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Testing the Expectancy Disconfirmation Model of Citizen Satisfaction with Local Government

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ABSTRACT

It is important for public administration researchers and practitioners to understand how citizens form satisfaction judgments regarding local government services. A prior study by Van Ryzin (2004) found strong support for an expectancy disconfirmation model of citizen satisfaction, which focuses on the gap between performance and expectations. This model has been tested for decades in studies of private sector customer satisfaction, yet it is little known and applied in the field of public administration. The present study seeks to replicate the Van Ryzin (2004) results, which were based on a telephone survey in New York City, using a nationwide sample and a much different survey methodology, namely, an online, self-administered survey of a national panel. In addition, this study tests the sensitivity of the results to two alternative measures of disconfirmation (or the gap between performance and expectations). Results using subtractive disconfirmation confirm the basic expectancy disconfirmation model, but results using perceived disconfirmation do not, calling into question the policy and management implications of the prior study.

It is important for public administration researchers and practitioners to understand better the process citizens use to form overall satisfaction judgments about the quality of local government services. A previous study by Van Ryzin (2004), using data from a telephone survey in New York City, found strong support for an expectancy disconfirmation model of this process. This model has been developed conceptually and tested empirically for several decades in research on customer satisfaction with private sector goods and services (Anderson and Sullivan 1993; Bearden and Teel 1983; Cardozo 1965; Churchill and Suprenant 1982; Erevelles and Leavitt 1992; Oliver 1980, 1997; Tse and Wilton 1988; Yi 1990), yet it has not been applied before to citizen satisfaction with local government services. A growing number of local governments in the United States use citizen surveys to measure the outcomes of their service provision efforts and to obtain feedback from their "customers" (Hatry et al. 1992; Miller and Miller 1991a; Miller and Miller Kobayashi 2000; Webb and Hatry 1973). The International City/County Management Association (2002), the National Academy of Public Administration (1999), and the Government Accounting Standards Board (2005) all have recommended that local governments

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consider customer surveys a key part of their local performance measurement systems. The expectancy disconfirmation model can be helpful in such situations, both as a framework for policy analysts to interpret citizen survey findings and as a window through which public managers can better perceive how citizens respond to the performance of local government.

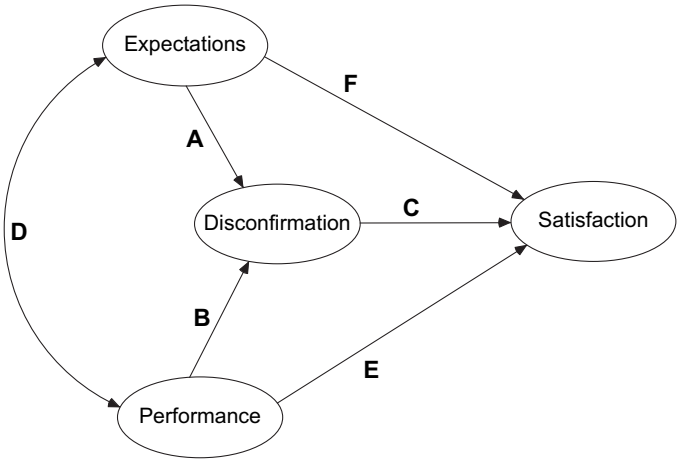
This article begins by reviewing expectancy disconfirmation theory and its relevance to the study of citizen satisfaction. The model tested by Van Ryzin (2004) is then replicated using data from an online panel of over six hundred U.S. adults. The modeling results, using a subtractive measure of disconfirmation (or gap between performance and expectations), as in the previous study, strongly suggest an important role for expectations and especially disconfirmation, along with perceived performance itself, in the formation of overall satisfaction judgments. However, the role of expectations in the model appears highly sensitive to how the expectations construct is operationalized. Indeed, modeling results using a measure of perceived disconfirmation suggest that expectations play little if any substantive role in the formation of citizen satisfaction. The article concludes with an explanation of these contradictory results and cautions that some of Van Ryzin's (2004) initial policy and management implications may lack empirical support.

