

## *Original Paper*

# Developing a Scale to Measure Empathic Embarrassment in Japanese Female University Students

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### **Abstract**

*This study aims to develop a measure for empathic embarrassment among female Japanese university students. A total of 97 Japanese female university students rated 20 items. First, the factor structure of the Empathic Embarrassment Scale was examined using exploratory factor analysis, and the validity of this structure was evaluated via confirmatory factor analysis. The results showed that a two-factor model consisting of failure experience and self-centered behavior demonstrated the best fit.*

### **Keywords**

*Empathic Embarrassment Scale, university students, interpersonal relationship*

## **1. Introduction**

Empathic embarrassment refers to the discomfort one experiences upon witnessing another person's embarrassment. It is determined by one's capacity to empathically observe others as well as their sensitivity to embarrassment (Miller, 1987). In the case of embarrassment for one's own behavior, the strongest embarrassment is felt when the observer is at a moderate psychological distance. However, in the case of vicarious embarrassment, the experience depends on whether one can empathize with the other person (Marcus et al., 1996). Research has also shown that an observer feels empathic embarrassment even if the actor themselves does not feel embarrassed.

Adler, Dvash, and Shamay-Tsoory's (2015) investigation of empathic embarrassment accuracy in Autism Spectrum Disorder (ASD) suggested that individuals with ASD tend to have higher ratings of empathic embarrassment because of difficulties in emotion regulation, which may account for their impaired empathic accuracy and aberrant social behavior.

Kuwamura (2009) designed situations that evoke feelings of embarrassment through statements such as "When you claimed you could easily do something in front of others but then failed to do it". The study

categorized participants as family members (close psychological distance), friends (moderate psychological distance), and strangers (wide psychological distance) and examined the relation between empathic embarrassment and psychological distance. The results suggested that empathic embarrassment was more easily evoked as psychological distance decreased.

As these studies have shown, empathic embarrassment deeply affects social behavior and relationships. However, assessment tools for empathic embarrassment have been nonexistent, highlighting the necessity to develop them and confirm their validity for future studies. Therefore, the main purpose of the present study was to develop a scale that measures empathic embarrassment in female Japanese university students.

## **2. Method**

### *2.1 Item Selection*

We asked an initial group of 21 female university students to list behaviors they associate with empathic embarrassment. We then used these as the initial items for the scale.

### *2.2 Participants*

A total of 99 female Japanese university students participated in this study.

### *2.3 Procedure*

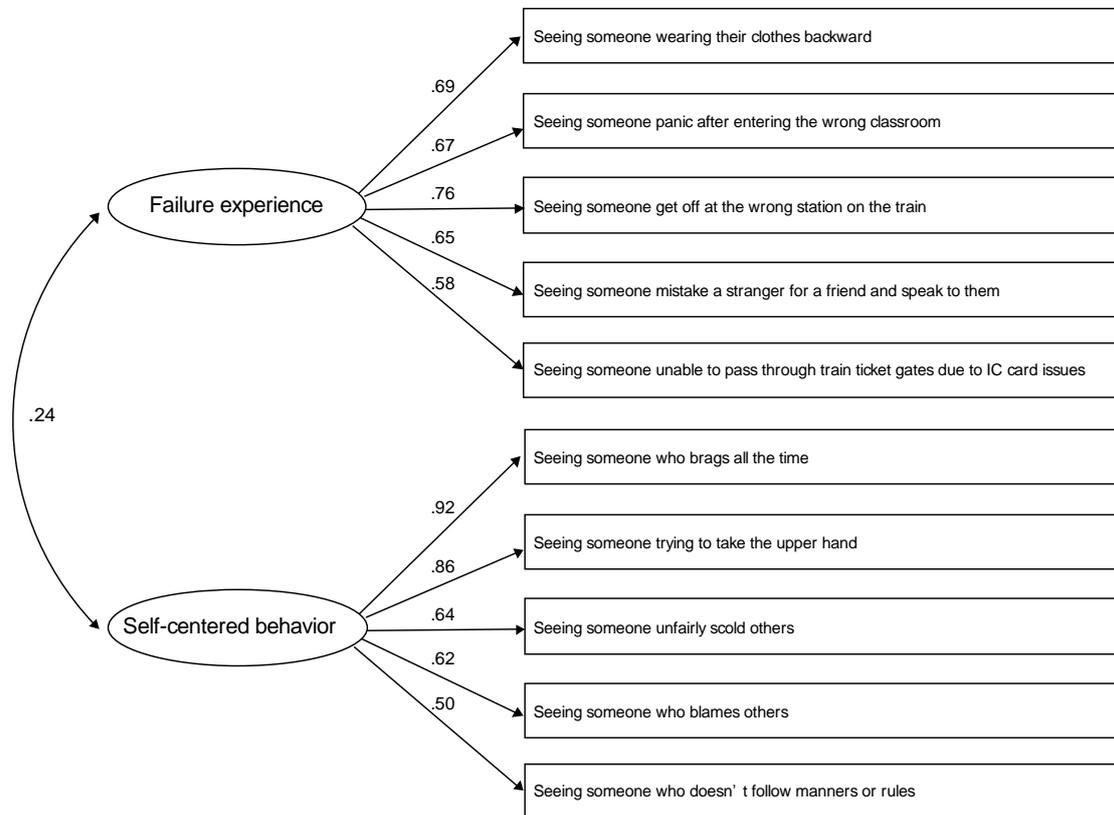
The first version of the Empathic Embarrassment Scale contained 20 of the items listed by the initial group of 21 students. The 99 participants then rated each item on a five-point Likert-type scale from 1 (disagree) to 5 (agree). We examined the scale's factor structure using Exploratory Factor Analysis (EFA), checked its validity using Confirmatory Factor Analysis (CFA), and calculated Cronbach's alpha ( $\alpha$ ) coefficients to determine its reliability.

