

Supplementary Material of the (Cross-Cultural Study on Social Media Usage
and its Correlation with
Mental Health and Family Functioning) Paper

Content:

- A- User Preferences for Building a Mobile Application Survey.
- B- User Preferences Design Focus Group.
- C- The Social Brain Application Details.
 - C.1- Social Brain application interface screens.
 - C.2- Social Brain website.
 - C.3- Social Brain survey.
- D- The Social Brain Mobile Application End of Participation Survey.
- E- Extra Details on the Statistical Analysis Performed.

A- User Preferences for Building a Mobile Application Survey.

Survey

** Indicates required question*

By checking the below box I confirm that I am above 18 years old *

Check all that apply.

☐ I am above 18 years old

Skip to section 2 (Brief Application Description:)

Brief Application Description:

This survey is held by a-. The survey will reveal user preference for developing an application which attempts to measure the effect of frequency and nature of social media platforms use on mental health. Your participation will help the researcher with application development and it is much appreciated.

How does the application work?

The application will collect user authorized data about social media use (nature and frequency) in addition to user mental health indicators.

What will the user benefit from the application?

The user will get constant feedback with informative illustrations about the time they spend on social media and the nature of their use in addition to their mental health state.

What will the researcher benefit from the application?

The application will be the data collection method for the- , which hopefully will make a contribution to science.

Skip to question

1- Level of Education (you can indicate the level of education during the period * you are in):

Mark only one oval.

- ☐ High School
- ☐ Bachelor's degree
- ☐ Master's degree
- ☐ Doctorate degree
- ☐ None of the above

2- Age: *

Mark only one oval.

- 18- ☐ 24 years old
- 25- ☐ 34 years old
- 35- ☐ 44 years old
- 45- ☐ 54 years old
- 55- ☐ 64 years old
- 65- ☐ 74 years old
- 75 ☐ years or older

3- Gender: *

Mark only one oval.

- ☐ Female
- ☐ Male
- ☐ Prefer not to say

4- Race: *

Mark only one oval.

- ☐ American
- ☐ Hispanic or Latino
- ☐ European
- ☐ British
- ☐ Arab
- ☐ Asian
- ☐ African
- ☐ Australian
- ☐ Other

5- Occupation: *

Mark only one oval.

- ☐ Working full time
- ☐ Working part-time
- ☐ Carer (of home, family, etc.) (Full time)
- ☐ Student (full-time)
- ☐ Temporarily unemployed (but actively seeking work)
- ☐ Retired
- ☐ Other permanently unemployed (e.g. chronically sick, independent means)

6- To understand how the application works you prefer: *

Mark only one oval.

- ☐ Detailed video
- ☐ Brief written steps

Only if you choose video in the previous question answer this one please.

6.1- If the video included a character which gender you would like it to be:

Mark only one oval.

- ☐ Male
- ☐ Female

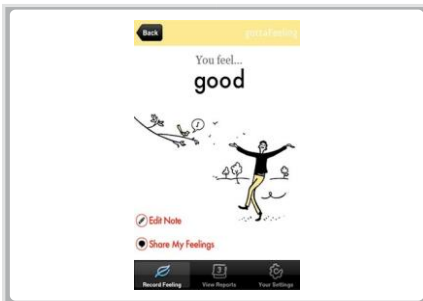
7- Which of the following application design do you prefer? * Mark only one oval.



☐ Option 1



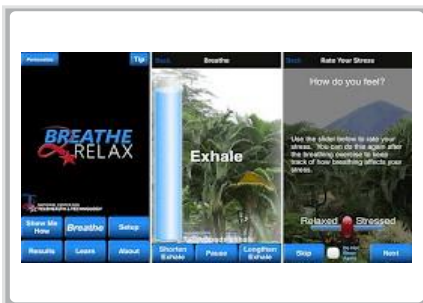
☐ Option 2



☐ Option 3



☐ Option 4



☐ Option 5

8- One of the application tasks is to ask the user questions.

8.1- how many questions would you prefer to be asked during the day: *

Mark only one oval.

- 3 ☐
- 4 ☐
- 5 ☐
- 6 ☐

8.2- Which of these statements represent your opinion: *

Mark only one oval.

- ☐ would like the questions to be grouped and asked once a day
- ☐ would like the questions to be asked in separate times of the day

Only if you choose (I would like the questions to be grouped and asked once a day) in the previous question answer this one please.

8.2.1- When would you prefer to be asked the questions:

Mark only one oval.

- ☐ Morning
- ☐ Afternoon
- ☐ Evening

8.3- Would you be comfortable answering questions regarding family ties? *

Mark only one oval.

- Yes ☐
- No ☐

8.4- Which style do you prefer to answer questions in? *

Mark only one oval.

- ☐ Multiple choices
- ☐ Checkbox
- Line ☐ scale (for example from 1 to 10)
- Faces ☐ or emoji's

8.5- Would you be more comfortable writing your own short answer if the * question was about your mood or feelings?

Mark only one oval.

- Yes ☐
- No ☐

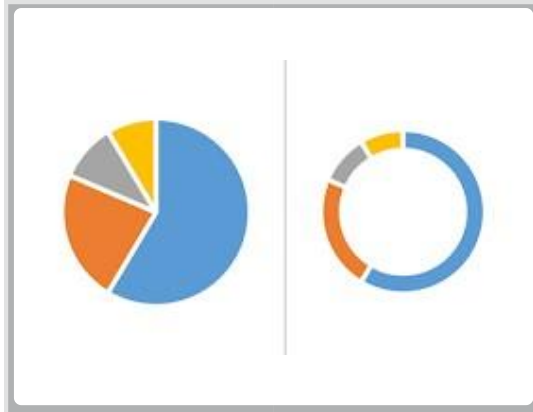
9- The application will give the user feedback about their social media usage and mental health state.