BACKGROUND AND THEORY

Expectancy disconfirmation theory holds that consumers form judgments about products or services using their prior expectations about the characteristics or benefits offered by the given product or service (Oliver 1980). After experiencing the product's actual performance, these expectations then serve as a comparative referent for the formation of a satisfaction judgment (Oliver 1997). In the consumer behavior literature, this discrepancy or gap between prior expectations and actual performance is termed "expectancy disconfirmation" (Erevelles and Leavitt 1992; Oliver 1997; Yi 1990). It is important to note that the disconfirmation of expectations can be positive as well as negative; performance can either exceed expectations (positive disconfirmation) or fall short of expectations (negative disconfirmation). Evidence for the process of disconfirmation as a determinant of customer satisfaction has been found in both experimental and field studies of a variety of products and services (Anderson and Sullivan 1993; Bearden and Teel 1983; Cardozo 1965; Churchill and Suprenant 1982; Oliver 1980; Oliver and DeSarbo 1988; Oliver and Swan 1989a, 1989b; Tse and Wilton 1988). A prior study by Van Ryzin (2004) provides empirical support for the expectancy disconfirmation model as a description of how citizens form overall satisfaction judgments about local government services.

Figure 1 presents Oliver's (1997) expectancy disconfirmation with performance model, which is based on a synthesis of theoretical and empirical work in the business literature. This is the model tested by Van Ryzin (2004) using citizen survey data collected by telephone in New York City. *Expectations* are the consumer's or citizen's predictions or anticipations of the performance of a product or service (Oliver 1980, 1997), which come from prior experience, word of mouth, or communications such as advertising and the media (Cardozo 1965; Oliver 1997). Because expectations are assumed to exist prior to the consumption experience, they are shown as an exogenous variable in the model. *Performance* is hypothesized as an exogenous variable as well and refers to the consumer's evaluation of various features or facets of the product or service, based on a recent consumption experience (Oliver 1997). It is measured most often as a subjective rating of

Figure 1
Expectancy Disconfirmation with Performance Model



a product or service, but there are, of course, objective measures of performance as well. Performance in the form of citizen ratings of specific local government services constitutes the main focus of the typical citizen survey (Folz 1996; Hatry et al. 1992; Miller and Miller Kobayashi 2000; Webb and Hatry 1973).

Disconfirmation again is the discrepancy between the anticipated quality of the good or service and the quality that was actually received or experienced (Oliver 1980, 1997), a discrepancy that can be either positive or negative (that is, better or worse than expected). Finally, *satisfaction* is the consumer's or citizen's summary judgment about the product or service. An overall satisfaction question is often asked as part of the typical citizen survey (Miller and Miller Kobayashi 2000) and has been used as a key dependent variable of interest in research on local government service delivery (DeHoog, Lowery, and Lyons 1990; Lyons, Lowery, and DeHoog 1992; Van Ryzin et al. 2004).

As figure 1 shows, expectations and performance together determine disconfirmation (links A and B). Specifically, high performance is hypothesized to lead to more positive disconfirmation (a positive relationship), all else equal, while high expectations are hypothesized to produce more negative disconfirmation (a negative relationship), again all else equal. Disconfirmation, in turn, is positively related to satisfaction (link C): positive disconfirmation is associated with higher satisfaction, while negative disconfirmation is associated with lower satisfaction. Finally, expectations and performance are assumed to be correlated (link D), although the causal direction of the relationship is not defined. These four relationships in the model (A, B, C, and D) represent the basic expectancy disconfirmation process (Oliver 1980, 1997). Link E, which indicates a direct effect of performance on satisfaction, is the link most often considered in analyses of citizen survey data, namely, that citizens' evaluations of individual local government services drive their overall satisfaction judgments (DeHoog, Lowery, and Lyons 1990; Lyons, Lowery, and DeHoog 1992; Van Ryzin et al. 2004). Link F suggests a direct positive effect of expectations on satisfaction, which may occur when citizens are unaware or unable to judge the performance of local government services, or assimilate their satisfaction judgments to their previously held expectations for reasons of dissonance reduction or ego defensiveness

(Oliver 1997; Oliver and DeSarbo 1988). Because it is reasonable to assume that expectations of the quality of government services may be associated with citizens' overall views of government or their political orientations (Stipak 1977), this assimilation effect may be of particular relevance in modeling citizen satisfaction.

