# Social media use, offline social interactions, and loneliness among adults:

## Preliminary findings from an ongoing longitudinal study

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# Introduction

- Social media use (SMU) → well-being
  - Most research focused on general SMU or active/passive SMU (O'Day & Heimberg, 2021)
  - Small effects, often inconsistent across studies (e.g., Godard & Holtzman, 2024)
  - → Differentiate more specific types of SMU

- Dominant focus on adolescents/young adults (e.g., O'Day & Heimberg, 2021)
  - Less evidence on broader adult population

- Effects often hard to interpret
  - What is a „large effect"?
  - Lack of good benchmarks

# Introduction

- Four types of social media use (Tuck, 2024; adapted)
  - **Direct Messaging**: direct communication
  - **Social Engagement**: liking posts, commenting, tagging people
  - **Self-Presentation**: posting about oneself, reading comments
  - **Content Consumption**: scrolling through feeds, checking profiles
- Focus on adult population (18-59) & social well-being (loneliness)
- Benchmark: Offline social interactions
  - Offline communication (e.g., with friends, family, weak ties)
  - Offline social activities (e.g., visiting someone, attending events, eat/drink with someone)

# Introduction

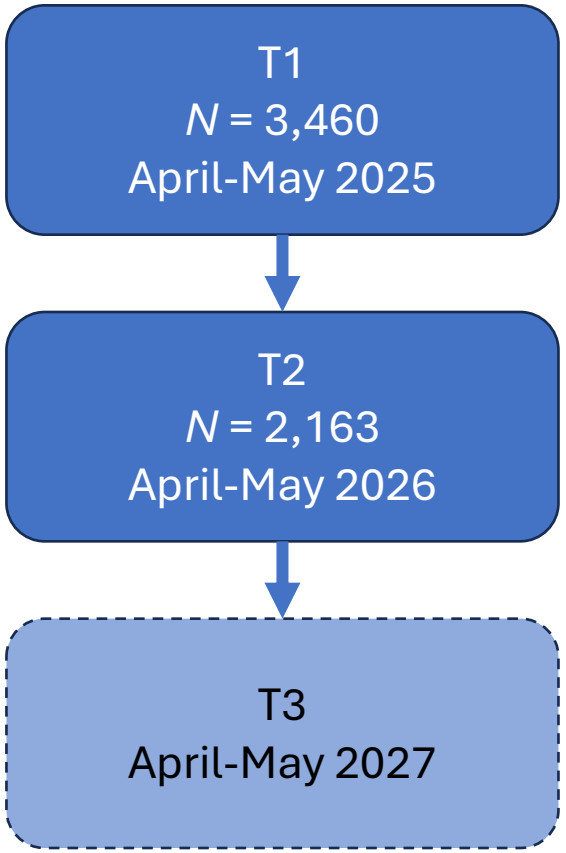
- Social compensation hypothesis (McKenna et al., 2002)
  - Less socially „rich“ people may try to compensate online
  - Underlying assumption – online communication is less demanding
  - Especially important for, e.g., socially anxious people

- Social anxiety as moderator
  - Online social interactions (direct messages, social engagament)
  - Potentially more beneficial for more socially anxious adults
  - Offline social interactions for comparison

# Methods

- *N* = 3,460 Czech adults
- Age: 18-59, *M* = 39.2, *SD* = 11.7
- 49.8 % women, 49.8% men, 0.4% other

