

# Mobile Apps for Tourists – Insignificant Fad or Effective Tool to Shape the Destination and Mode Choice Decision?



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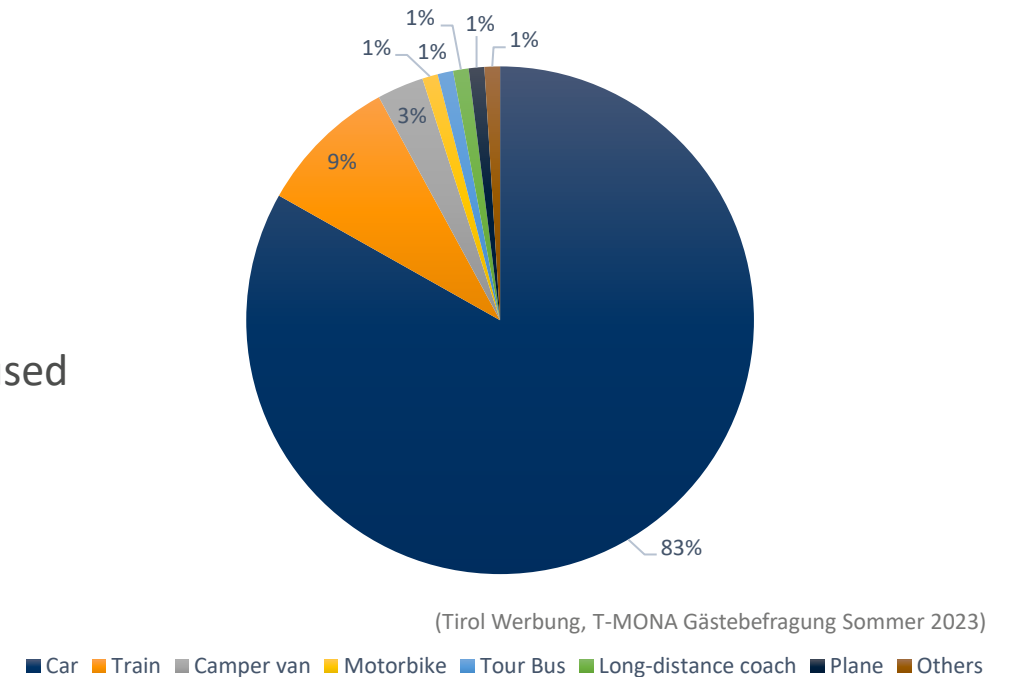
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# Background and Motivation

- Tourism mobility is responsible for 75 % of the CO<sub>2</sub> emissions caused by tourism (World Tourism Organization & UNEP, 2008)
- The extent of CO<sub>2</sub> (mainly through the journey from origin to the destination and back) depends strongly on the transport mode used
- 83% arrive by car, 9 % by train (Tirol Werbung, T-MONA, 2023)
- Deterioration of destination image, traffic congestion, road crashes, noise pollution (Bellos et al., 2020; Curtale et al., 2021)
- In order to reduce the negative externalities a shift from private car to train is needed

Modal Split Tyrol Summer 2023 (n = 5640)

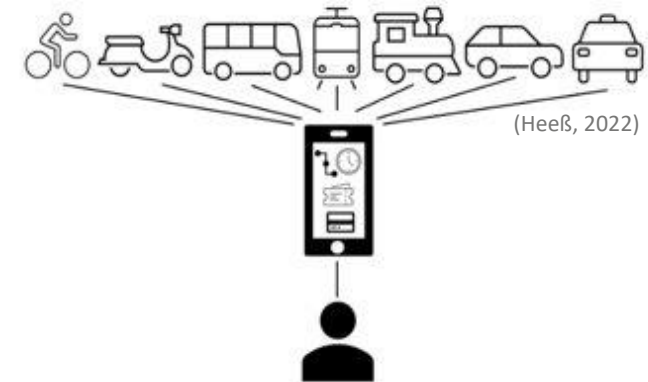
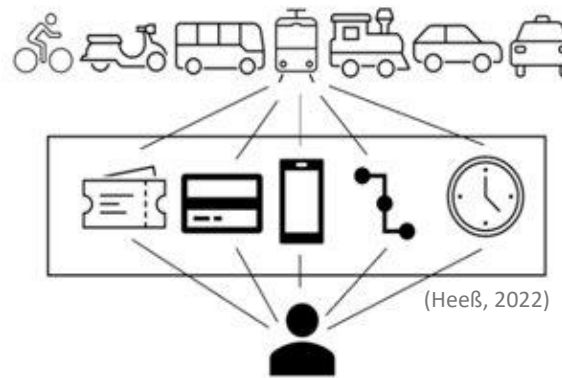