The New York study by Van Ryzin (2004) found strong support for all of the relationships shown in figure 1. His results demonstrate that expectations have a large, negative effect on disconfirmation (link A) and that performance has a large, positive effect on disconfirmation (link B). In turn, disconfirmation positively and powerfully affects overall citizen satisfaction (link C). Moreover, Van Ryzin's results also suggest that, at the same time, there remain large direct effects of performance (link E) and expectations (link F) on overall citizen satisfaction. Together, these influences explained 59 percent of the variation in overall citizen satisfaction with local government services in New York City. Although other researchers have discussed the importance of measuring citizen expectations in the context of explaining citizen satisfaction with local government services (Brown and Coulter 1983; Stipak 1979b, 1980), the Van Ryzin (2004) study is the first to explicitly test the expectancy disconfirmation with performance model using citizen survey data.

The present study seeks to replicate Van Ryzin's (2004) findings using a much different sample and survey methodology. It also seeks to compare results based on alternative measures of the expectations construct, in particular, the subtractive measure used by Van Ryzin (2004) and a perceptual measure suggested by Oliver (1997). This comparison provides a test of the sensitivity of the parameter estimates to the two main alternatives for operationalizing this critical construct in the model.

DATA AND METHOD

The data to test the models come from an online panel study of a sample of U.S. adults conducted in January and February 2003. The survey used the StudyResponse project's online panel, an opt-in panel of approximately 20,000 adult subscribers maintained by Syracuse University (StudyResponse 2003). Invitations were sent via e-mail to a random sample of panelists, with oversampling of males, blacks, and Hispanics because these groups are underrepresented in the StudyResponse panel. Monetary prizes were awarded on a lottery basis, and one reminder message was sent after one week to all nonrespondents. A total of 1,631 panelists received invitations to participate, of whom 615 completed the questionnaire, for a response rate of 38 percent, a fairly typical response rate for the StudyResponse panel (2003).

Perhaps more important than the response rate in an online survey, given the voluntary nature of the original pool of panelists, is how the characteristics of the respondents compare to a true random sample of the U.S. population. Therefore, table 1 compares the online study sample with results from a March 2002 Pew Center poll, a widely respected national telephone survey (Pew Research Center 2003). The Pew Center statistics were chosen because the variables are directly comparable and because they represent results obtained from a state-of-the-art, national probability sample of adults. The weighted Pew statistics also reflect U.S. Census estimates of the characteristics of the population, so both weighted and unweighted Pew data are shown. Compared to the Pew data, the study sample contains more people under forty and fewer people over sixty; the study sample also has higher levels of education than the Pew national probability sample; and the study sample somewhat overrepresents the Northeast and underrepresents the West. However,

Table 1
Study Sample Compared with Unweighted and Weighted Pew Center Data

	A Study Sample	B Unweighted Pew Data	C Weighted Pew Data	A–B difference	A–C difference
Gender					
Male	44.3	47.2	48.0	−2.9	−3.7
Female	55.7	52.8	52.0	2.9	3.7
Race/ethnicity					
White	76.9	76.4	74.8	0.5	2.1
Black	10.5	8.0	10.7	2.5	−0.2
Hispanic	7.6	7.2	9.5	0.4	−1.9
Other	5.1	8.3	4.9	−3.2	0.2
Age					
Under 20	1.1	3.3	3.8	−2.2	−2.7
20 to 29	30.7	14.3	16.4	16.4	14.3
30 to 39	28.5	17.7	19.3	10.8	9.2
40 to 49	23.4	22.7	22.4	0.7	1.0
50 to 59	12.2	15.3	15.1	−3.1	−2.9
60 to 69	3.3	10.8	9.4	−7.5	−6.1
70 and older	0.8	15.8	13.6	−15.0	−12.8
Education					
Less than high school	1.5	9.5	14.6	−8.0	−13.1
High school graduate	22.7	33.5	36.5	−10.8	−13.8
Some college	36.9	23.5	23.6	13.4	13.3
College graduate or more	39.0	33.4	25.3	5.6	13.7
Income					
Less than $10,000	5.2	6.5	7.8	−1.3	−2.6
$10,000 to under $20,000	8.9	9.4	10.9	−0.5	−2.0
$20,000 to under $30,000	13.6	13.0	13.7	0.6	−0.1
$30,000 to under $40,000	15.6	13.3	13.6	2.3	2.0
$40,000 to under $50,000	12.5	15.2	14.5	−2.7	−2.0
$50,000 to under $75,000	20.6	16.7	15.4	3.9	5.2
$75,000 to under $100,000	10.4	10.8	9.5	−0.4	0.9
$100,000 or more	6.2	5.0	5.3	1.2	0.9
Don't know/refused	7.0	10.2	9.3	−3.2	−2.3
Region					
Northeast	28.7	14.3	18.5	14.4	10.2
Midwest	24.9	22.1	23.3	2.8	1.6
South	29.5	35.1	36.1	−5.6	−6.6
West	16.9	28.4	22.1	−11.5	−5.2

