

# Research Question 1

Investigate the impact of social contact frequency on happiness. Specifically, examine whether there is a significant difference in happiness between people who engage in social contact with friends less than once a week and those who engage in social contact five or more times a week.

What to expect is not only whether there is a relationship, what we want is to what extent the independent variable, but frequency of interaction affect a dependent variable, happiness scale.

## Hypothesis

It is expected that the group with low social contact frequency, such as once a week or none, will have a lower happiness scale score compared to the group with five or more times per week.

## Methodology -> hypothesis testing

### t-test:

If the assumption of a normal distribution can be made, an independent samples t-test will be used to examine whether the mean difference in happiness scores between the group with less than one social contact per week and the group with five or more contacts per week is significant.

**Effect Size:** Cohen's d will be used to evaluate the effect size. An effect size of  $d=0.2$  will indicate a small effect,  $d=0.5$  a medium effect, and  $d\geq 0.8$  a large effect, allowing for a quantitative assessment of the effect size.

## Variables

Independent -> CONNECTION\_social\_num\_friends\_p7d\_grouped

Dependent -> WELLNESS\_subjective\_happiness\_scale\_happy

This study aims to scientifically elucidate the relationship between social contact and happiness, exploring how social connections contribute to individual health and well-being. Highlighting the importance of social connections aligns with the project's objective.

## Research question 2

Investigate to what extent time spent alone influences various dimensions of loneliness. Specifically, quantify how much extended time spent alone (e.g., more than five hours a day) increases specific loneliness scores, such as emotional loneliness or family disconnection, compared to individuals who spend less time alone (e.g., less than one hour a day).

By identifying the degree of impact, this study aims to clarify how much prolonged time alone contributes to heightened loneliness, thus providing insights for potential interventions to reduce isolation.

### Hypothesis

It is hypothesized that individuals who spend more time alone daily will have significantly higher loneliness scores across various loneliness dimensions. This hypothesis suggests that extended periods alone may intensify certain loneliness types, such as emotional or social loneliness, more than others.

### Methodology -> Multiple Linear Regression and Effect Size Calculation

- **Multiple Linear Regression Analysis:** We will use multiple linear regression with various loneliness scores as the dependent variables and the amount of time spent alone as the independent variable, controlling for other demographic factors if available. This will allow us to estimate how much a reduction in time spent alone might decrease loneliness scores and identify the most affected loneliness types.
- **Effect Size (Cohen's  $f^2$  or Adjusted  $R^2$ ):** To quantify the impact, Cohen's  $f^2$  or adjusted  $R^2$  will be calculated for each loneliness type. For instance, an  $f^2$  value of 0.02 would indicate a small effect, 0.15 a medium effect, and 0.35 a large effect, providing a quantifiable measure of the time alone's impact on loneliness.

### Variables

#### Independent

We will collect a number of each datas and accumulate.

CONNECTION\_social\_days\_family\_p7d\_grouped  
CONNECTION\_social\_days\_friends\_p7d\_grouped  
CONNECTION\_social\_days\_coworkers\_and\_classmates\_p7d\_grouped  
CONNECTION\_social\_days\_neighbours\_p7d\_grouped

CONNECTION\_social\_time\_family\_p7d\_grouped  
CONNECTION\_social\_time\_friends\_p7d\_grouped  
CONNECTION\_social\_time\_coworkers\_and\_classmates\_p7d\_grouped  
CONNECTION\_social\_time\_neighbours\_p7d\_grouped  
CONNECTION\_social\_num\_family\_p7d\_grouped  
CONNECTION\_social\_num\_friends\_p7d\_grouped  
CONNECTION\_social\_num\_coworkers\_and\_classmates\_p7d\_grouped  
CONNECTION\_social\_num\_neighbours\_p7d\_grouped  
CONNECTION\_activities\_talked\_day\_p3m  
CONNECTION\_activities\_talked\_family\_p3m  
CONNECTION\_activities\_talked\_job\_p3m  
CONNECTION\_activities\_talked\_hobbies\_p3m  
CONNECTION\_activities\_phone\_p3m  
CONNECTION\_activities\_letter\_or\_email\_p3m  
    CONNECTION\_activities\_checked\_in\_p3m  
    CONNECTION\_activities\_text\_or\_messaged\_p3m  
    CONNECTION\_activities\_chat\_p3m  
CONNECTION\_activities\_video\_chat\_p3m  
    CONNECTION\_activities\_group\_video\_chat\_p3m  
    CONNECTION\_activities\_walk\_p3m  
CONNECTION\_activities\_coffee\_p3m  
CONNECTION\_activities\_board\_games\_p3m  
    CONNECTION\_activities\_computer\_games\_p3m  
    CONNECTION\_activities\_onlinegames\_p3m  
    CONNECTION\_activities\_visited\_friends\_p3m  
    CONNECTION\_activities\_visited\_family\_p3m  
    CONNECTION\_activities\_community\_p3m  
CONNECTION\_activities\_helped\_p3m  
CONNECTION\_activities\_meeting\_work\_p3m  
    CONNECTION\_activities\_discussion\_group\_p3m  
    CONNECTION\_activities\_group\_exercise\_p3m  
CONNECTION\_activities\_church\_p3m  
CONNECTION\_activities\_new\_friend\_p3m  
CONNECTION\_activities\_hug\_p3m  
CONNECTION\_activities\_kissed\_p3m  
CONNECTION\_activities\_sex\_p3m

