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# Scale Development and Factor Structure Confirmation of Constructs within Durkheim's Theoretical Framework of Emotional Solidarity

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## ABSTRACT

*The purpose of this study is to develop and validate scales corresponding to the constructs in Durkheim's theoretical framework of emotional solidarity. Following two initial stage of pilot testing, each scale was included in an onsite self-administered survey instrument and distributed to approximately 700 homes in a coastal South Carolina county. Psychometric properties were assessed and each scale was found to be high in internal consistency and construct validity (i.e., convergent and discriminant validity). Practical and theoretical implications are discussed as well as potential research opportunities concerning emotional solidarity.*

## INTRODUCTION

Traditionally, relationships between residents and tourists have been viewed as transitory, superficial in nature where services and products are provided by the former in exchange for money from the latter (Wall and Mathieson 2006), and rooted in the 'self' versus 'other' dichotomy (Kohn 1997). The extent of superficiality has been challenged as of late in work calling for a greater examination of potential intimate relationships between party representatives (Pizam, Witt, and Wydenbach 2000). One potentially viable framework to examine such intimacy is the theory of emotional solidarity as put forth by Durkheim (1995[1915]). In the context of tourism, the theory posits that as residents share beliefs, behavior, and interact with tourists, a feeling of solidarity will be forged with such tourists.

Unfortunately to date, scales for each of these constructs are scant. Following the work of Churchill (1979), the purpose of this paper is to develop and validate measurement properties of four scales (i.e., shared beliefs, shared behavior, interaction, and emotional solidarity), each measuring a construct within Durkheim's model.

## RESEARCH METHODS

Items for each scale were initially generated based on conceptual content analysis (Busch, DeMaret, and Flynn 2008) results of qualitative data (with semi-structured interview questions corresponding to each construct) from three focus groups among residents in Beaufort County, South Carolina. In addition, single-item measures pertaining to the constructs were also utilized from existing literature to generate scale items. As a measure of initial face validity, all scale items were reviewed by a panel of 11 academic experts in this area of research (as a check

for clarity and redundancy), resulting in 18 shared belief items, 26 shared behavior items, five interaction items, and 22 emotional solidarity items.

At that point two subsequent pilot studies with the scales were conducted among permanent residents of Carteret County, North Carolina (N=69) and Beaufort County, South Carolina (N=72). Both locations were selected given similar socioeconomic backgrounds of residents in each county and the fact that each are heavily visited tourist attractions throughout the year.

Exploratory factor analysis (EFA) using principal axis factoring with varimax orthogonal rotation was performed to purify each scale. For the first pilot study, KMO coefficients for each scale were greater than .60 with significant Bartlett tests (p < .05), both measures indicating a good factor analysis (Tabachnick and Fidell 2007). Factors for each construct were determined based on two criteria: Eigenvalues greater than 1.0 and an examination of the scree plot (Fabrigar, Wegener, MacCallum, and Strahan 1999). Across the four scales, 23 items were removed that either double-loaded onto multiple factors (with coefficients greater than .40) or did not load onto factors very strongly (i.e., coefficients less than .40). Ten factors resulted: shared beliefs was comprised of two factors (i.e., **preservation of area**: six items, α = .90 and **amenities of area**: three items, α = .74); shared behavior had four factors (i.e., **cultural heritage activities**: 10 items, α = .95; **outdoor recreation activities**: six items, α = .91; **beach activities**: three items, α = .93; **local patronage activities**: three items, a = .77); interaction was unidimensional (five items, α = .81); and emotional solidarity had three factors (i.e., **sympathetic understanding**: five items, α = .88; **welcoming visitors**: four items, α = .87; **emotional closeness**: three items, α = .89). All factors were high in internal consistency with Cronbach's alpha scores greater than .70 (Lance, Butts, and Michaels 2006).

To refine scales further (following the same initial procedure), an EFA for the second pilot study was conducted with KMO coefficients for each scale being greater than .60 and Bartlett tests were significant (p < .05). While the same 10 factors resulted, eleven additional problematic items were removed. Again, each scale was high in internal consistency with Cronbach's alpha scores ranging from .74 to .91 across the 10 factors.