(Tirol Werbung Regina Recht, 2022)

# Research Question

How important is an app that integrates various functions for guests in the different phases of their holiday (destination choice, arrival, on-site mobility)?

What can an app contribute to make public transport more attractive?



# Study region and sample



Tyrol (Austria)



Sample: n= 266



Initial situation: Hiking holidays in Tyrol



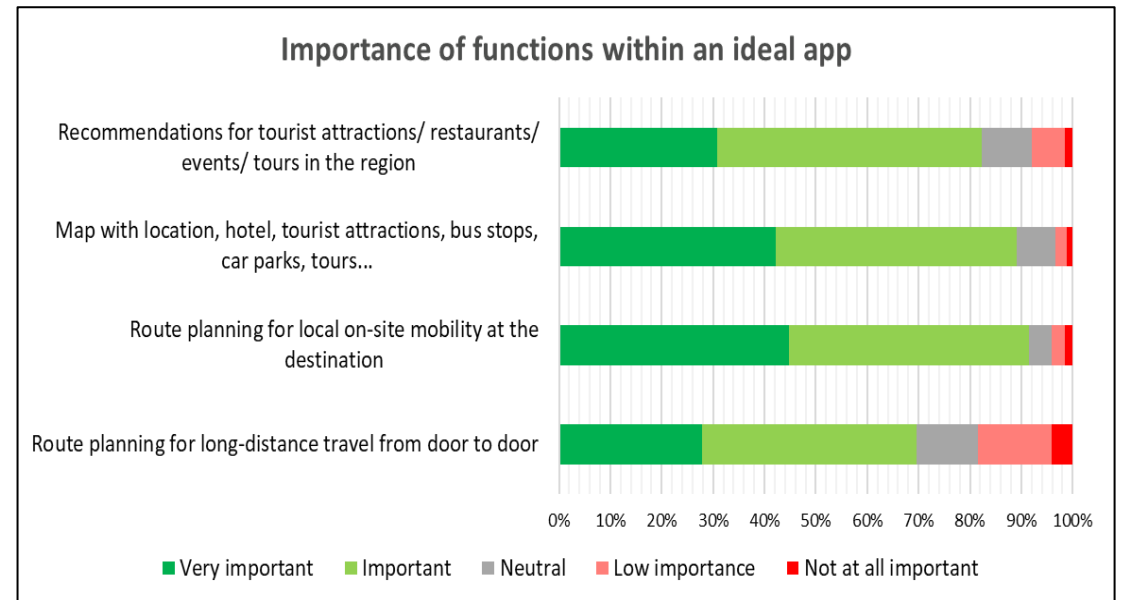
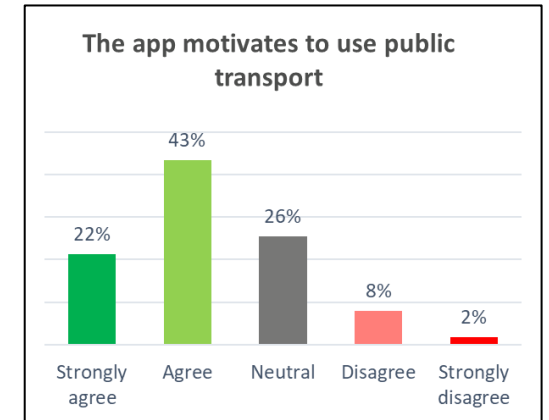
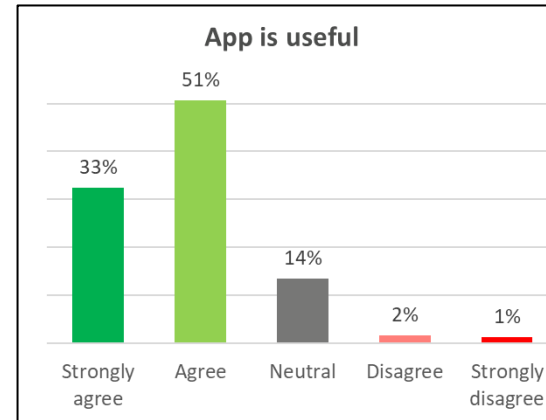
Method: Discrete Choice Experiment +  
Questions on demographics, everyday mobility,  
attitudes towards technology and environment



