than a holistic view encompassing economic and social dimensions. This focus on environmental sustainability influenced the design process, integrating aspects that align with Gen Z's values. For effective tourism strategies and urban planning, balancing environmental sustainability with broader economic and social considerations is essential.

Validation Insights and Urban Sustainability: Feedback from both users and local shops during the validation phase was positive, with many businesses expressing willingness to collaborate if municipal support and discounts were provided. Such partnerships could enhance the sustainability of city exploration experiences. However, issues like littering and trash in cities like Amsterdam, despite its reputation for sustainability, emphasize the need for clearer sustainability criteria and better coordination among municipalities, businesses, and tourists. Effective urban sustainability requires presenting it as a valued aspect of the city, supported by infrastructure and stakeholder engagement.

Overall, this research underscores the importance of a coordinated effort to promote sustainable tourism practices and address urban sustainability challenges. It provides a foundation for developing strategies that resonate with Gen Z's environmental values and contribute to a more sustainable urban environment.

6.3 Contributions and Implications

The findings of this research make several important contributions to the field of sustainable tourism and urban planning:

Enhanced Understanding of Gen Z Solo Travelers: By focusing on European Gen Z solo travelers, this study provides new insights into their specific concerns, preferences, and behaviors.

These findings can assist tourism marketers and urban planners develop targeted strategies that effectively engage this demographic. Understanding their unique needs and preferences allows for more tailored and appealing tourism offerings.

Bridging the Gap Between Physical and Digital Engagement: The research reveals Gen Z's preference for physical activities over constant digital engagement while traveling. This insight is valuable for local businesses and tourism services, enabling them to align their offerings with Gen Z's desire for tangible experiences. This alignment can enhance the overall travel experience for this certain user group.

Sustainability Insights: EU Gen Z's strong association of sustainability with environmental concerns highlights the need for a broader approach to sustainability in tourism planning. Policymakers and businesses should integrate diverse sustainability dimensions, including economic and social aspects, to create more comprehensive and effective sustainability awareness and initiatives.

Collaboration Opportunities for Urban Sustainability: The research emphasizes the need for improved collaboration among municipalities, local businesses, and tourists to advance urban sustainability. The validation phase revealed that current efforts by EU Gen Z travelers, local shops, and municipalities could be enhanced through stronger coordination. Effective teamwork is essential for tackling sustainability challenges and improving urban environments.

6.4 Limitations

This research faced several limitations that impacted the interpretation of findings and suggested areas for

further study:

1. **Gender Classification in questions:** While the selection process included a diverse group of solo travelers, the interview questions did not account for gender differences. This lack of differentiation limits understanding of how male and female solo travelers may experience and respond to the issues differently.
2. **Scope of Sustainability:** The project focused on transportation as a key factor affecting sustainability, particularly CO2 emissions. However, sustainability encompasses a broader range of issues beyond transportation. The research did not fully explore these additional dimensions, potentially overlooking other important factors affecting overall sustainability.
3. **Comparative Analysis between different Gen Z:** The study concentrated on EU Gen Z without comparing their preferences with those of Gen Z from other continents or other generations. This limits the findings to EU Gen Z tendencies without contextualizing them against other demographics. Comparative studies could provide a more comprehensive understanding of Gen Z's characteristics and preferences.
4. **Limited Stakeholder Input:** In the validation phase, the ability to interview local shop owners was limited due to their busy schedules. This resulted in a lower willingness to participate and fewer shop owners involved in the conversations. Additionally, understanding from the municipality side is lacking in this project.

6.5 Future Research Recommendations

To address these limitations, future research could focus on:

1. **Generational Comparison:** Investigate sustainability perceptions among solo travelers from different generations within the EU.
2. **Continental Comparison:** Compare Gen Z solo travelers' behaviors and preferences across different continents.
3. **Gender Analysis:** Examine behavioral and motivational differences between male and female solo travelers.
4. **Product Impact:** Assess the effectiveness of physical versus digital products for solo travelers and gather stakeholder perspectives on their impact.

7

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This chapter includes two types of references: academic citations and commercial sources.

All references follow APA format and are clearly classified by type for the reader's convenience.

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