To confirm the factor structure from the initial EFAs, a larger sample was drawn from permanent residents of Beaufort County, South Carolina to conduct a confirmatory factor analysis (CFA). According to Fabrigar et al. (1999), "An EFA can be conducted in an initial study to provide a basis for specifying a CFA model in a subsequent study" (p. 277).

In August and September 2007, an onsite self-administered survey instrument was distributed door-to-door to permanent residents throughout Beaufort County using a multi-stage cluster sampling scheme (Babbie 2007). The first stage of sampling included identifying and randomly selecting census tracts within the county. Next, within selected census tracts, block groups were randomly selected. Finally, every $k^{th}$ house was selected within block groups and the heads of household were contacted to participate. To allow for a greater response rate, two return contacts were made to each home later the same day to collect completed questionnaires (McGehee and Andereck 2004). The overall response rate was 67.8% (N=455).

## FINDINGS

To confirm the factor structure from the second pilot survey EFA, CFA of four scales was conducted using the software program EQS 6.1. In so doing, one factor along with corresponding items were added until each of the ten factors were added into the model. Requesting LaGrange Multiplier tests (synonymous with forward stepwise regression) after each

factor and corresponding items were added (Kline, 2005), 30 cross-loadings were identified along with 56 error covariances. Following Byrne (2006), cross-loadings and error covariances were removed incrementally using Wald tests (synonymous with backward stepwise regression) so as not to alter the chi-square per degree of freedom by more than 3.84 at the .05 alpha-level (Tabachnick and Fidell 2007). Ultimately every cross-loading and error covariance term was removed. However three cross-loadings had to be addressed by removing corresponding items (i.e., visiting natural areas, trust the behavior of visitors, and share ideas with visitors) from the model because by only removing the cross-loading, they exceeded the Tabachnick and Fidell (2007) cutoff. In the end, the CFA model yielded a Comparative Fit Index (CFI) value of .96 (indicating a reasonably good incremental model fit) and a root mean square error of approximation (RMSEA) value of .04 (indicating a close absolute model fit) (Hu and Bentler 1999). Table 1 shows the final CFA with each of Durkheim's constructs, factors and corresponding items, standardized loadings, t value and alpha reliability coefficients).

## Table 1. Confirmatory Factor Analysis of Durkheim Constructs

| Construct | Factor and Item Description | Standardized Factor Loading | t value[a] | α |
|---|---|---|---|---|
| Shared Beliefs | | | | |
| | **Preservation of Area** | | | .92 |
| | An appreciation for the Lowcountry | .912 | 14.98 | |
| | Respect for nature within Beaufort Co. | .831 | 15.40 | |
| | Belief that Beaufort Co. is a unique place | .780 | 12.30 | |
| | Belief that Beaufort Co. is a great place to vacation | .730 | 13.09 | |
| | Belief that preserving the local way of life in Beaufort Co. is important | .713 | 14.33 | |
| | **Amenities of Area** | | | .78 |
| | Belief that there is a wide variety of dining choices throughout county | .848 | 15.97 | |
| | Belief that there is a wide variety of entertainment choices throughout the county | .759 | 16.34 | |
| Shared Behavior | | | | |
| | **Beach Activities** | | | .99 |
| | Relaxing on the beach | .978 | 41.34 | |
| | Taking a walk on the beach | .921 | 32.96 | |
| | Swimming in the ocean | .772 | 20.93 | |
| | **Cultural Heritage Activities** | | | .92 |
| | Sightseeing | .917 | 25.67 | |
| | Visiting historic sites | .875 | 21.20 | |
| | Taking local tours | .769 | 14.55 | |
| | **Outdoor Recreation Activities** | | | .87 |
| | Inshore boating | .834 | 23.02 | |
| | Offshore boating | .833 | 14.50 | |
| | Inshore fishing | .817 | 18.03 | |
| | **Local Patronage Activities** | | | .84 |
| | Shopping at local merchants' stores | .857 | 23.23 | |
| | Shopping at grocery stores | .691 | 14.67 | |
| | Dining at local restaurants | .657 | 15.21 | |