the study sample closely mirrors the Pew national probability sample in terms of gender, race/ethnicity, and income.

The online survey instrument attempted to replicate the key variables used in the Van Ryzin (2004) study. There were some wording and other modifications, however, based largely on the fact that the online survey was self-administered as opposed to a telephone interview. In addition, the list of specific performance indicators, or service evaluations,

differs somewhat from that used in the prior New York study because the nationwide sample included people living in very different kinds of communities. (More will be said in the concluding section about how the results from a citizen survey involving a national panel and a great variety of jurisdictions compare with the results of single-city study.) Thus, the performance indictors, many of which come from the National Citizen Survey (Miller and Miller Kobayashi 2000), are somewhat more general. Table 2 shows the question wording, response scales, and descriptive statistics for the key variables. It should be noted that respondents were given an option of "not available/not applicable" for each specific service to allow for cases in which a particular public service was not available in their area (for example, public transportation) or they did not use or experience the service (for example, not having children in the public schools). These "not available/not applicable" responses were then coded as missing values for purposes of statistical analysis.

As in the Van Ryzin (2004) study, the service-specific performance indicators are treated as multiple indicators of a single, latent measure of overall local government performance. The remaining variables in the basic model—expectations, disconfirmation, and satisfaction—are measured with single-item observed variables. Two alternatives for measuring disconfirmation are compared, one a subtractive measure used by Van Ryzin (2004) and the other a perceived disconfirmation rating recommended by Oliver (1997). The subtractive measure is constructed from subtracting the expectations question from a rating question about the overall quality of local government services (see table 2). The perceived disconfirmation measure is a single-item rating scale adapted from Oliver (1997). Again, see table 2 for the question wording, response scales, and descriptive statistics for each of these variables.

MODELING RESULTS AND DISCUSSION

Figure 2 shows the standardized parameter estimates of the model with subtractive disconfirmation, which is the model tested by Van Ryzin (2004). (Standardized estimates represent the standard deviation change in the dependent variable associated with a one standard deviation increase in the independent variable. The model was estimated using AMOS 5 with full information maximum likelihood estimation and allowing for missing data.) All of the main paths in the model are in the predicted direction and very strong, with perhaps the exception of the path from performance to satisfaction (which is still statistically significant but notably weaker in magnitude than the other structural coefficients). The squared multiple correlation (R^2 in regression), shown next to each of the dependent variables, indicates that 83 percent of the variation in citizen satisfaction is explained by the model. Overall, these findings closely parallel Van Ryzin's (2004) New York modeling results and suggest additional support for the plausibility of the expectancy disconfirmation with performance model of citizen satisfaction with local government services.