9.1- How frequently would you rather be given feedback? *

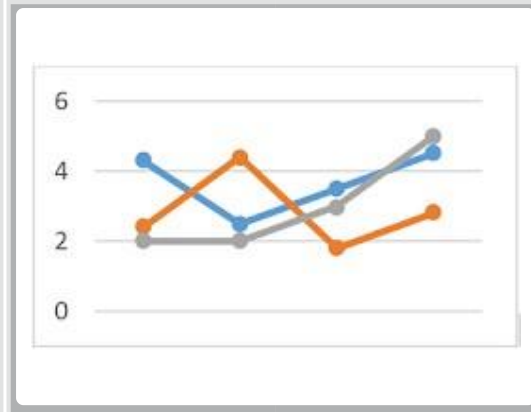
Mark only one oval.

- Daily ☐ Weekly.
- ☐ Monthly.
- 9.2- ☐ Which of the following illustrations you would prefer for receiving feedback? *

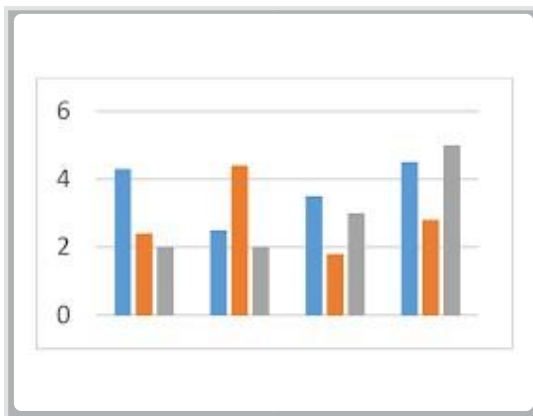
Mark only one oval.



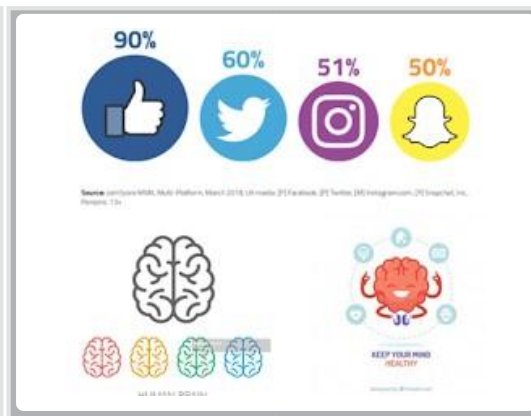
☐ Using a pie chart



☐ Using a line chart



☐ Using a bar chart



☐ Using platforms symbol and brain graph

9.3- Do you prefer to be given suggested solutions or strategies in addition to * the illustrations in the feedback?

Mark only one oval.

Yes ☐ No ☐

10- Would you like the application to include brain games or puzzles? *

Mark only one oval.

Yes ☐
No ☐

11- Would you like the application to include links to mental health support ^{*} organizations?

Mark only one oval.

Yes ☐

No ☐

12- What do you prefer we call the application? ^{*}

13- How long can you commit to use such an application? ^{*}

Mark only one oval.

3 ☐ Months

6 ☐ Months

9 ☐ Months

One ☐ year

14- Do you have any suggestion regarding the application?

Research Ethics Number-

This content is neither created nor endorsed by Google.

Google Forms

B- User Preferences Design Focus Group.

The creation of these family representations was a collaborative effort led by a focus group comprising six individuals. Their collective commitment was directed towards the identification and development of a gender-neutral family representation that aligns seamlessly with our inclusive criteria. The initial attempt was to make the parents to be without hair and without using their revealing features as seen in Fig.1. The response we got from the focus group by 100% all of them said the parents looked sick.

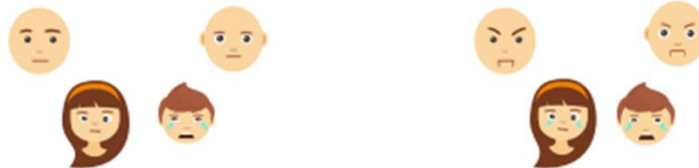


Fig.1 The initial attempt of family representations.

In the second attempt, we tried to make the parents with short hair, including a family representation of something not human-like 'alien', or make it as an emoji as seen in Fig.2. The response we've got by 100% everyone loved that emoji.

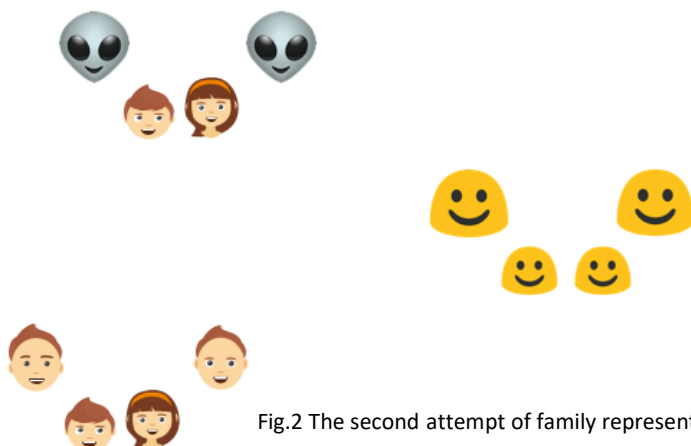


Fig.2 The second attempt of family representations.

As a result, we have decided to go ahead with the emoji as a family representation that adheres to include criteria based on user's preferences as seen in Fig.3.



Fig.3 The Final family representations.

C- The Social Brain Application Details.

C.1- Social Brain application interface screens.

