

A Parsimonious Model of Dining Out Behavior

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The paper presents a continuation of work on explaining the decision to dine out (versus in the home). Determinants of such food purchases were previously found to be time pressure, family composition, resources, social class, region, and urbanity. The present research improves on the explanation by evaluating these determinants to see which ones may be dropped or merged without reducing the significance of the level of explanation; the result is a more parsimonious model.

Recent work in explaining dining out behavior of households has used structural equation modeling techniques and confirmatory factor analysis, so-called 'causal methodology.' The purpose is to represent the phenomenon using manifest indicator variables and inferred latent variables (O'Brien and Pritchard, 1989). For example, a study of twenty BLS interview items yielded seven latent factors from principal components analysis and application of the EQS computational procedure (U. S. Labor Department, 1986; O'Brien, Pritchard, and Scheck, 1992; Bentler, 1985). But do such techniques produce the most efficient explanation of behavior? That is, how can we be sure we have a parsimonious model, one with the fewest underlying constructs (latent variables) at a given level of explanation? This paper presents an application of a procedure to answer this question.

Method

A previous study related the determination of a seven latent factor model of dining out behavior, where food purchase is a result of time pressure, urbanity or region, and family composition and resources. Additionally, time pressure is caused by family composition and social class, and resources is the result of family composition and time pressure (O'Brien, Pritchard, and Scheck, 1992). However, examining the covariances between latent factors revealed several that were rather high (.5 to .9): resources with family composition, social class, and time pressure, and social class with time pressure. A seven factor model was first fitted on our proposed measurement model. Then

this model was contrasted to several nested measurement models, each presuming that two latent variables were alike. The sequential chi-square differential test was used to interpret whether equating two variables materially reduced the fit (James, Muliak, and Brett, 1982).

Results

Table 1 shows the five models, fit indices, and chi-square computations. The last column is the difference between the original chi-square and that of the nested model, while the parsimonious fit index is the comparative fit index times the ratio of degrees of freedom for the two models (Anderson and Gerbing, 1988). Note that one nested model, number 2, is not significantly different from the original. The conclusion, then, is that this collapsed version is equal to the original in explanatory power.

Conclusion

We have found that two previous latent factors in determining dining out behavior, resources and social class, do not appear to be separable in their effects. From a philosophy of science perspective, we have determined a more parsimonious explanation and should adopt it. Other researchers have reached a comparable conclusion. For example, ". . . we always have to use other variables. . . to understand why income has sometimes operated quite well as a predictor and other times rather poorly. As often as not, the reason will be found in social class, which may be acting all by itself or possible in concert with one or more other social-psychological or demographic variables." (Coleman 1983, p. 275). Note that a major indicator for our resources variable was income. Coleman's recommendation is to use a composite measure of status that consists of such elements as education, occupation, neighborhood, and income. We intend to explore ways to do this in further research.

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Table 1
Fit Indices for Nested Measurement Models.

Model	Degrees of Freedom	Chi-Square	Comparative Fit Index	Parsimonious Fit Index	Sequential Chi-Square Differential Test
1. Seven factor measurement	153	1643.379**	.593	.462	
2. Resources = social class	159	1646.110**	.590	.476	2.731
3. Resources = family status	159	1843.148**	.536	.432	199.769*
4. Social class = time pressure	159	1507.727**	.628	.506	135.652*
5. Resources = time pressure	159	1580.935**	.608	.490	62.444*

*p <.05

**p <.01

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