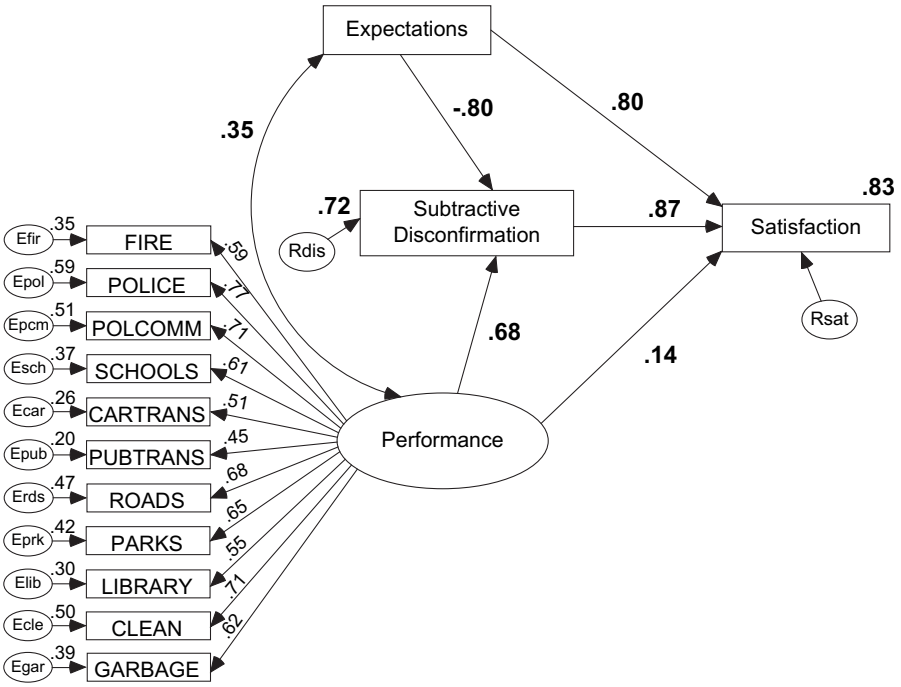
As in the New York study, the results here imply that the performance of city services primarily influences citizen satisfaction indirectly through disconfirmation of citizens' prior expectations. Indeed, the indirect effect of performance through disconfirmation (.59) is much greater than its direct effect on satisfaction (.14). (Indirect effects are found by multiplying the coefficients along the paths connecting the variables in the path diagram.) The expectations variable in turn exhibits very strong direct effects on satisfaction (.80), but this strong direct positive effect is largely offset by a strong negative indirect

Table 2
Question Wording and Descriptive Statistics for the Model Variables

	Variables in Order Asked During Interview	Min	Max	*N*	Mean	SD
Expectations	First—thinking back a few years—how would you rate your EXPECTATIONS back then of the overall quality of your local government services? 1 = my expectations were very LOW, to 7 = my expectations were very HIGH	1	7	614	4.27	1.35
	Now think about today . . . How would you rate each of the following services currently provided by the local government where you live? 1 = poor, 2 = fair, 3 = good, 4 = excellent					
CLEAN	Cleanliness of streets and sidewalks	1	4	615	2.89	.81
ROADS	Street and road maintenance	1	4	617	2.52	.91
PARKS	Parks and playgrounds	1	4	598	2.92	.85
LIBRARY	Public libraries (not including college or university libraries)	1	4	582	3.03	.85
GARBAGE	Garbage collection	1	4	589	3.01	.83
POLICE	Police protection	1	4	615	2.90	.85
POLCOMM	Police-community relations	1	4	604	2.73	.89
FIRE	Fire protection	1	4	602	3.26	.71
SCHOOLS	Public education (K–12)	1	4	583	2.74	.93
CARTRANS	Ease of car travel in the city	1	4	608	2.76	.97
PUBTRANS	Ease of travel by public transportation	1	4	514	2.37	1.00
QUALITY	Considering all of your recent experiences, how would you rate the OVERALL QUALITY of local government services where you live? 1 = very LOW quality, to 7 = very HIGH quality	1	7	615	4.17	1.33
Subtractive Disconfirmation	QUALITY minus EXPECT (see variables above for question wording)	−6	6	610	−.09	1.45
Satisfaction	Satisfaction means many things. Overall, how SATISFIED are you with the services provided by the local government where you live? 1 = very dissatisfied, to 7 = very satisfied	1	7	613	4.16	1.38
Perceived Disconfirmation	Considering all of your EXPECTATIONS, to what extent have the services provided by your local government fallen short of your expectations or exceeded your expectations? 1 = fallen short of my expectations, to 7 = exceeded my expectations	1	7	618	3.71	1.29

Note: Although in interview order, additional questions were asked in the survey; only the relevant analytical variables are presented above.