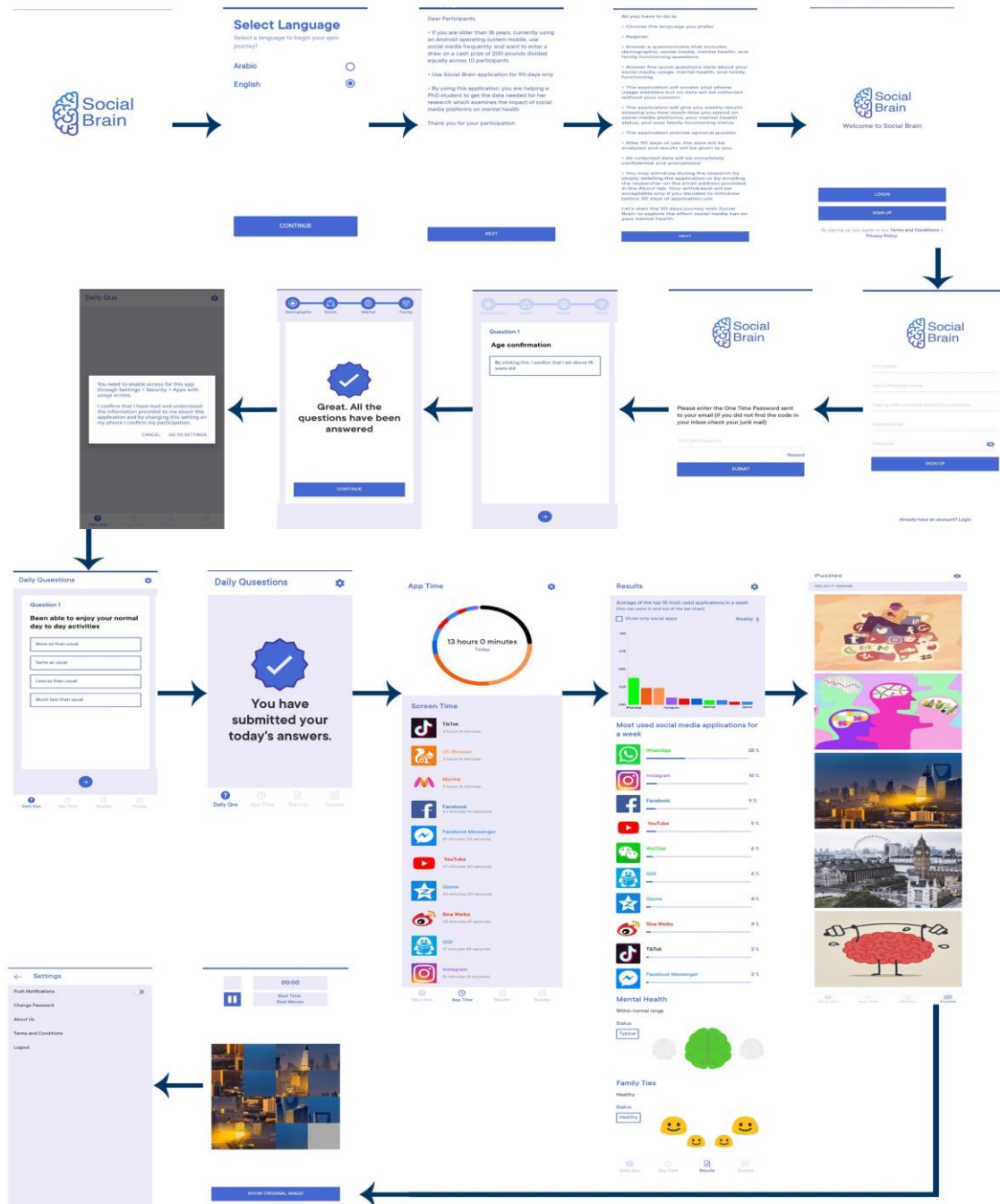





Fig.4 Social Brain Application interface screens.

C.2- Social Brain website.


[Home](#)
[Using The Application](#)
[About](#)
[Frequently Asked Questions](#)
[Privacy Policy](#)


'Let us explore the effect social media has on your mental health'

if you are older than 18 years, currently using an android operating system mobile, use social media frequently, and want to enter a draw on a cash prize of 200 pounds divided equally across 10 participants. use the social brain application for 90 days only. by using this application, you are helping a phd student to get the data needed for her research which examines the impact of social media platforms on mental health.

App Screenshots.

Here are the actual screenshots of the application for you to preview.



Download and Start Using!

For a step by step guide to the Social Brain application, click [here](#) you can download and start using the app via this button.



WHO IS RUNNING THIS STUDY?

Social Brain application is [REDACTED]

WHO CAN PARTICIPATE IN THIS STUDY?

We are looking for volunteers aged 18 years or older, who are based in United Kingdom or Kingdom of Saudi Arabia and who own a smartphone device. Your participation is welcomed whether or not you consider yourself to have good or poor mental health. What kind of phone do I need? Android 6.0 (Marshmallow) and above.

IF I AGREE TO PARTICIPATE, WHAT INFORMATION DO I NEED TO PROVIDE?

When you first use the Social Brain application, you will be asked to complete an initial questionnaire, which takes about 30 minutes. The questionnaire includes demographic, social media, mental health, and family functioning questions. You can take a break after completing each section of the questionnaires. After that, you will be asked to answer five quick questions daily about your social media usage, mental health, and family functioning for 90 days only. The application will access your phone usage statistics to detect how much time you are spending on social media platforms but no data will be collected without your consent. Participation in this study is private and confidential and your entries will be anonymous.

HOW WILL MY DATA BE USED?

