

# RELATIONS BETWEEN FOOD AND DRINK CONSUMPTION AND EATING BEHAVIOR ASSESSMENT DEBQ – A STUDY ON CHINESE COLLEGE STUDENTS

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## OBJECTIVES

- ➊to replicate reliability of DEBQ on a sample set of Chinese college students.
- ➋to discover relations between three DEBQ subscales, gender, and food/drink consumption, assessed by SDSCA-type scales.
- ➌as a minor objective, positive relation between restrained eating and unhealthy eating patterns is expected. Gender differences will also be tested.

## INTRODUCTION

Study began with:

- ➊characterizing distinct kinds of eating disorders
- ➋inventing accurate diagnostic criteria
- ➌effective measurement of abnormal symptoms

The Eating Attitude Test(EAT) was the first self-reported questionnaire for evaluation  
Research further: reliability challenged.

- ➊clinical criteria for anorexia changed greatly
- ➋more types separated: bulimia(overeating)

Abnormal patterns <- non-clinical samples  
More questionnaires invented, including DEBQ.  
Usually higher scores -> worse eating patterns

Questionnaires <- theories on formation  
Psychosomatic theory -> EMAQ, DEBQ: emotion  
DEBQ -> high theoretical flexibility and reliability  
Questions under-researched.

- ➊wasn't translated, validated on Chinese env
- ➋question not well: **baker**, habits, env...
- ➌self-report biases -> low effectiveness
- ➍posi relation: restrained -> unhealthy intake

## PARTICIPANTS

Participants of this study were 52 college students from Sun Yat-sen University. Demographic information is presented in Table 1. All 31 males and 21 females were young Asian adults, with average BMI 20.8 ( $\pm 2.67$ ) for male samples and 19.0 ( $\pm 1.82$ ) for females. Demographic analysis shows typicality of samples used for the research. Few samples were discarded in demographic analysis as participants responded with abnormal values due to privacy concerns.

Characteristics	average ( <i>N</i> )	percentage(range)
Female ( <i>N</i> =21)		0.404
Age ( <i>N</i> =20)	19.25 ( $\pm 0.44$ )	(19-20)
BMI ( <i>N</i> =20)	19.1 ( $\pm 1.82$ )	(16.7-23.7)
Underweight	(9)	0.45
Normal Weight	(11)	0.55
Overweight	(0)	0
Obese	(0)	0
Male ( <i>N</i> =31)		0.596
Age ( <i>N</i> =28)	19.35 ( $\pm 0.56$ )	(19-20)
BMI ( <i>N</i> =30)	20.8 ( $\pm 2.67$ )	(14.9-24.1)
Underweight	(3)	0.1
Normal Weight	(24)	0.8
Overweight	(3)	0.1
Obese	(0)	0

## METHODS AND PROCEDURE

Demo: age, gender, stature and weight(-> **BMI**)  
Food/Drink Consumption: SDSCA-type questions.

Questions (range:0-4)

How many of the last four days did you:

1. have snacks or late supper besides the normal meals?
2. eat four or more servings of vegetables and fruits?
3. eat any high-fat food or full-fat dairy product?
4. drink high-sugar soft drink?

DEBQ:

- ➊Emotional: 9 questions (4 removed <- diffused)
- ➋External: 7 questions (3 removed <- less-critical)
- ➌Restrained: 9 questions