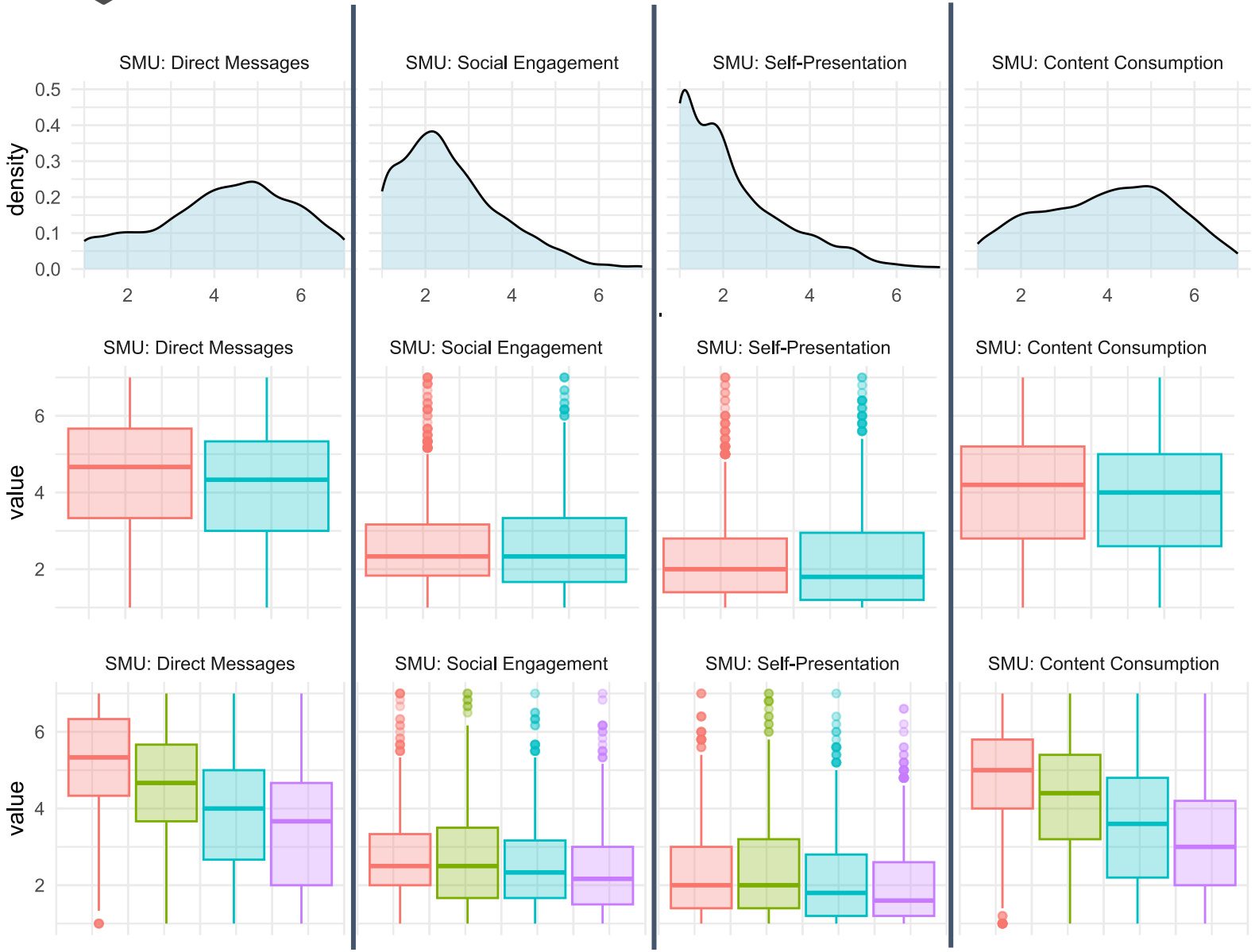
- Online survey (CAWI)
- Quotas:
  - Sex X Age group (2 X 4 categories)
  - Education (4 categories)
  - Municipality population (5 categories)
  - Region (NUTS2, 8 categories)
- Survey agency STEM/MARK

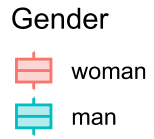


# Measures

| | Items | Source | Sample item | *M* | *SD* | ω | Response scale |
|---|---|---|---|---|---|---|---|
| **Social Media Use** | | | | | | | |
| Direct Messaging | 3 | New | *I text or chat with someone one-on-one using direct/private message.* | 4.26 | 1.60 | - | 1) Never – 7) Multiple times a day |
| Social Engagement | 6 | New | *I comment on someone else's post or story.* | 2.60 | 1.17 | - | |
| Self-Presentation | 5 | Tuck, 2024 | *I made/shared a post or story about something positive that was personally about me* | 2.24 | 1.21 | - | |
| Content Consumption | 5 | Tuck, 2024 | *Scrolled aimlessly through my feed(s)* | 3.97 | 1.54 | - | |
| **Offline Social Interactions** | | | | | | | |
| Offline Communication | 5 | New | *I talk with a friend* | 4.62 | 1.18 | - | 1) Never – 7) Multiple times a day |
| Offline Social Activities | 5 | New | *I do sports or a hobby with someone* | 2.69 | 0.95 | - | |
| **Loneliness** | 7 | UCLA-7 | *I lack companionship* | 2.10 | 0.73 | .88 | 1) Never – 4) Often |
| **Social Anxiety** | 6 | SIAS-6 | *I have difficulty talking with other people* | 2.34 | 0.94 | .89 | 1) Not at all true of me – 5) Completely true of me |
| **Financial Security** | 1 | | *How does your household manage with your total monthly income?* | 3.66 | 1.16 | - | 1) With great difficulty – 6) Very easily |
| **Education** | 1 | | *What is your highest completed level of education?* | 3.92 | 0.87 | - | 1) Unfinished primary – 5) Tertiary |