The data you provide will be stored on a protected server and used for academic research, in order to understand the impact social media has on your mental health and family functioning. Weekly results will be given to you in the results tab in the application showing you how much time you spend on social media platforms, your mental health status, and your family functioning status. In the weekly results, you can explore more about the average of the top 10 most used applications, choose to show only social media out of those applications, and go in the details of each day of the week. After 90 days of use, the data will be analysed and results will be given to you. The data you provide may also be used for other research purposes in the future. The researcher aims to publish the results of this research in scientific journals.

IF I AGREE TO PARTICIPATE IN THIS RESEARCH, HOW MUCH TIME WILL IT TAKE?


[Download the App](#)

Fig.5 Social Brain website.

C.3- Social Brain survey.

Demographic questions.

- 1- Age: 18-24 years old, 25-34 years old, 35-44 years old, 45-54 years old, 55-64 years old, 65-74 years old, 75 years or older.
- 2- Gender: Female, Male, Prefer not to say
- 3- The country you are currently living in: a list of countries was provided
- 4-Do you suffer from a psychological condition? Yes, No, Not sure.
- 5- Do you suffer from a medical condition? Yes, No, Not sure.
- 6- What would best describe you? White (English, Welsh, Scottish, Northern Irish, British, Irish, Gypsy or Irish Traveller, Any other White background), Asian (Indian, Pakistani, Bangladeshi, Chinese, any other Asian background), Black (African, Caribbean, any other Black background), Arab, Mixed / Multiple ethnic groups (White and Black Caribbean, White and Black African, White and Asian, any other Mixed Multiple ethnic backgrounds), Any other ethnic group
- 7- What type of place do you live in? Villa or mansion, House in a compound, House with garden or backyard, House without garden or backyard, Flat in a block, Student halls, Room(s) in a shared, house (for example as a lodger), None of the above
- 8- Which of these fields' best describes your major or your field of work? a list of majors was provided
- 9- Level of Education (you can indicate the level of education during the period you are in): High School, Bachelor's degree, Master's degree, Doctorate degree, none of the above.

Social Media Questions.

- 1- How often currently do you go on social media (on average, across all the social media platforms that you use)? Almost never or rarely, Just about every month, every couple of days, Just about every day, every couple of hours, Just about every hour, Every couple of minutes.
- 2- On average how much time do you think you spend on social media per day? Less than 1 Hour, 1-2 Hours, 2 -3 Hours, 3-5 Hours, 5-7 Hours, More than 7 Hours.

3- Every time you log in to social media, on average how long do you spend logged in (on average, across all the social media platforms that you use)? About 15 minutes or less, About 30 minutes about an hour, More than an hour.

4- Do you feel it is healthy to spend that much time online? Yes, No

5- When do you currently access social media? (Choose as many as applicable) Morning (from 5 am to 11:59 am), Afternoon (from 12:00 pm to 6:00 pm), Evening (from 6:00 pm to 11:59 pm), Midnight (exactly 12:00 am to 4:59 am).

6- Do you consider yourself addicted to social media? Yes, No

7- What do you use social media for? (Choose as many as applicable) Keeping in touch with friends and family,

Event planning, Buying and selling Inspiration, News, To make new friends, To find employment, To browse/ time waste To raise awareness, To provide support to others, To share your posts, To work, None of the above.

8- Does social media distract you when you need to be productive? Yes, No.

9- Do you care about how many people like or view your posts/pictures? Yes, No.

10- Have you ever been cyberbullied in any way through social media? Yes, No.

11- When you see someone post about the intriguing events going on in their life, are you depressed by the idea that your life isn't as "cool" or "eventful" as theirs? Yes, No.

12- When you see pictures posted of a person who has the body type that you desire, do you put yourself down or think negatively about your body? Yes, No.

13- Do you accept friend requests/followers that you do not know in order to be viewed as more popular? Yes, No.

14- Has social media affected your relationship with family members? Yes, No.

14.1- If yes, can you indicate the type of effect social media has on your relationship with family members? Positive effect, Negative effect.

15- Do you feel as if you have an online persona? (Are you a different person online?) Yes, No.

15.1- If yes, why do you feel you cannot be yourself? (Short answer)

16- Do you feel social media has impacted your mental health? Yes, No.

16.1- If yes, in what ways has it affected you? (Choose as many as applicable) Anxiety, Self-Esteem, Depression, Body Dysmorphia, Addiction to Social Media, Eating Disorder, It has not affected me, None of the above.

17- What emotions do you experience when using social networking sites? (Choose as many as applicable) Rejection,

Happiness, Boost self-esteem, Jealousy, Motivation, Inspiration, Fear of missing out, Lower self-esteem, Sense of belonging, None of the above.

18- Which social media do you feel affects your mental health the most and why?

19- Personally, what do you think the positives and negatives are of social media?

20- Choose a number from 0 to 5 to the following most used social media platforms based on your usage where

(0 is a social media platform that you do not use), (1 is the most negative social media platform in your opinion), and (5 is the most positive social media platform in your opinion):

20.1-Facebook, 20.2-Instagram, 20.3-LinkedIn, 20.4-Snapchat, 20.5-Telegram, 20.6-TikTok, 20.7-Twitter, 20.8-WhatsApp, 20.9-YouTube, 20.10-Pinterest.

21- If there is a social media platform or platforms you would like to add to the previous list please add it below, indicate whether you think it is positive or negative, and mention why?

Mental Health Questions .

1- Been able to concentrate on what you are doing? Better than usual, Same as usual, Less than usual, Much less than usual.

2- Lost much sleep over worry? Not at all, No more than usual, Rather more than usual, Much more than usual.

3- Felt that you are playing a useful part in things? More so than usual, Same as usual, Less so than usual, Much less than usual.

