

(Pre-)registration: Podcasting in-situ: How listening context influences the transportation experience

Based on:

Kirtley, Olivia J., Lafit, Ginette, Achterhof, Robin, Hiekkaranta, Anu P. & Myin-Germeys, Inez (2023, March 16). A template and tutorial for (pre-)registration of studies using Experience Sampling Methods (ESM). <https://doi.org/10.17605/OSF.IO/2CHMU>

Study Information

1. Title
Podcasting in-situ: How listening context influences the transportation experience
2. Authors
Daniela Schlütz, Anna Schnauber-Stockmann, Veronika Karnowski & Teresa K. Naab with the collaboration of Philipp Kübert, Cansin Kuyuköy & Moritz Waldvogel
3. Description (optional)
Podcasting is considered an immersive medium (Dowling & Miller, 2019; Mehendale, 2019; Rime et al., 2022). In many cases, usage is mobile (Morris & Patterson, 2015; Perks & Turner, 2019). To date, there have been few studies that empirically examine the relationship between mobile use and immersion. An exception is the study by Harrison et al. (2023), which, however, is retrospective and cross-sectional. Employing the experience sampling method (Larson & Csikszentmihalyi, 2014), our study, therefore, investigates how the transportation experience is related to listening time and situational context. We use true-crime podcasts as an example because it is one of the most popular genres in Germany and it lends itself particularly well to transportation because of its suspenseful content (Baumann, 2021).
4. Hypotheses
The transportation experience when listening to true crime podcasts is enhanced by....

H1: the longer duration of the listening episode.
H2: the use of headphones (H2a) with noise reduction function (H2b).
H3: the use at home (vs. on the go or other places).
H4: more concentrated use.
H5: The transportation experience when listening to true crime podcasts is reduced by multitasking.

Design Plan

5. Study type
 - 5.1. It is an observational study with German true crime podcast listeners (age 16 years and above).
 - 5.2. n/a
6. Blinding (required for intervention studies)
No blinding is involved in this study.

7. Is there any additional blinding in this study? n/a

8. Study design

We designed a “quasi” MESM-study (Schnauber-Stockmann & Karnowski, 2020) consisting of four phases: (1) preliminary online survey on true crime podcasting use including recruitment for ESM-phase 2, (2) opt-in procedure with technical instruction for the ESM study, (3) ESM study, and (4) post-survey on study experience.

Sampling Plan

9. Existing data

As of the date of submission of this research plan for pre-registration, only the pre-survey has started (in order to recruit participants for the ESM-study), all other data not yet been collected, created, or realized.

10. Explanation of existing data (if applicable) n/a

11. ESM data collection procedure

11.1. Study duration: 14 days

11.2. Type of sampling scheme:

- During the 14-day period we will send out 4 signals/day (assessment frequency); response latency (time lag between prompt and protocol entry) is max. 1 hour after receiving the signal.
- We use a semi-random sampling scheme with pre-defined intervals. The intervals will be tailored to the general use habits of the participants as identified in the opt-in questionnaire (phase 2) with regard to day of the week (working day vs. weekend) and time of day (early morning (until approx. 10 a.m.), morning (10 a.m. to approx. 12 p.m.), lunch (12 p.m. to approx. 2 p.m.), afternoon (2 p.m. to approx. 6 p.m.), evening (6 p.m. to approx. 10 p.m.) and later.

- In the ESM-protocols, participants answer questions on their current or recent podcast usage. The ESM protocol asks for the latest podcast-listening episode (since the last signal (coverage)). In the data analyses, we only focus on episodes with true crime podcasts. We estimate that we will collect approx. 1000 true crime podcast episodes within the 14-day field period.

11.3. Total number and type of items (open-ended or closed) and estimated questionnaire duration.

We here indicate the total number of items per assessment, the complete questionnaires can be found in the appendix (in German).

(1) pre-survey: duration: approx. 15 min.; number of items: 104 closed items and 3 open-ended questions

(2) opt-in procedure: duration: approx. 5 min.; number of items: 13

(3) ESM study: approx. 3 min. per protocol; number of items (depending

on branching): max. 13 and 1 open ended question / 3 (non-users)
(4) post-survey on study experience: approx. 2 min.; number of items:
28 plus 1 open-ended question

- 11.4. Time-out specifications: Following the initial notification, the ESM questionnaire is available to the participant for 60 minutes.
 - 11.5. Additional passive monitoring: There will be no additional passive monitoring.
 - 11.6. Incentivization and increasing participant engagement: Participants who take part in all 4 phases can win noise-cancelling headphones of their choice (for up to 250 EURO). The incentive is not contingent on a certain number of ESM protocols. It is not available, however, for respondents who only take part in phase 1 and 2. Participants will not have access to their compliance information during the data collection period and will not receive reminders to complete notifications.
 - 11.7. Please indicate any additional details that are relevant to the ESM data collection procedure: The ESM study will be administered via smartphone (texts with links to survey). The interface used is SoSci survey (Leiner, 2019).
12. Sample size (number of participants)
- 12.1. Ideally, we will include a total of 200 participants in our ESM sample (age: 16 years and above). We aim for a heterogeneous (non-student) convenience sample. The initial sample will be compiled by contacting users of true crime podcasts at apt social media touch points. Participants will be asked to share the link with other users (snowball effect). The sample for the ESM-study is then recruited at the end of the preliminary questionnaire.
13. Rationale for sample size (if applicable)
- 13.1. We base our estimate of sample size mainly on our financial and logistic scope. The sample of $n=200$ on the person level and the estimated number of true crime podcast episodes collected within the 14-day field period (approx. 1000) is large enough for the planned multi-level analyses (see below).
 - 13.2. More information: n/a
14. Stopping rule (if applicable)
- We will stop at $n=200$ participants for the ESM-study as we cannot afford a larger number (due to the signaling costs). There will be no stopping rule on the situation level: each participant will receive 4 signals per day across the 14-day field period.