(Routen- & Touren-Portal - Wandern • Region St. Johann in Tirol, n.d.)

# Results

- 83% stated that the app is useful
- 65% stated that the app would motivate to use public transport
- The main significance of the functions relates to on-site features
- However, the scales are not substitutive  
→ in-depth analysis through three discrete Choice Experiments



# Discrete Choice Experiments (DCE)

- Software: *Lighthouse Studio*
- 3 experiments (8 choice sets)
- Respondents choose one of four alternatives including an opt-out option



Destination choice



Long-distance travel to the destination




Local mobility at the destination

# Example of a choice task – Destination Choice

	Option 1	Option 2	Option 3	Option 4
Online information and booking	Separately	TITRAG app	TITRAG app	
Room rate per person	50€	90€	90€	
Other activities	Education, museum	Other sports	Relaxation, wellness	
Local infrastructure	Basic services	Basic services + shops + nightlife	Basic services + miscellaneous shops	I would not choose any of these holiday offers.
Hiking possibilities	Easy, ambitious + (high) alpine hikes	Easy + ambitious hikes	Easy + ambitious hikes	
Local mobility services at the destination	Public transport & Car-/Bike-sharing	No public transport	Public transport	
	<b>Choice</b>	<b>Choice</b>	<b>Choice</b>	

(Heeß, 2022)


# Example of a choice task – Long distance travel to the destination

	Option 1	Option 2	Option 3	Option 4
Schedules and booking	TITRAG app	TITRAG app	Seperately	
Travel time door-to-door	9h	7h	8h	
Travel costs per person in one direction	100€	100€	200€	None of these options. I will go by car.
Transfers	0 = direct connection	1	2	
Last mile to the hotel	On foot	Bus	Hotel shuttle	
	<b>Choice</b>	<b>Choice</b>	<b>Choice</b>	<b>Choice</b>

(Heeß, 2022)



# Example of a choice task – Local mobility at the destination

	Option 1	Option 2	Option 3	Option 4
Schedules and booking	TITRAG app	Seperately	TITRAG app	
Costs per person (There and back)	10€	0€ (Guest card)	6€	
Travel time	45min	35min	25min	None of these options. I will go by car.
Interval of public transport	Few connections a day	Every 60min	Every 30min	
Walking time from and to the station	10 - 20min	5 - 10min	20 - 30min	
	<b>Choice</b>	<b>Choice</b>	<b>Choice</b>	<b>Choice</b>

(Heeß, 2022)

# Average Importances

- Attribute “Costs” is the most important
- Attribute “Online information and bookings (app)” is the least important in all three DCE
- All three DCE asked for one attribute in euros, therefore the willingness to pay for different attributes and levels can be calculated

Long-distance travel to the destination	
Travel costs (per person, one-way)	35%
Number of transfers	27%
Travel time (door-to-door)	17%
Last mile to accomodation	15%
Online information and bookings (App)	6%