**Table 1.** (continued)

| Interaction | | | |
|---|---|---|---|
| **Interaction** | | | .90 |
| On the weekend | .839 | 24.45 | |
| During off-peak vacation season | .814 | 19.89 | |
| During peak vacation season | .804 | 24.88 | |
| During week | .792 | 20.75 | |
| During holidays | .781 | 20.36 | |
| Emotional Solidarity | | | |
| **Emotional Closeness** | | | .88 |
| I feel close to some visitors I have met in Beaufort Co. | .940 | 25.24 | |
| I have made friends with some visitors in Beaufort Co. | .832 | 18.59 | |
| **Sympathetic Understanding** | | | .91 |
| I identify with visitors in Beaufort Co. | .885 | 23.32 | |
| I have a lot in common with Beaufort Co. visitors | .803 | 19.85 | |
| I feel affection towards visitors in Beaufort Co. | .774 | 17.34 | |
| I understand visitors in Beaufort Co. | .664 | 13.82 | |
| **Welcoming Visitors** | | | .85 |
| I am proud to have visitors come to Beaufort Co. | .877 | 20.40 | |
| I feel the community benefits from having visitors in Beaufort Co. | .773 | 13.39 | |
| I appreciate visitors for the contribution they make to the local economy | .687 | 15.70 | |
| I treat visitors fair in Beaufort Co. | .513 | 10.95 | |

[a] all *t* tests were significant at $p < .001$

A nearly identical factor structure was present across each of the four Durkheim constructs in the CFA as in the first and second EFAs, with the same 10 factors resulting. Standardized factor loadings for items ranged from .513 to .978, with all but four loadings greater than .70. According to Fornell and Larcker (1981), factor loadings above .70 are ideal. However, Comrey and Lee (1992) claim standardized factor loadings of at least .50 are acceptable.

Maximal weighted alphas (a more robust estimate of internal consistency) were requested which weights each alpha by factor loadings (Kline 2005). This weighted reliability statistic is reported given that alpha assumes equal loadings (as in EFA); however this is never the case in CFA (Byrne 2006). Maximal weighted alphas ranged from .78 to .99, indicating strong internal consistency. In other words, items within each factor were highly correlated with each other.

To determine construct validities for each of the ten factors, both convergent validity and discriminant validity were assessed (Churchill 1979). All of the *t* values associated with each loading on their corresponding factors exceeded the critical values of 3.29 at the .001 significance level (Table 1); thus, the convergent validity of each factor is established. To

determine discriminant validity, comparisons were made between inter-correlations of the factors with the square root of the average variance for each of the factors (Petrick 2002). According to Fornell and Larcker (1981), the square root of the average variance for each factor (also known as the variance extracted estimate) should be at least .50, indicating that at least 50% of the variance is captured by the factor. The square root of the average variance for each factor was greater than any of the inter-correlations of the factors, suggesting that each factor has discriminant validity.

## APPLICATION OF RESULTS

This work marks the jumping off point of research pertaining to emotional solidarity. Now that scales are developed for each theoretical construct in Durkheim's (1995[1915]) framework, the next logical step would be to test the model. More specifically, the scales of shared beliefs, shared behavior, and interaction should be utilized in empirical studies to determine if each significantly predicts the level of emotional solidarity residents experience with tourists. In addition, Durkheim's model can potentially be amended to include additional predictors and outcomes of emotional solidarity. Structural equation modeling would be an appropriate level of analysis for each of these research endeavors.

## CONCLUSIONS

The purpose of this paper was to develop and validate scales corresponding to the constructs in Durkheim's theoretical framework of emotional solidarity. It was proposed that this framework can begin to examine the emotional relationship existing between residents and tourists. Such an examination is thought to be a response to the traditional view of 'host' and 'guest' where the relationship between the former and latter is predicated on financial transactions as Aramberri (2001) claims.

Through the assessment of psychometric properties, each scale was found to be reliable and valid. While reliability is important to establish consistent measures, validity is equally crucial in developing scales as it signifies an empirical measure "adequately reflects the real meaning of the concept under consideration" (Babbie 2007, p. 146). If you are consistently measuring the wrong construct, your results will be wrought with error and have little significant meaning. Ultimately the factor structure from the second pilot study EFA was confirmed through CFA. Similar findings have been reported in current research pertaining to destination image (Kim and Yoon 2003) and impacts of gaming (Chen and Hsu 2001).

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