## **3. Results**

Based on the EFA results, a two-factor model consisting of failure experience and self-centered behavior showed the best fit, with factor loadings ranging between 0.331 and 0.676 for failure experience and 0.428 and 0.913 for self-centered behavior (Table 1). For the next step, we selected the five suitable items with high loadings in each factor. All the model's fit indices were acceptable (CFI = 0.956, RMSEA = 0.069), and all paths for each item were significant ( $p < 0.01$ ). Cronbach's  $\alpha$  value for the subscales were 0.80 for failure experience and 0.84 for self-centered behavior. Figure 1 shows the CFA results.

**Table 1. Exploratory Factor Analysis Results for the Empathic Embarrassment Scale**

	F1	F2
<b>F1: Failure experience</b>		
6 Seeing someone wearing their clothes backward	.676	.129
7 Seeing someone panic after entering the wrong classroom	.662	-.074
5 Seeing someone get off at the wrong station on the train	.660	.055
9 Seeing someone mistake a stranger for a friend and speak to them	.643	-.012
3 Seeing someone unable to pass through train ticket gates due to IC card issues	.615	.040
16 Hearing someone's stomach growl in a quiet place	.583	-.186
4 Seeing someone who made a big noise and drew everyone's attention	.568	-.036
2 Seeing someone wearing clothes with the price tags still attached	.550	.231
10 Seeing someone stumble and fall in public	.536	.125
8 Seeing someone fail at a presentation	.475	-.322
1 Seeing someone who doesn't realize their backpack is open	.442	.265
15 Seeing someone being scolded in public	.331	.037
<b>F2: Self-centered behavior</b>		
13 Seeing someone who brags all the time	-.061	.913
14 Seeing someone trying to take the upper hand	-.137	.887
20 Seeing someone unfairly scold others	-.096	.674
11 Seeing someone who blames others	.028	.609
18 Seeing someone who doesn't follow manners or rules	.026	.548
17 Seeing someone talking loudly	.045	.551
19 Seeing someone laugh out loud	.054	.504
12 Seeing someone act slyly toward others	.077	.428
F1		.284



**Figure 1. Confirmatory Factor Analysis Results for the Empathic Embarrassment Scale**

#### 4. Discussion and Conclusion

This study sought to develop a new scale for empathic embarrassment. The fit indices suggested that the best-fitting model contains two factors: failure experience and self-centered behavior.

This scale defines failure experience as the observer's feeling of embarrassment when witnessing another person's failure in their daily life and feeling of empathy with that person's feelings. People who feel embarrassed by others' failures tend to experience such embarrassment as if it were their own, suggesting a high level of empathy. The items included under failure experience are familiar to contemporary female university students. Future studies should examine the relation between empathic embarrassment toward failure experience and other psychological aspects.

Meanwhile, self-centered behavior refers to the observer's feeling of embarrassment when witnessing someone act selfishly and without consideration for others' feelings. This embarrassment toward self-centered behavior is associated with one's moral values and sense of justice.

The results further revealed a significant positive correlation between failure experience and self-centered behavior, indicating that individuals who feel embarrassed for others' failure experience are also more likely to feel the same for others' self-centered behavior. Thus, research must examine more deeply the relations between these factors and other psychosocial components that mediate these associations.

## References

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