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Effects of within-trip subjective experiences on travel satisfaction and travel mode choice: A conceptual framework

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1 Introduction

Active travel, such as walking and cycling, promotes healthier and cleaner cities, but adoption remains low despite efforts to promote its uptake (Goel et al., 2022, Nieuwenhuijsen, 2018, Oja et al., 2011). Subjective factors, such as travel satisfaction – cognitive and emotional evaluations of travel – are increasingly recognised for their role in travel behaviour, such as in influencing attitudes and intentions, which in turn shape mode choice (De Vos et al., 2022). This conceptual paper explores how within-trip subjective experiences shape travel satisfaction and, subsequently, mode choice.

2 What are within-trip experiences?

Subjective experiences are cognitive and affective (mood, emotion) responses, mediated by the process of appraisal, to stimuli encountered during travel (Lim et al., 2023). The sum of all subjective experience episodes during a trip forms a person's within-trip subjective experience, which subsequently influences travel satisfaction. Travel satisfaction results from summing subjective experience episodes with normative or heuristic rules. Normative approaches, like equal-weighted averaging (EWA), weight all episodes equally, while heuristic rules, such as the peak-end rule, weight intense and final experiences more strongly (Fredrickson and Kahneman, 1993). An individual experiencing a calm ride but later a near miss may, under EWA, weight both events equally, but weight the fear from the near miss more strongly under peak-end processing (Gao et al., 2020).

3 How do within-trip experiences influence travel behaviour?

Within-trip experiences during travel influences the satisfaction of a trip. Repeated negative experiences may lead to low levels of satisfaction that subsequently negatively influences a person's attitude – beliefs towards something along favourable-unfavourable dimensions (Ajzen, 2001) – towards a given mode. Attitudes influences intention to use that mode in the future, which subsequently predicts actual behaviour (De Vos et al., 2022). For example, repeated negative experiences while biking, such as unsafe driver behaviours, may foster beliefs that bicycling is dangerous and unpleasant, subsequently reducing a person's intentions to ride in the future, and thus their actual behaviour (Fishbein and Ajzen, 1975).

4 Discussion

Given the in-situ nature of within-trip experiences, a focus on deploying real-time, naturalistic methods is needed. Naturalistic methods, such as the think-aloud method, can capture in-situ qualitative reactions to stimuli, while physiological monitoring of heart rate and electrodermal activity can offer quantitative insights into individual emotional states (Bigazzi et al., 2022). Further research should also explore individual differences in processing subjective experience, which are necessary to inform inclusive active travel policies and support equitable active travel uptake.

5 References

AJZEN, I. 2001. Nature and Operation of Attitudes. *Annual Review of Psychology,* 52**,** 27-58.

BIGAZZI, A., AUSRI, F., PEDDIE, L., FITCH, D. & PUTERMAN, E. 2022. Physiological markers of traffic-related stress during active travel. *Transportation Research Part F: Traffic Psychology and Behaviour,* 84**,** 223-238.

DE VOS, J., SINGLETON, P. A. & GÄRLING, T. 2022. From attitude to satisfaction: introducing the travel mode choice cycle. *Transport Reviews,* 42**,** 204-221.

FISHBEIN, M. & AJZEN, I. 1975. *Belief, attitude, intention, and behavior: an introduction to theory and research,* Reading, Mass, Addison-Wesley Pub. Co.

FREDRICKSON, B. L. & KAHNEMAN, D. 1993. Duration neglect in retrospective evaluations of affective episodes. *Journal of Personality and Social Psychology,* 65**,** 45-55.

GAO, Y., RASOULI, S., TIMMERMANS, H. & WANG, Y. 2020. Prevalence of alternative processing rules in the formation of daily travel satisfaction in the context multi-trip, multi-stage, multi-attribute travel experiences. *Transportation,* 47**,** 1199-1221.

GOEL, R., GOODMAN, A., ALDRED, R., NAKAMURA, R., TATAH, L., GARCIA, L. M. T., ZAPATA-DIOMEDI, B., DE SA, T. H., TIWARI, G., DE NAZELLE, A., TAINIO, M., BUEHLER, R., GÖTSCHI, T. & WOODCOCK, J. 2022. Cycling behaviour in 17 countries across 6 continents: levels of cycling, who cycles, for what purpose, and how far? *Transport Reviews,* 42**,** 58-81.

LIM, T., THOMPSON, J., TIAN, L. & BECK, B. 2023. A transactional model of stress and coping applied to cyclist subjective experiences. *Transportation Research Part F: Traffic Psychology and Behaviour,* 96**,** 155-170.

NIEUWENHUIJSEN, M. J. 2018. Influence of urban and transport planning and the city environment on cardiovascular disease. *Nature Reviews Cardiology,* 15**,** 432-438.

OJA, P., TITZE, S., BAUMAN, A., DE GEUS, B., KRENN, P., REGER-NASH, B. & KOHLBERGER, T. 2011. Health benefits of cycling: a systematic review. *Scandinavian Journal of Medicine & Science in Sports,* 21**,** 496-509.