4- Felt capable of making decisions about things? More so than usual, Same as usual, Less than usual

5- Felt constantly under strain? Not at all, No more than usual, Rather more than usual, Much more than usual

6- Felt you couldn't overcome your difficulties? Not at all, No more than usual, Rather more than usual, Much more than usual.

7- Been able to enjoy your normal day-to-day activities? More so than usual, Same as usual, Less so than usual, Much less than usual.

8- Been able to face up to your problems? More so than usual, Same as usual, Less than usual.

9- Been feeling unhappy or depressed? Not at all, No more than usual, Rather more than usual, Much more than usual.

10- Been losing confidence in yourself? Not at all, No more than usual, Rather more than usual, Much more than usual.

11- Been thinking of yourself as a worthless person? Not at all, No more than usual, Rather more than usual, Much more than usual.

12- Been feeling reasonably happy, all things considered? More so than usual, Same as usual, Less so than usual

For more information about mental health support, you can refer to <https://www.mind.org.uk/>
or <https://www.samaritans.org/>

Family Functioning Questions.

- 1- Planning family activities is difficult because we misunderstand each other Strongly agree, Agree, Disagree, Strongly disagree.
- 2- In the time of crisis, we can turn to each other for support as a family Strongly agree, Agree, Disagree, Strongly disagree.
- 3- As a family, we cannot talk to each other about the sadness we feel Strongly agree, Agree, Disagree, Strongly disagree.
- 4- In my family, individuals are accepted for what they are Strongly agree, Agree, Disagree, Strongly disagree.
- 5- We avoid discussing our fears and concerns as a family Strongly agree, Agree, Disagree, Strongly disagree.
- 6- As a family, we can express feelings to each other Strongly agree, Agree, Disagree, Strongly disagree.
- 7- There are lots of bad feelings in my family Strongly agree, Agree, Disagree, Strongly disagree.
- 8- In my family, I feel accepted for what I am Strongly agree, Agree, Disagree, Strongly disagree.
- 9- Making decisions is a problem for my family Strongly agree, Agree, Disagree, Strongly disagree.
- 10- As a family, we are able to make decisions about how to solve problems Strongly agree, Agree, Disagree, Strongly disagree.
- 11- My family do not get along well together Strongly agree, Agree, Disagree, Strongly disagree.
- 12- As a family, we confide in each other Strongly agree, Agree, Disagree, Strongly disagree.

For more information about family support, you can refer to <https://www.familylives.org.uk/how-we-can-help/>

or

<https://www.familysupportni.gov.uk/>

D- The Social Brain Mobile Application End of Participation Survey.



English



Default Question Block

Key Information and Consent

You are invited to participate in this survey that will contribute to a research project taking place at- (Ethical Clearance Reference-). Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take the time to read the following information carefully and discuss it with others if you wish.

What is the purpose of the study?

This survey is created for all of you who participated in the Social Brain Application study. To get your opinion about the Application after the study is completed.

Why have I been invited to take part?

This is an anonymous survey. You can choose to participate voluntarily if you are over 18 years old and can use a computer. We invite you to take part in this research study because you have shown an interest in taking part in our study.

What will happen if I take part?

You will first be asked to fill in a simple questionnaire. The survey will ask you a series of questions regarding your opinion of the Social Brain Application.

Duration and Privacy:

The survey will take you approximately 10-15 minutes to complete. Your responses will be kept completely anonymous. Any data that we collect will be stored securely on the - servers. We take your privacy very seriously.

Do I have to take part?

Participation is completely voluntary. You should only take part if you want to and choosing not to take part will not disadvantage you in any way. You are free to withdraw at any point during the completion of the survey, without having to give a reason by simply not submitting the study. We believe this study presents no risks to you. Once you submit the survey, it will no longer be possible to withdraw from the study because the data will be anonymous.

Contact Information:

If you have any questions, require more information about this study, or think you have been harmed by participating please contact the primary researcher using the following contact details:

-

What if I have further questions, or if something goes wrong?

If this study has harmed, you in any way or if you wish to make a complaint about the conduct of the study you can contact -using the details below for further advice and information:

-

Please note that this survey will be best displayed on a laptop or desktop computer.

We are extremely grateful for your contribution.

Thank you for your help and support.

Social Brain Team,

Please confirm if you have participated in the Social Brain study.

- ☐ I have participated in the Social Brain study
- ☐ I have not participated in the Social Brain study

2. After seeing the results representations every Sunday, you are making plans to change how much time you spend on social media platforms?

- ☐ Yes
- ☐ Maybe
- ☐ No

3. After seeing the results representations every Sunday, you are making plans to change the type of social media platforms you are using?

- ☐ Yes
- ☐ Maybe
- ☐ No

4. After seeing the results representations every Sunday, you have changed how much time you spend on social media platforms?

- ☐ Yes
- ☐ Maybe
- ☐ No

5. After seeing the results representations every Sunday, you have changed the type of social media platforms you are using?