# **Descriptives:** Social Media Use



**Women & Younger adults**

- More direct messages
- More content consumption

# **Results:** Loneliness

| Predictor | *B* | *SE* | *p* | β |
|---|---|---|---|---|
| Gender | 0.01 | 0.01 | 0.743 | .01 |
| Age | 0.00 | 0.00 | 0.484 | .01 |
| Education | 0.02 | 0.01 | 0.081 | .03 |
| Financial Security | -0.05 | 0.01 | < .001 | **-.13** |
| Social Anxiety | 0.19 | 0.01 | < .001 | **.43** |
| **Social Media Use** | | | | |
| Direct Messaging | -0.02 | 0.01 | 0.014 | **-.05** |
| Social Engagement | 0.04 | 0.01 | < .001 | **.09** |
| Self-Presentation | 0.01 | 0.01 | 0.364 | .02 |
| Content Consumption | 0.02 | 0.01 | < .001 | **.08** |
| **Offline Interactions** | | | | |
| Offline Communication | -0.08 | 0.01 | < .001 | **-.18** |
| Offline Social Activities | 0.00 | 0.01 | 0.689 | -.01 |

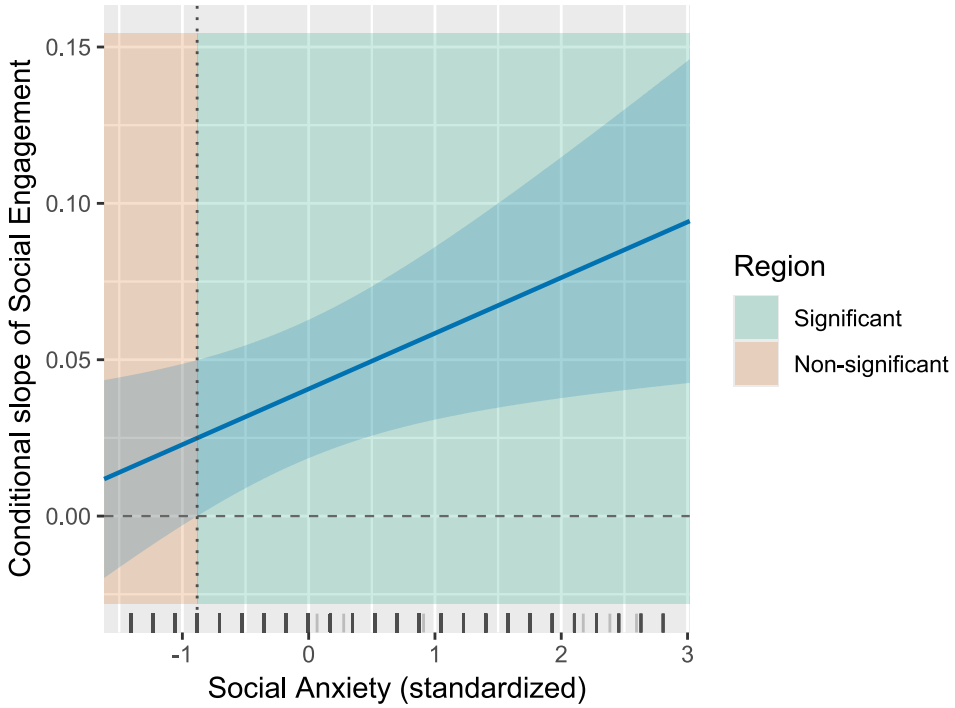
**SEM model**

Model fit:
$\chi^2 = 734.77$, df = 80, $p < .001$
CFI = .94, TLI = .93
RMSEA = .05, 90% CI = [.05, .06]
SRMR = .03

