

**An Exploration of Thwarted Belongingness and Perceived Burdensomeness Among Undergraduate Agriculture Students**

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## Introduction

Suicide is the second leading cause of death for persons aged 10-34 years old (Cuthbertson et al., 2022). Generation Z (adults ages 18-22) is the loneliest generation and are increasingly concerned “that others do not like me” (p. 5) (Center for Collegiate Mental Health, 2023). Individuals with occupations in agricultural sectors face higher rates of suicide, depression, and psychological distress; additionally, there are stigmas in certain agricultural communities pertaining norms of stoicism, individualism, and the perception that seeking help is a weakness (Stewart et al., 2015). This study is motivated by the awareness of suicidal ideation in agriculture, with the additional emphasis by Middle Tennessee State University. In 2021, a survey was distributed to 1,900 MTSU students; 16% of respondents reported thoughts of suicide (DeGennaro, 2024).

This study investigates experiences with thwarted belongingness (TB), defined as having a low sense of acceptance, and perceived burdensomeness (PB), defined as feeling taxing to others (Van Orden et al., 2010; 2012). Using the Interpersonal Needs Questionnaire (Van Orden et al., 2012), we investigated various stressors and associated risk with TB or PB, including students’ age, gender identity, academic rank, employment status, living situation, tuition responsibility, and social media use (Feinstein et al., 2022; Heckman et al., 2014; Lockman & Servaty-Seib, 2016). Research questions for this study include: 1. To what extent do undergraduate agriculture students experience TB? 2. To what extent do undergraduate agriculture students experience PB? 3. Are undergraduate agriculture students' feelings of TB associated with PB, or any stressors? 4. Are undergraduate agriculture students’ feelings of PB associated with TB, or any stressors?

## Theoretical Framework

This study uses the Interpersonal Theory of Suicide (ITS) to position the research (Van Orden et al., 2010). Within ITS are the linear constructs of thwarted belongingness (TB) and perceived burdensomeness (PB) and a third construct related to the capability to conduct self-harm (Van Orden et al., 2010). ITS positions that TB will vary over time, it is a dynamic state that can be influenced by interpersonal environments, i.e. number of social media friends, and intrapersonal factors, i.e. viewing others’ actions as signs of rejection (Van Orden et al., 2010). PB is also a dynamic state of cognition that can vary over time and in severity, it has two interpersonal dimensions: feeling a liability to others, and thoughts of self-hate (Van Orden et al., 2010). The Interpersonal Theory of Suicide was used to develop the Interpersonal Needs Questionnaire (INQ) for use by researchers and clinicians as a risk assessment and crisis intervention (Van Orden et al., 2012).

## Methodology

This study occurred at a non-land-grant university in the southeastern United States. We collected the university email addresses for 398 enrolled students who met the inclusion criteria at [university] during the 2024 Spring semester. We conducted a random number assignment to the emails, and using a research randomizer, selected a sample of 196 (Krejcie & Morgan, 1970). Recruitment emails went out to students once a week for 3 consecutive weeks (Dillman et al., 2014). We received a 15% response rate, due to incompleteness, only 25 responses were used for analysis. Survey questions included the 15-item Interpersonal Needs Questionnaire (INQ) (Van Orden et al., 2012) and nine demographic questions. For the INQ students answer each item on a 7-point Likert scale, nine items are associated with TB, and six items are associated with PB; an example item on the INQ is “These days, I rarely interact with people who care about me” (Van Orden et al., 2012). Research provides evidence of validity and reliability of both subscales and

consistent coefficients were found for TB items ( $\alpha = .85$ ) and PB items ( $\alpha = .89$ ) (Van Orden et al., 2012). The demographic questions were related to perceived stressors.

### Results

For RQ1, descriptive statistics were conducted using student's TB scale score (Boone & Boone, 2012). Based on the 9 items, student's TB scale scores ranged from 53, stronger experiences, to 9, fewer experiences of TB,  $M = 24.04$ ,  $SD = 10.28$ . For RQ2, descriptive statistics were conducted using student's PB scale scores (Boone & Boone, 2012). Based on the 6 items, student's PB scale scores ranged from 33, stronger experiences, to 6, fewer experiences of PB,  $M = 10.24$ ,  $SD = 6.3$ . For RQ3 a multiple linear regression was conducted to examine the factors associated with PB. The regression model was statistically significant,  $F(8,16) = 14.33$ ,  $p < .001$ , with an  $R^2$  value of 0.877, the model explained approximately 87.7% of the variance in PB. Other predictors were not statistically significant in this model. For RQ4 a multiple linear regression was conducted to examine the factors associated with TB. The regression model was statistically significant,  $F(8,16) = 18.47$ ,  $p < .001$ , with an  $R^2$  value of 0.902, the model explained approximately 90.2% of the variance in TB. Other variables were not significant predictors of TB, indicating no substantial impact on TB in this sample. The high adjusted  $R^2$  value (0.853) suggests a robust model fit, supporting the overall predictive power of the included variables.

### Conclusions

To answer RQ1, undergraduate agriculture students' experiences with TB is varied but low. To answer RQ2, undergraduate agriculture students' experiences with PB is low. To answer RQ3, TB was positively associated with PB ( $\beta = 0.597$ ,  $p < .001$ ), suggesting that individuals experiencing higher levels of TB tend to feel more burdensome. Employment status was also positively associated with PB ( $\beta = 3.83$ ,  $p = .007$ ), indicating that employed individuals reported higher PB than their non-employed counterparts. The high adjusted  $R^2$  value (0.816) supports a strong model fit, suggesting that TB and employment status are key contributors to feelings of PB. To answer RQ4, PB was positively associated with TB ( $\beta = 1.27$ ,  $p < .001$ ), suggesting that individuals with higher PB tend to experience higher levels of TB. Age was also a significant predictor, with individuals under 24 reporting lower TB scores ( $\beta = -7.43$ ,  $p < .013$ ), indicating that younger participants may experience less TB. Employment status was inversely related to TB, with employed individuals reporting significantly lower levels ( $\beta = -4.35$ ,  $p < .044$ ), potentially reflecting the social benefits of workplace interactions. Additionally, living at home was positively associated with TB ( $\beta = 5.01$ ,  $p < .016$ ), suggesting that individuals residing at home may experience increased feelings of TB.

### Implications and Recommendations

The findings of this exploratory study suggest that perceived PB and TB are related; supporting the theory that people struggling with social integration may experience heightened perceptions of being a burden due to their perceived lack of contribution to their communities (Van Orden et al., 2012). One limitation of this study is we did not collect demographic data on students race or ethnicity, and the small response rate, therefore the results of this study are not representative of the population. As this was an exploratory study, researchers will use these findings to inform hypotheses for larger, multi-university studies with additional layers of comparison with undergraduate agriculture students experiences with thwarted belongingness and perceived burdensomeness.

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