- ☐ Yes
- ☐ Maybe
- ☐ No

6. After using the Social Brain App, do you think using social media affects your mental health?

- ☐ Yes
- ☐ Maybe
- ☐ No

7. After using the Social Brain App, do you think using social media affects your family functioning?

- ☐ Yes
- ☐ Maybe
- ☐ No

8. In your opinion, how good is the visualisation that represents the data, you see every Sunday on the results tab?

Extremely bad

☐

Somewhat bad

☐

Neither good nor
bad

☐

Somewhat good

☐

Extremely good

☐

9. In your opinion, how good is the visualisation that represents the data, you see every Sunday on the results tab?



10. What is your interpretation of the visualisation that represents the data, you see every Sunday on the results tab?

User experience

1. How would you rate your experience with the Social Brain App?

Extremely bad

☐

Somewhat bad

☐

Neither good nor bad

☐

Somewhat good

☐

Extremely good

☐

2. Why you have chosen this rating (from the previous question)?

3. Would you like to change anything in the Social Brain App?

☐ Yes

☐ No

3.1 What would you like to change in the Social Brain App and why?

4. Did you face any challenges while using the Social Brain App?

☐ Yes

☐ No

4.1 Please indicate what challenges you have faced while using the Social Brain App.

5. Did you have any concerns about the Social Brain App?

☐ Yes

☐ No

5.1 Please indicate what concerns you have about the Social Brain App?

(Choose all that apply)

☐

Security

☐

Privacy

☐

Device memory

☐

Device battery

☐

Internet consumption

☐

Other

6. Did you decided to disable the tracking and storage settings in your phone while using the Social Brain App?

☐ Yes

☐ No

6.1 What made you choose to disable the settings?

7. Regarding the design and usability of the Social Brain App, how would you rate it?

Extremely bad

☐

Somewhat bad

☐

Neither good nor bad

☐

Somewhat good

☐

Extremely good

☐

8. Why you have chosen this rating (from the previous question) for the design and usability of the Social Brain App?

Powered by Qualtrics

D-Extra Details on the Statistical Analysis Performed.

Table 1. Respondents demographics

	<i>N</i>	%
Age (years) 18–		
24	8	32
25–34	11	44
35–44	5	20
45–54	1	4
Gender		
Male	10	40
Female	15	60
Nationality		
Saudi	1	4
British	3	12
Malaysian	13	52
Others	8	32
Religion		
Atheist	9	36
Buddhism	2	8
Christianity	4	16
Islam	10	40
Country of birth Saudi		
Arabia	1	4
United Kingdom	1	4
Malaysia	13	52
Others	10	40
Current county of stay		
United Kingdom	5	20
Malaysia	13	52
Others	7	28
Psychological condition		
Yes	1	4
No	17	68
Not sure	7	28

	<i>N</i>	%
Medical condition		
Yes	3	12
No	22	88
Ethnicity		
White	2	8
Asian	14	56
Black	1	4
Arab	7	28
Others	1	4
Marital status		
Married	9	36
Divorced	1	4
Never been married	15	60
Occupation		
Full time	19	76
Part time	5	20
Retired	1	4
Degree grading system of students		
Option A	10	40
A (Excellent)	6	24
B (Good)	4	16
Option B	5	20
Distinction	1	4
Merit	1	4
Pass	4	16
Option C (Not student)	10	40
Level of Education		
Bachelor's degree	4	16
Master's degree	12	48
Doctorate degree	8	32
None of the above	1	4

Table 2. Social media usage time and addiction

	<i>N</i>	%
How often do you go on social media?		
Just about every day	7	28
Every couple of hours	6	24
Just about every hour	7	28
Every couple of minutes	5	20
How much time do you think you spend on social media per day?		
Less than 1 Hour	1	4
1–2 Hours	3	12
2–3 Hours	6	24
3–5 Hours	5	20
5–7 Hours	5	20
More than 7 Hours	5	20
How long do you spend logged in across all the social media platforms that you use?		
About 15 minutes or less	6	24
About 30 minutes	5	20
About an hour	6	24
More than an hour	8	32
When do you access social media?		
While at school/ work	7	28
Before I get out of bed	7	28
During social occasions	1	4
Last thing I do before going to bed	2	8
At any spare moment	8	32
Do you feel it is healthy to spend that much time on social media? Yes		
	4	16
No	21	84
Do you consider yourself addicted to social media?		
Yes	15	60
No	10	40

Table 3. Social media patterns of use and impact on life

	<i>N</i>	%
What do you use social media for?		
Keeping in touch with friends and family	24	96
Inspiration	1	4
Do social media Influencers and celebrity endorsements play a big part in influencing your purchasing decision? Yes	13	52
No	12	48
Does social media distract you when you need to be productive? Yes	13	52
No	12	48
Do you care about how many people like or view your posts/pictures? Yes	15	60
No	10	40
Have you ever been cyberbullied in any way through social media? Yes	5	20
No	20	80
When you see someone post about the intriguing events going on in their life, are you depressed by the idea that your life isn't as "cool" or "eventful" as theirs? Yes	12	48
No	13	52
When you see pictures posted of a person who has the body type that you desire, do you put yourself down or think negatively about your body?		
Yes	10	40
No	15	60
Do you accept friend requests/followers that you do not know in order to be viewed as more popular? Yes	4	16
No	21	84
Has social media affected your relationship with your family members? Yes	7	28
No	18	72
If yes, can you indicate the type of effect social media has on your relationship with your family members?		
Positive effect	4	16
Negative effect	3	12
Do you feel as if you have an online persona (Are you a different person online)? Yes	10	40
No	15	60
Do you feel social media has impacted your mental health? Yes	16	64
No	9	36
If yes, in what ways has it affected you?		
Anxiety	7	28
Self-esteem	4	16
Addiction to social media	3	12
Others	2	8
What emotions do you experience when using social networking sites? Happiness	2	8
Boost self-esteem	2	8
Jealousy	3	12
Motivation	2	8
Inspiration	6	24
Fear of missing out	3	12
Lower self-esteem	3	12
Other	4	16

Table 4. Mental health and family functioning scores before Social Brain platform use

	The studied respondents (<i>n</i> =25)	
Mental health score	25.28 ±	
Mean ± SD	5.72	
Range	12–38	
Description		
Within normal range	2	(8%)
Evidence of distress	2	(8%)
Severe problems and psychological distress	21	(84%)
Family functioning score		
Mean ± SD	1.32 ± 0.48	
Range	1–2	
Description		
Healthy	17	(68%)
Almost healthy	8	(32%)

Data are presented as frequency (%) unless otherwise mentioned.