# **Results:** Social Anxiety Moderation

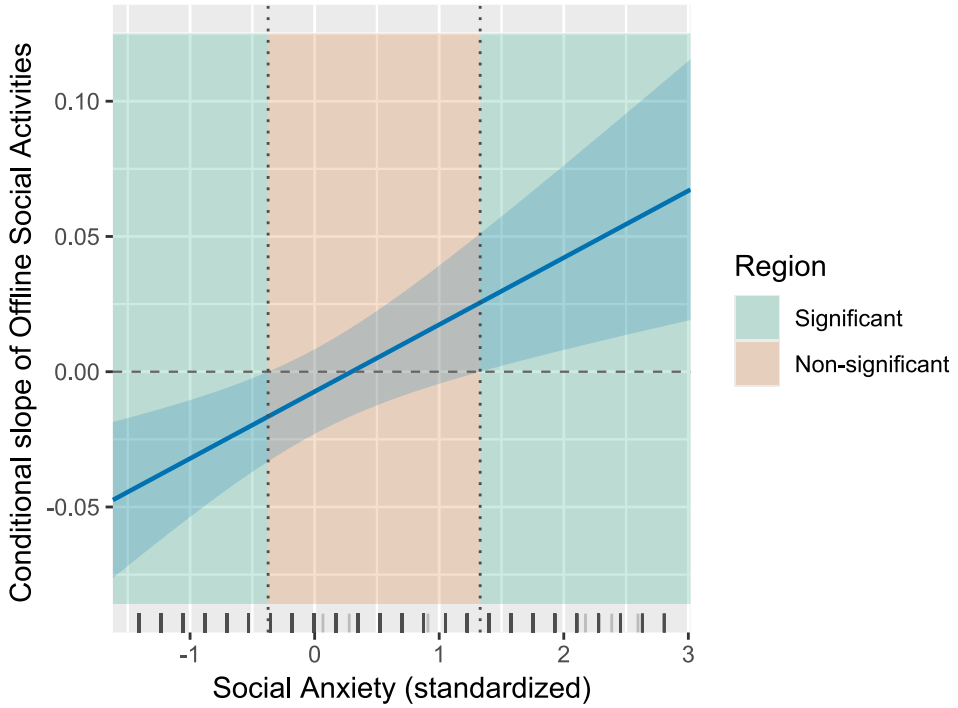
**Social Media Use → Lonliness**

- Direct Messaging (*p* = .983)
- Social Engagement (*p* = .020, β = .04)




**Offline Social Interactions→ Lonliness**

- Offline Communication (*p* = .402)
- Offline Social Activities (*p* = .001, β = .06)



# **Results:** Loneliness T2 (prelim)

| Predictor (T1) | *B* | *SE* | *p* | β |
|---|---|---|---|---|
| Loneliness | 0.70 | 0.04 | < .001 | .76 |
| Gender | -0.01 | 0.01 | .483 | -.01 |
| Age | 0.00 | 0.00 | .753 | -.01 |
| Education | 0.00 | 0.01 | .957 | .00 |
| Financial Security | -0.01 | 0.01 | .070 | -.03 |
| Social Anxiety | 0.04 | 0.01 | < .001 | .10 |
| **Social Media Use** | | | | |
| Direct Messaging | 0.00 | 0.01 | .999 | .00 |
| Social Engagement | 0.00 | 0.01 | .994 | .00 |
| Self-Presentation | 0.00 | 0.01 | .676 | .01 |
| Content Consumption | 0.00 | 0.01 | .574 | .01 |
| **Offline Interactions** | | | | |
| Offline Communication | -0.03 | 0.01 | .003 | -.07 |
| Offline Social Activities | 0.00 | 0.01 | .928 | .00 |

**SEM model**

Model fit:
$\chi^2 = 2058.56$, df = 212, $p < .001$
CFI = .92, TLI = .90
RMSEA = .06, 90% CI = [.06, .06]
SRMR = .09

Very preliminary results
T3 data necessary for RI-CLPM

# Discussion

- Social media use (SMU)
  - Direct messaging and content consuption more common
  - Both also more common among younger adults and women
  - Social engagement, self-presentation – less common, small differences

- SMU → Loneliness
  - Weak effects (compared to offline communication)
  - Other factors may matter more (e.g., social anxiety, financial security)
  - Direct messaging – Lower loneliness
  - Social enagement & content consuption – Higher loneliness
  - BUT – cross-sectional findings (T2 loneliness – no effects of SMU)

# Discussion

- Social anxiety moderation
  - Social engagement (SMU) – more S.Anx. → stronger positive link to loneliness
  - Offline social activities – low S.Anx → negative link; high S.Anx → positive link
  - BUT all effects are weak

- Future plans
  - Collect T3 data
  - Analyze between- and within-person effects (RI-CLPM)
  - Test potential displacement mechanisms (SMU → Offline social interactions)

# Thank you!

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