Web-base questionnaire, questions randomly placed.  
Demo -> consumption -> DEBQ

**SPSS** -> Reliability

**MATLAB** -> Demo analysis

**sklearn** -> Relation discovery

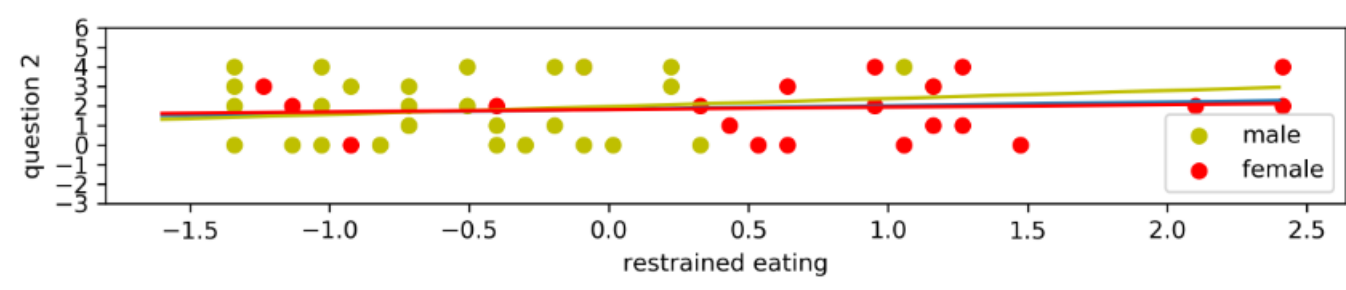
Table 1:**Reliability measured by  $\alpha$**

part	reliability
DEBQ	0.921
Emotional Eating	0.964
Restrained Eating	0.910
External Eating	0.587

Low on **External Eating**: removed 3 questions  
**balance** effectiveness <-> importance