Figure 2
Parameter Estimates for the Model with Subtractive Disconfirmation (Standardized Coefficients). *Note*: All coefficients shown are statistically significant at the $p < .01$ level.

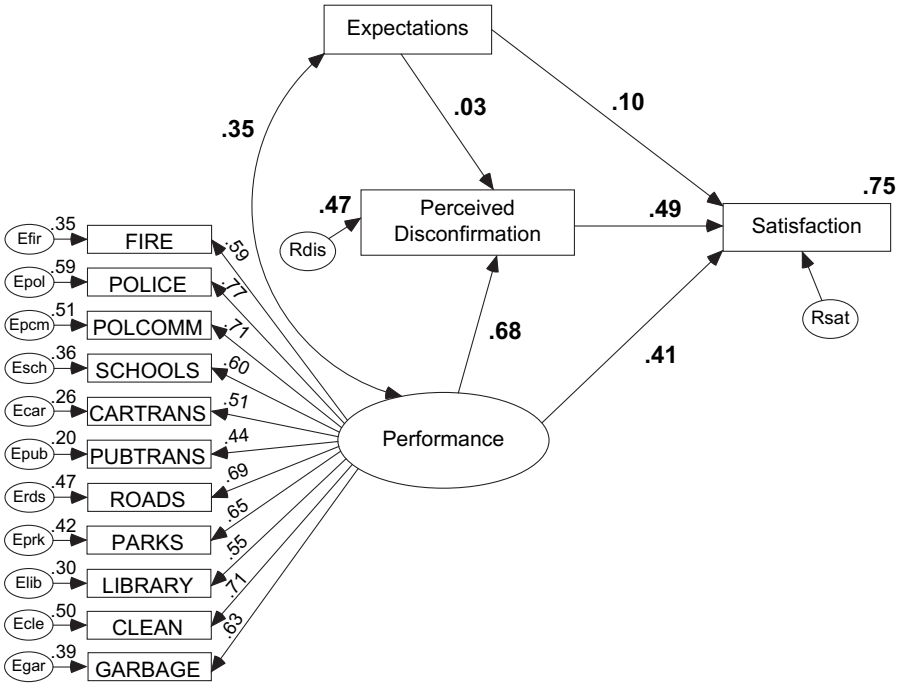


effect of expectations on satisfaction through disconfirmation (−.70). Again, these results are quite similar to Van Ryzin's (2004) modeling results, and indeed the parameter estimates here are somewhat larger in magnitude.

However, these larger parameter estimates combine to lead to a somewhat different substantive conclusion in at least one important area. In the present study the total effect of expectations on satisfaction (direct plus indirect effects) is only .10, which is less than half of the total expectations effect (.23) found in the New York study (Van Ryzin 2004). This difference is important because Van Ryzin (2004), in his discussion, speculates that the New York findings suggest that, if policymakers were able and willing to influence citizen expectations, they should heighten rather than lower expectations. In other words, the predicted overall net effect of lowering expectations (for example, warning the public to expect less in a difficult budget year) would be a reduction—not an increase—in citizen satisfaction with urban services, despite the fact that higher expectations directly lead to more negative disconfirmation. Although the total effect of expectations on satisfaction in the present study remains positive, the magnitude of the effect is low enough to cast some doubt on Van Ryzin's (2004) speculation of a strategic advantage to high citizen expectations.

Figure 3 shows the parameter estimates for the model with perceived disconfirmation replacing subtractive disconfirmation. Interestingly, the modeling results are much different than before (compare with figure 2). The relationship between expectations and disconfirmation in figure 3 is not even significantly different from zero—and is in the wrong direction. The magnitude of the link from disconfirmation to satisfaction is much reduced,

Figure 3
Parameter Estimates for the Model with Perceived Disconfirmation (Standardized Coefficients). *Note*: The Expectations → Perceived Disconfirmation coefficient is not significant ($p = .44$); all other coefficients are statistically significant at the $p < .01$ level.



although still fairly large and highly significant statistically. And the direct effect of performance on satisfaction is notably stronger. Indeed, the results in figure 3 suggest that the direct effect of performance (.41) is larger than the indirect effect of performance on satisfaction through disconfirmation (.33). Overall, these results imply a reduced role for disconfirmation—and almost no role for expectations—in the formation of citizen satisfaction with local government services.