Variables

In the following, we only describe those measures relevant for the current preregistration. The questionnaires contain additional measures, see appendix.

- 15. Measured non-ESM/time invariant variables (if applicable)

We will measure gender (phase 1) and transportability (phase 4; Dal Cin et al., 2004) (see questionnaires in appendix).

16. Measured ESM/time-variant variables

16.1. Description of variables (see also appendix)

The central dependent ESM variable is transportation by true crime podcasts. We will measure this at the momentary level throughout the day by asking participants to indicate their agreement with the items of the scale by Appel et al. (2015) on a scale of 1-5, 1 being 'do not agree at all', 5 being 'agree completely' (provided they were listening to a true crime podcast at that time).

As independent variables we ask for the length of the duration of the last listening episode (open ended), the use of headphones (none, headphones, headphones with noise cancelling), location (at home, on the go, at work/at school or somewhere else), parallel activity (none, housework, personal hygiene, work, other media use, sports, eating, getting to rest / falling asleep, and other occupation) and attention (on a 5-point scale from 'inattentive' to 'concentrated').

16.2. More information: Indicate the order and, if applicable, the branching in the ESM questionnaire.

The first question is a filter regarding usage since the last signal: The sample is divided with regard to: a) TCP use, b) other podcast use, and c) no podcast use. Groups a) and b) receive the same ESM questions, group a) additionally answer the items on transportation (see above). Group c) answers decoy questions (what activity are you pursuing right now? where are you at the moment?) to prevent the respondents from learning that this option is the fastest.

17. Open-ended questions (if applicable): n/a

18. Indices (if applicable)

We will compute a mean index for the transportability (person level) and transportation scale across each individual ESM protocol. (situation level) (if internal reliability permits)

19. Manipulated variables (if applicable): n/a

Prior knowledge of data (if applicable)

20. List the publications, conference presentations (papers, posters), and working papers (in prep, unpublished, preprints) you have worked on that are based on the data set: n/a

21. What prior knowledge do you have at the time of pre-registration about trends in the data set you will be working with?

We do not have any prior knowledge of the data, we have not looked into the first collected pre-surveys.

Analysis Plan

22. Statistical models

22.1. What statistical model will you use to test each hypothesis?

For H1 to H5, we will estimate a multilevel model with the transportation scale as the dependent variable and (H1) listening duration, (H2) use of headphones (headphones without noise cancelling vs. headphones with noise cancelling, ref category: no headphones), (H3) use at home vs. away from home, (H4) concentration, and (H5) at least one parallel activity vs. no parallel activity).

We will include the time lag between the ESM-protocol and the podcast use episode as well as gender and transportability as a control variable.

We will use lme4 (Bates et al., 2015) and lmerTest (Kuznetsova et al., 2017) in R (R Core Team, 2021) to conduct the analyses.

- 22.2. If a multilevel analysis is applied, a description of the following elements can be included:
 - Distribution of the outcome variable: metric
 - Random and fixed effects: We do not have specific hypotheses on random slopes.
 - Transformations: metric level 1 predictors will be person-mean centered, metric level 2 predictors will be grand-mean centered.
- 22.3. More information: n/a
23. What will you do should your data violate assumptions, your model not converge or some other analytic problem arises?

We will document all issues and the respective solutions/changes to the preregistration in an amendment.
24. Transformations (if applicable)

We will recode location (at home, on the go, at work/at school or somewhere else) into at home (1) vs. somewhere else (0) and parallel activity into at least on (1) vs. none (0).
25. Inference criteria (if applicable)

p-Values with the cut-off-point of $< .05$.
26. Missing data (if applicable)

Based on common experiences with ESM-studies, we expect a compliance rate of about 75% filled protocol per participant across the 14-day field period with 4 signals per day (see e.g., Stone et al., 2023). However, we will only use those protocols where the participants reported about a true crime podcast use episode.
27. Data exclusion (if applicable)
 - 27.1. Irrespective of whether data are pre-existing, will participants or observations be excluded based upon missingness, due to either technical issues or compliance? If so, specify a decision rule for this including:

We will not exclude participants, irrespective of the number of ESM protocols they filled in.

- How will you define a valid observation?
Each observation (i.e., ESM protocol) that is filled out and reports on true crime podcast use will be defined as valid.
 - How will you define compliance?
Compliance will be defined as the number of valid notifications that were filled out completely. Due to the study design (alert via text message) it is not possible to determine if a participant experienced technical issues.
- 27.2. Which criteria will you use to define an outlier? How will outliers be handled? How are you going to deal with careless responding?
We will not exclude outliers or seemingly carelessly filled out EMS protocols as this is hard to determine in our setting.
28. Exploratory analysis (if applicable)
We expect that different secondary activities influence transportation differently. We also assume that specific types of situations impact on the transportation experience.
- RQ1: How does the type of parallel activity influence transportation?
- For RQ1, we estimate a multilevel model with the transportation scale as the dependent variable and parallel activities as a categorical predictor (dummy coded: housework vs. personal hygiene vs. work vs. other media use vs. sports vs. eating vs. getting to rest / falling asleep vs. other occupation; ref. category: no parallel activity).
- We will include the time lag between the ESM-protocol and the podcast use episode as well as gender and transportability as a control variable.
- In case some of the options are not named/seldomly named, we will combine them in coherent categories: other media use vs. physical activity (sports, eating, housework) vs. other.

Other

29. Other (if applicable): n/a

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