## **Dependent**

LONELY\_dejong\_emotional\_social\_loneliness\_scale\_close

Unique ID will be used so that it helps to accumulate the number of all kind of social interactions.

## Research Question 3

Investigate how various dimensions of social support impact subjective happiness. Specifically, examine to what extent different types of social support (emotional, instrumental, and decision-making support) from family, friends, and special individuals influence happiness.

This study seeks to uncover how specific aspects of social support correlate with higher levels of subjective happiness, aiming to quantify the importance of various social connections.

### Hypothesis

It is hypothesized that individuals who report higher levels of specific social supports, particularly emotional and instrumental support from family and friends, will have higher happiness scores. Moreover, a combination of supports from various sources is expected to exhibit an amplified effect on happiness.

### Methodology -> Multiple Linear Regression and Interaction Analysis

- **Multiple Linear Regression Analysis:** Perform multiple regression with happiness as the dependent variable and various social support dimensions as independent variables to determine the impact of each support type.

- **Interaction Analysis:** Include interaction terms to explore the combined effect of family and friend support on happiness, assessing whether certain types of support together provide an added benefit.
- **Effect Size (Adjusted R<sup>2</sup>)**
- **Variance Partitioning:** Utilize variance partitioning to isolate the contribution of each social support type, providing a clearer understanding of their unique and combined influence on happiness.

## Variables

- **Independent Variables:**

PSYCH\_zimet\_multidimensional\_social\_support\_scale\_comfort  
 PSYCH\_zimet\_multidimensional\_social\_support\_scale\_decisions  
 PSYCH\_zimet\_multidimensional\_social\_support\_scale\_family\_emo  
 tional  
 PSYCH\_zimet\_multidimensional\_social\_support\_scale\_family\_hel  
 ps  
 PSYCH\_zimet\_multidimensional\_social\_support\_scale\_feelings  
 PSYCH\_zimet\_multidimensional\_social\_support\_scale\_gets\_me\_no  
 t\_scored  
 PSYCH\_zimet\_multidimensional\_social\_support\_scale\_go\_wrong  
 PSYCH\_zimet\_multidimensional\_social\_support\_scale\_help  
 PSYCH\_zimet\_multidimensional\_social\_support\_scale\_joys  
 PSYCH\_zimet\_multidimensional\_social\_support\_scale\_need  
 PSYCH\_zimet\_multidimensional\_social\_support\_scale\_positive\_n  
 ot\_scored  
 PSYCH\_zimet\_multidimensional\_social\_support\_scale\_problems\_f  
 amily  
 PSYCH\_zimet\_multidimensional\_social\_support\_scale\_problems\_f  
 riends  
 PSYCH\_zimet\_multidimensional\_social\_support\_scale\_sorrows

- **Dependent Variables:**

- WELLNESS\_subjective\_happiness\_scale\_always\_happy
- WELLNESS\_subjective\_happiness\_scale\_happy
- WELLNESS\_subjective\_happiness\_scale\_never\_happy
- WELLNESS\_subjective\_happiness\_scale\_peers

This study aims to provide a comprehensive view of how distinct facets of social support contribute to individual happiness. The findings could inform strategies that emphasize specific types of support, potentially enhancing overall well-being and supporting the project's objective of promoting social connections for improved health outcomes.