Figure 4 presents estimates of a model incorporating perceived expectations as a mediator of subtractive expectations. Oliver (1997) in fact proposes this model as an illustration of the relationship between subtractive and perceived expectations. The path from performance to perceived disconfirmation is not significant ($b = .09$, $p = .11$), indicating that performance influences perceived disconfirmation predominantly through subtractive disconfirmation. The expectations variable has a strong positive direct effect on perceived disconfirmation, but this is offset by a strong negative indirect effect through subtractive disconfirmation. Thus, the total effect is close to zero, which conforms to the model with only perceived disconfirmation shown in figure 3.

This pattern of large positive direct effects offset by nearly equally large negative indirect effects also mirrors the results for the expectations variable in the model with subtractive disconfirmation (figure 4), as well as the findings of Van Ryzin's (2004) study. It should be pointed out, however, that this pattern of results may be attributed largely to the way in which the subtractive disconfirmation variable was constructed, namely, by subtracting the expectations variable itself from another variable (in this case, *quality*, see

Figure 4
Parameter Estimates for the Model with Both Subtractive and Perceived Disconfirmation (Standardized Coefficients). *Note*: The Performance → Perceived Disconfirmation coefficient is not significant ($p = .11$); all other coefficients are statistically significant at the $p < .01$ level.

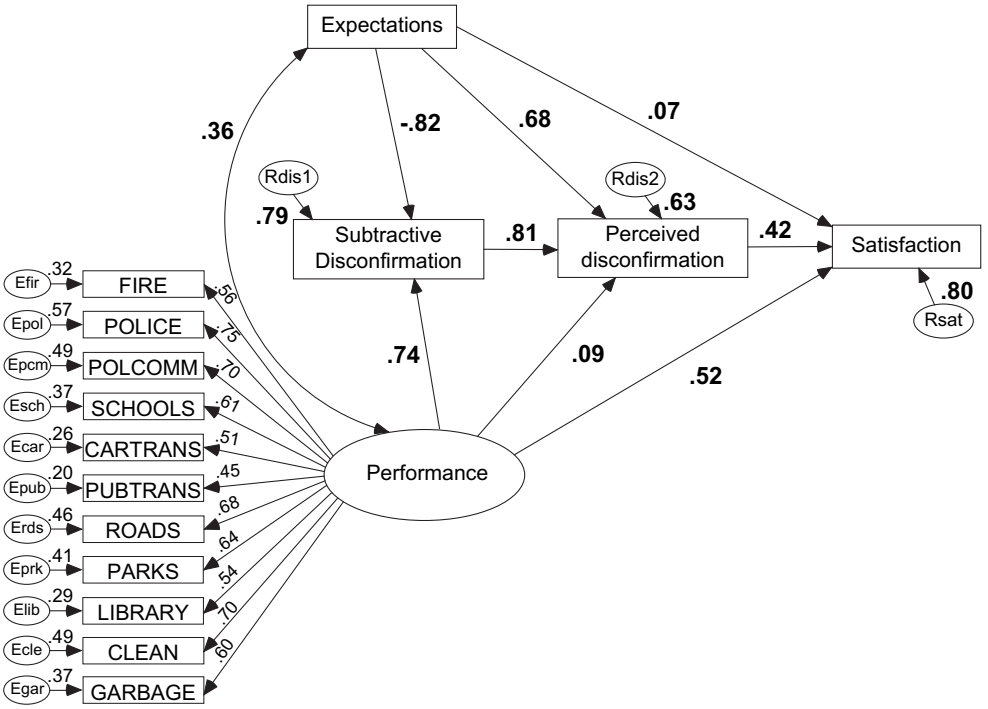


table 2). This calculation in effect guarantees a negative relationship between expectations and subtractive disconfirmation in the model. Thus, although the subtractive disconfirmation measure may make sense conceptually, it produces somewhat misleading statistical results. In particular, to the extent that the other variable in the subtractive disconfirmation dyad (*quality*) is strongly and positively related to a third variable (citizen satisfaction in figure 3, perceived disconfirmation in figure 4), the direct effect of expectations on that third variable will assuredly appear strong and positive as well (even when it remains uncorrelated with that variable in a bivariate analysis). In short, the subtractive disconfirmation variable appears to lead to an overstatement of the role of expectations in the model.