Table 5. Comparison between mental health and family functioning scores before and after Social Brain platform use

	The studied respondents (<i>n</i> =25)
Mental health score	
Before Social Brain usage	25.28±5.72
After Social Brain usage	
Week 1	2.16±0.69
Week 2	2.12±0.73
Week 3	2.12±0.78
Week 4	2.04±0.84
Mean score over the month	2.11±0.49
<i>P</i> -value (before vs after)	<0'001
Family functioning score	
Before Social Brain usage	1.32±0.48
After Social Brain usage	
Week 1	12.84±7.07
Week 2	11.52±5.71
Week 3	10.0±49.4
Week 4	12.52±7.61
Mean score over the month	11.72±4.21
<i>P</i> -value (before vs after)	<0'001

Data are presented as mean ±SD, Statistical significance at *P*-value <0.05

Table 6. Type, frequency, and duration of used platforms

Number of used platforms	18 (15–23) 6–45	
Duration of use (min)	769.02 (286.45–1196.18) 29.6–1682.95	
Social media platform		
YouTube	20	(80%)
WhatsApp	16	(64%)
Instagram	15	(60%)
Telegram	15	(60%)
Facebook	12	(48%)
Facebook Messenger	11	(44%)
Twitter	8	(32%)
LinkedIn	4	(16%)
Snapchat	4	(16%)
TikTok	3	(12%)
WeChat	2	(8%)
Next-door	1	(4%)
Pinterest	1	(4%)
Reddit	1	(4%)
Twitch	1	(4%)

Data are presented as median (IQR) and range for numerical data and frequency (%) for categorical data.

Table 7. Relation between respondent's demographics and their mental health score after Social Brain use

	Mental health score	P-value
Age (years)		
		0.505
18–24	2.22±0.51	
25–34	1.98±0.55	
≥35	2.21±0.33	
Gender		
		0.188
Male	1.950±0.005	
Female	2.22±0.47	
Nationality		
		0.25
British	1.92±0.29	
Malaysian	2.25±0.54	
Others	1.91±0.42	
Marital status		
		0.036
Married	1.830±0.005	
Never been married	2.27±0.44	
Occupation		
		0.02
Full time	2.20±0.41	
Part time	1.65±0.52	
Level of Education		
		0.802
Bachelor's degree	3±1	
Master's degree	2.08±0.64	
Doctorate degree	2.13±0.83	

Data are presented as mean ± SD, Statistical significance at P-value <0.05

Table 8. Relation between respondent's demographics and their family functioning score after Social Brain use

	Family functioning score	<i>P</i> -value
Age (years)		0.756
18–24	12.63±3.32	
25–34	11.48±4.47	
≥35	10.96±5.25	
Gender		0.13
Male	10.15±4.47	
Female	12.77±3.82	
Nationality		0.016
British	9.67±1.61	
Malaysian	13.52±3.99	
Others	8.75±2.94	
Marital status		0.09
Married	9.97±4.12	
Never been married	13.0±40.1	
Occupation		0.121
Full time	11.72±4.26	
Part time	9.95±1.12	
Level of Education		0.581
Bachelor's degree	12.19±5.62	
Master's degree	10.94±4.07	
Doctorate degree	13.0±41.3	

Data are presented as mean ± SD, Statistical significance at *P*-value <0.05

Table 9. Linear regression model for factors associated with mental health score over a month post Social Brain use

	Univariate			<i>P</i> -value	Multivariable			<i>P</i> -value
	Coefficient	95%CI			Coefficient	95%CI		
Age (years) 18–24	Ref				Ref			
25–34	–0.24	–0.72 to 0.24		0.306	–0.15	–1.97 to 1.68		0.836
≥35	–0.01	–0.57 to 0.55		0.969	0.26	–2.68 to 3.2		0.82
Gender								
Male	Ref				Ref			
Female	0.27	–0.14 to 0.67		0.188	–0.65	–4.66 to 3.35		0.675
Nationality								
Saudi	Ref				Ref			
British	–0.58	–1.74 to 0.58		0.308	0.73	–4.4 to 5.86		0.713
Malaysian	–0.25	–1.29 to 0.79		0.623	–0.79	–4.78 to 3.2		0.613
Others	–0.59	–1.66 to 0.47		0.26	0.46	–3.01 to 3.93		0.731
Religion								
Atheist	Ref				Ref			
Buddhism	0.71	–0.04 to 1.45		0.061	1.43	–2.39 to 5.25		0.357
Christianity	–0.04	–0.61 to 0.53		0.881	1.14	–2.59 to 4.87		0.445
Islam	0.36	–0.08 to 0.8		0.103	1.63	–2.78 to 6.04		0.362
Marital status								
Married	Ref				Ref			
Divorced	0.42	–0.59 to 1.43		0.401	1.13	–4.24 to 6.51		0.59
Never been married	0.43	0.03 to 0.84		0.036	1.35	–3.11 to 5.82		0.447
Occupation								
Full time	Ref				Ref			
Part time	–0.55	–1 to –0.09		0.02	–0.58	–3.09 to 1.93		0.554
Retired	0.55	–0.37 to 1.48		0.228	0.22	–2.68 to 3.12		0.843
Level of Education								
Bachelor's degree	Ref				Ref			
Bachelor's degree	–0.06	–0.68 to 0.55		0.835	1.12	–3.61 to 5.85		0.546
Master's degree	0.09	–0.56 to 0.75		0.768	1.34	–2.54 to 5.22		0.391
Doctorate degree	–0.38	–1.57 to 0.82		0.52	0.09	–5.62 to 5.8		0.967
Psychological condition								
No	Ref				Ref			
Yes	0.26	–0.74 to 1.27		0.592	1.16	–1.75 to 4.07		0.329
Not sure	0.64	–0.41 to 1.69		0.217	0.88	–1.25 to 3.01		0.315
Frequency of platforms used	–0.0004	–0.03 to 0.03		0.979	–0.02	–0.17 to 0.14		0.791
Duration of platform use	0.0002	–0.0003 to 0.0006		0.427	–0.0001	–0.001 to 0.001		0.804