## RESULTS AND DISCUSSION

Figure 1:**Gender differences**



Reliability: gender diff?  
age and gender -affect-> understanding && results

Figure 2:**Emotional -> snacks and late supper**

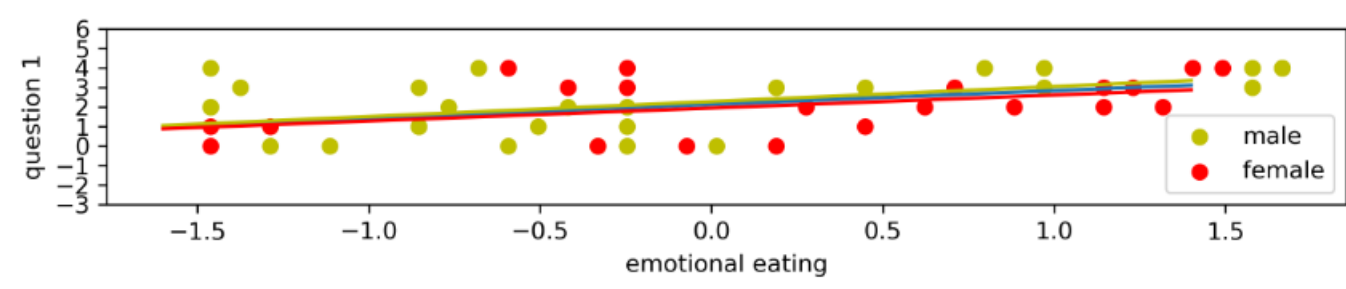
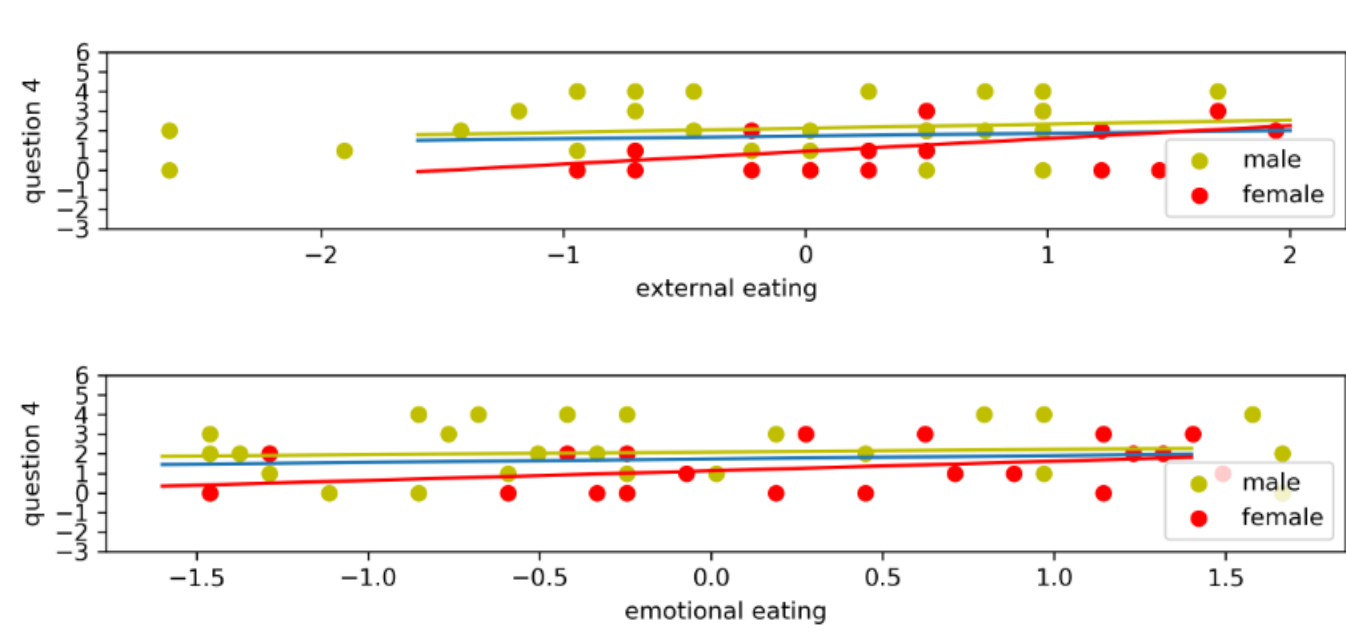
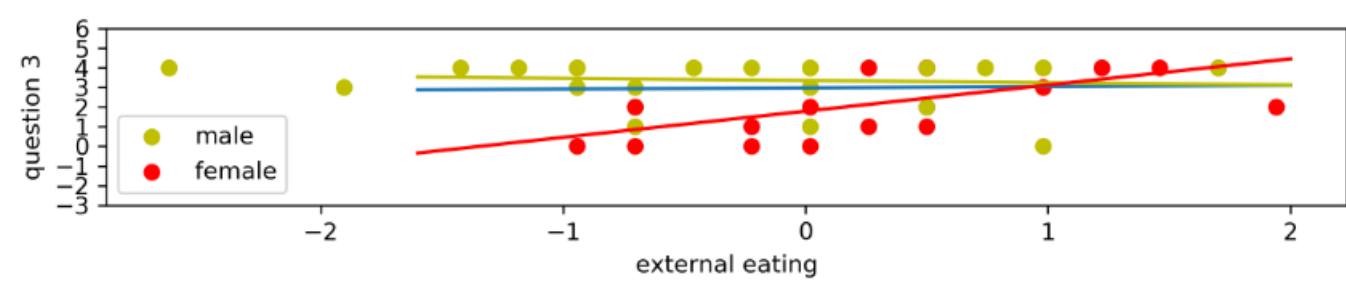


Figure 3:**Emo, External(female) -> high-sugar drink**



high impulsivity -> more unhealthy intake

Figure 4:**External(female) -> high-fat intake**



Low effectiveness:  
**SDSCA** questions <- randomness and biases  
**DEBQ**:

- ➊different eating env/culture/habits
- ➋vague distinction and misunderstandings:  
**bad** vs. **good** -> **restrained**
- ➌innate drawback: no behavioral/physical test

## ACKNOWLEDGEMENTS

This research is supported by my teammates and their selfless help. Gratefulness also goes to the supervisor Jing Chen, from whom I learned valuable skills to finish this research.

## IMPORTANT RESULT

- ➊DEBQ reliability: high overall, low on **External Eating**
- ➋gender dif: high DEBQ scores for girls
- ➌**Emotional Eating** -posi-> snacks and late supper
- ➍no relation for vegetable/fruit intake
- ➎female **External Eating** -posi-> high-fat intake
- ➏female **External, Emotional Eating** -posi-> high-sugar drink