Destination choice	
Hiking possibilities	25%
Costs for accomodation (per person)	22%
Local mobility services at the destination	21%
Other activities	17%
Local infrastructure	10%
Online information and bookings (App)	5%

Local mobility at the destination	
Travel costs (per person, there and back)	35%
Interval of public transport	22%
Walking time to and from the station	21%
Travel time	14%
Online information and bookings (App)	8%

# Willingness to pay (monetary value of transportation-related attributes)

	Willingness to pay for...	EUR
Mode choice on long-distance trip	...reducing transfers from 2 to 0	67,74
	...being picked up by a shuttle and driven to the hotel	27,71
	...not using personal vehicle to travel on vacation	-42,85
Mode choice on local trips	...30 min bus frequency (instead of 60 min)	4,25
	...walking time reduction from 20-30 min to 5-10 min	5,66
	...not using personal vehicle at destination	-2,11



Preference for direct convenient connections, presumably due to luggage carried and stress associated with changing trains (finding a platform, risk of delays, etc.)



high value of convenience on a last mile section






visitors would have to be paid 42,85 euros not to use their cars for long-distance trip to the destination



visitors would have to be given this money to switch from personal vehicles to public transportation

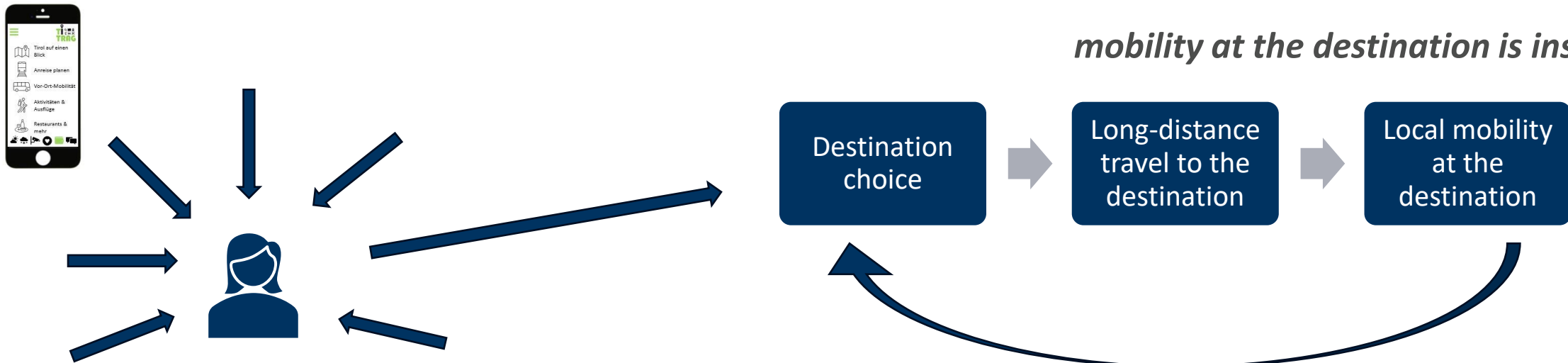
# Willingness to pay (monetary value of the app)

		Added value of the app	
	Destination choice	Per night	7 € - 12 €
	Long-distance travel to the destination	Per journey (one-way)	10 € - 22 €
	Local mobility at the destination	Per ride in the destination	1,08 € - 1,28€

# Relevance of the app for car travellers/ rail travellers

The influence of the app on the choice of mode of transport is relatively moderate, ranging from 1,8 percent points with optimised attribute levels to 3,5 percent points with medium attribute levels. With an average share of rail/bus travellers of 13% in real terms, 2 percentage points are a relevant contribution.

*The app can be seen as a “trojan horse” that gives the tourist a nudge during the booking/ destination choice-making process and shows that the destination offers local mobility services and therefore the decision to travel by train can be promoted, because of the information that the on site mobility at the destination is insured.*



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# Thank you for your attention



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