CI: Confidence interval, Statistical significance at *P*-value <0.05

Table 10. Linear regression model for factors associated with family functioning score over a month post Social Brain use

	Univariate				Multivariable			
	Coefficient	95%CI		P-value	Coefficient	95%CI		P-value
Age (years)	Ref				Ref			
18–24	Ref				Ref			
25–34	–1.15	–5.33	to 3.04	0.575	–0.1	–14.65	to 14.44	0.985
≥35	–1.67	–6.53	to 3.19	0.485	0.02	–23.4	to 23.44	0.998
Gender	Ref				Ref			
Male	Ref				Ref			
Female	2.62	–0.83	to 6.07	0.13	8.58	–23.3	to 40.47	0.496
Ethnicity	Ref				Ref			
Saudi	Ref				Ref			
British	–8.58	–16.99	to –0.18	0.046	–11.08	–51.91	to 29.75	0.493
Malaysian	–4.73	–12.28	to 2.82	0.207	–2.29	–34.1	to 29.51	0.851
Others	–9.5	–17.22	to –1.78	0.018	–11.05	–38.69	to 16.59	0.329
Religion	Ref				Ref			
Atheist	Ref				Ref			
Buddhism	9.28	3.91	to 14.65	0.002	–7.03	–37.43	to 23.36	0.556
Christianity	1.15	–2.98	to 5.28	0.568	–11.9	–41.6	to 17.79	0.328
Islam	4.55	1.4	to 7.71	0.007	–8.86	–43.95	to 26.24	0.522
Marital status	Ref				Ref			
Married	Ref				Ref			
Divorced	–1.72	–10.58	to 7.13	0.691	–9.26	–52.09	to 33.58	0.581
Never been married	3.03	–0.51	to 6.57	0.09	–1.41	–36.95	to 34.13	0.918
Occupation	Ref				Ref			
Full time	Ref				Ref			
Part time	–1.77	–5.83	to 2.28	0.374	0.27	–19.7	to 20.24	0.972
Retired	8.78	0.51	to 17.05	0.039	5.87	–17.24	to 28.98	0.52
Level of Education	Ref				Ref			
Bachelor's degree	Ref				Ref			
Bachelor's degree	–1.25	–6.47	to 3.97	0.623	–6.03	–43.69	to 31.64	0.68
Master's degree	0.81	–4.72	to 6.35	0.763	–2.74	–33.63	to 28.15	0.818
Doctorate degree	–3.19	–13.29	to 6.91	0.519	–24.41	–69.89	to 21.07	0.21
Psychological condition	Ref				Ref			
No	Ref				Ref			
Yes	–5.53	–14.44	to 3.38	0.212	7.77	–15.4	to 30.95	0.404
Not sure	–3.64	–12.9	to 5.62	0.423	3.94	–13	to 20.88	0.554
Frequency of platforms used	–0.0149	–0.26	to 0.23	0.9	0.8	–0.43	to 2.03	0.144
Duration of platform use	–0.0024	–0.0059	to 0.0011	0.168	–0.0047	–0.014	to 0.005	0.241

CI: Confidence interval, Statistical significance at P-value <0.05

Table 11. Respondents' experience and concerns about Social Brain app

	□	%
seeing the results representations every Sunday, you became Aware of how much time you are spending on social media	47	82.5
Aware of the type of social media platforms you are using	43	75.4
Aware of the effect of social media use on your mental health	39	68.4
Aware of the effect of social media use on your family functioning	29	50.9
I was already aware before using the app, and it did not do anything for me	3	5.3
I was already aware before using the app, but it increased my awareness	15	26.3
I was not aware, and it did not do anything for me	1	1.8
you making plans to change how much time you spend on social media platforms? Yes	34	59.6
Maybe	17	29.8
No	6	10.5
you making plans to change the type of social media platforms you are using? Yes	29	50.9
Maybe	12	21.1
No	16	28.1
you changed how much time you spend on social media platforms? Yes	36	63.2
Maybe	7	12.3
No	14	24.6
you changed the type of social media platforms you are using? Yes	28	49.1
Maybe	6	10.5
No	23	40.4
you think using social media affects your mental health? Yes	40	70.2
Maybe	10	17.5
No	7	12.3
you think using social media affects your family functioning? Yes	32	56.1
Maybe	10	17.5
No	15	26.3
ur opinion, how good is the visualization that represents the data, you see every Sunday on the results tab?		
Somewhat bad	3	5.3
Neither good nor bad	6	10.5
Somewhat good	25	43.9
Extremely good	23	40.4
would you rate your experience with the Social Brain app? Somewhat bad	3	5.3
Neither good nor bad	6	10.5
Somewhat good	19	33.3
Extremely good	29	50.9
ou face any concerns while using the Social Brain app? Yes	10	17.5
No	47	82.5
Security	8	14.0
Privacy	10	17.5
Device memory	3	5.3
Device battery	1	1.8
Internet consumption	2	3.5

rding the design and usability of the Social Brain app, how would you rate it? Somewhat bad	2	3.5
Neither good nor bad	6	10.5
Somewhat good	20	35.1
Extremely good	29	50.9