CONCLUSION AND POLICY IMPLICATIONS

Despite using a national panel and a much different survey methodology, many of the modeling results of this study, specifically, the results from the model with subtractive disconfirmation, closely parallel the findings reported in Van Ryzin (2004). The general consistency of these results is noteworthy because the national panel represents residents of very diverse communities across the United States with presumably much different structures of public service provision, whereas the Van Ryzin (2004) study focused only on New York City. In the present study, for example, only 19 percent of respondents report

living in a big city, fully 35 percent report living in the suburbs of a big city, another 35 percent say they live in a small town, and 11 percent live in a country village or rural area. And regionally, only 29 percent report living in the Northeast, while 25 percent live in the Midwest, 30 percent in the South, and 17 percent in the West. Thus, the fact that the modeling results across the two studies appear very similar, at least in the case of the model with subtractive disconfirmation, suggests that the expectancy disconfirmation with performance model may capture a fairly universal process used by citizens to form satisfaction judgments about local government services.

However, the results of this replication study do differ from the prior study in ways that have important policy and methodological implications. First, the modeling results using subtractive disconfirmation suggest that expectations have only about half as large a total effect (.10) on citizen satisfaction as in the prior study (total effect = .23; see Van Ryzin 2004). Moreover, use of a different, perceived measure of disconfirmation—a measure not available in the prior study—fails to support the hypothesized expectations-disconfirmation link. This result indicates that the model remains quite sensitive to the way in which disconfirmation is measured. Thus, the policy implication suggested by Van Ryzin (2004) of a potential strategic advantage to increasing, rather than decreasing, citizens' expectations is not well supported by these data. Further testing of the expectancy disconfirmation model needs to be done in the context of citizen satisfaction surveys, and more consistent evidence of the direction and magnitude of the parameter estimates must be developed, before trustworthy policy and public management implications can be stated.

There are several methodological implications that can be drawn from this study as well. First, the use of a subtractive measure of disconfirmation, although it may make sense conceptually, introduces a statistical bias in the modeling results that leads to an overstatement of the role of expectations in the model. Thus, new approaches to measuring expectations and disconfirmation may be needed to better test the expectancy disconfirmation model in the context of cross-sectional citizen surveys (recognizing that most citizen surveys are likely to be cross-sectional rather than longitudinal studies). For example, it might help to provide more cues to respondents to help them better recall their prior expectations regarding local government services, perhaps by embedding the prior expectations questions in a series of other retrospective questions. Another strategy might be to ask the disconfirmation question immediately after the expectations question. This would potentially prime respondents to emphasize the contrast inherent in the concept of disconfirmation.

Second, experimental research designs that independently manipulate expectations and performance are clearly necessary. Experimental simulations of private sector consumption have proven to be a fruitful method of testing hypotheses in the field of consumer behavior for some time, and these studies provide general support for the expectancy disconfirmation model (Cardozo 1965; Oliver and DeSarbo 1988; Tse and Wilton 1988). A similar strategy of using experimental designs to simulate the experience of local government services under varying manipulations of expectations and performance would provide a more rigorous test of the model in the context of citizen satisfaction with local government services.

Finally, the expectancy disconfirmation with performance model still holds promise as an explanation for how citizens form satisfaction judgments regarding local government services. The problems with the model relate largely to the prior expectations construct,

which is perhaps inherently difficult to measure reliably in a cross-sectional survey. The key construct of disconfirmation, operationalized both as a subtractive and a perceived measure in the present study, still remains a robust determinant with a large direct effect on citizen satisfaction judgments. And performance, measured using traditional rating scales for various local government services, also exhibits large, direct effects on citizen satisfaction in this study. The fact that these results are consistent across two studies, using two very different samples and survey methods—and using two different operationalizations of disconfirmation—lends support to the expectancy disconfirmation with performance model of citizen satisfaction. Thus, the model clearly deserves further empirical development and testing.

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