OFFICE OF SCALE RESEARCH

Technical Report
#9306

The Reliability & Validity of Role Ambiguity & Role Conflict Measures Pertaining to Salespeople

by

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Abstract

Marketing researchers have shown significant interest in the constructs of role ambiguity and role conflict as they relate to salesforce outcomes. Several authors have addressed the psychometric qualities of the extant measures of these constructs. Their findings have indicated a serious lack of consistency in both predictive and nomological validity. Unfortunately, these reviews have been based on research including a considerable number of non-sales activities. This study reviews the measures being used in marketing and focuses only on research pertaining to salespeople. No substantive conflicting findings were found. Eight measures purporting to measure role ambiguity (or role clarity) and five measuring role conflict were identified. The reliabilities of all of these measures were found to be moderate to good. The Rizzo, House, and Lirtzman (1970) role ambiguity and conflict measures were found to have reasonable evidence supporting claims of validity. The other identified measures had notably less supporting evidence for claims of validity, although some have been in existence for a relatively short period and may garner significant support in subsequent use.

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Role theory applied in an organizational setting explains how the effectiveness of salespeople can be impaired, to various degrees, with the presence of either or both role ambiguity (RA) and role conflict (RC). In our pursuit of understanding such potential impairment, it is critical that the measures used to assess RA and RC in substantiating theory be both reliable and valid. Although marketing researchers have been interested in the role theory constructs of RA and RC for close to two decades (e.g., Donnelly and Ivancevich 1975; Singh and Rhoads 1991, 1993; Brown and Peterson 1993), it is interesting to note that little attention has been directed towards the collective reliability and validity of the RA and RC measures being used specifically in marketing pertaining to salespeople.

Recently, researchers of RA and RC in marketing settings have sounded the siren of caution by stating that there have been conflicting findings vis-a-vis the validity of these measures (e.g., Fry, Futrell, Parasuraman, and Chmielewski 1986; Netemeyer, Johnston, and Burton 1990; Singh and Rhoads 1991). These claims of conflicting findings have been based on reviews (e.g., Fisher and Gitelson 1983, Jackson and Schuler 1985, King and King 1990) of disparate research, including such diverse samples as managers and engineers (Szilagyi and Keller 1976) and nurses (Jackson 1983).

In an attempt to explain the conflicting findings some researchers have looked at different moderating variables for different settings (e.g., one's level in the organization). The generalizability of these findings claiming inconsistency in the validity of RA and RC measures as they relate to salespeople is, however, very tenuous. Netemeyer, Johnson, and Burton (1990) cogently point out in their assessment of RA and RC from a causal perspective that there is no reason to believe that these constructs apply similarly in all environments. Brown mid Peterson (1993) recently found that industrial

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salespeople were more affected by RC and role clarity than other types of salespeople. Furthermore, larger differences would be expected to be found for others in less boundary spanning occupations (i.e., other than a sales occupation). The appropriateness of a measure in one context may not be so in another and differences in effects may exist which might not be apparent when aggregated, along with reducing the magnitude and possibly the direction of the overall effect of what is being measured. What is needed is a study which critically reviews marketing research enveloping RA mid RC measures from a reliability and validity perspective pertaining specifically and exclusively to salespeople. This would not only aid in assessing where we are, but where we need to go in this area of research. More importantly, such an effort should allow future researchers to more capably assess the appropriateness of utilizing existing RA and RC measures in current and future research efforts.

A review of the RA and RC literature pertaining to salespeople from 1970[1] to present was performed. No studies were found which have specifically and collectively reviewed the RC and RA measures being used in marketing, pertaining to salespeople only, from a reliability and validity perspective. Brown and Peterson (1993) conducted a meta-analysis of the antecedents and consequences of salesperson job satisfaction including RA and RC. The meta-analysis was conducted to assess aggregated study effects which might allow for stronger conferences to be made. However, given the intent of the meta-analyses conducted concerning RA and RC measures (e.g., Jackson and Schuler 1985, Brown and Peterson 1993), a meta-analysis does not afford the opportunity to address differences stemming from the measures used in the analysis. A more insightful approach, even with its limitations, is a detailed literature review looking at the development of each measure, its subsequent use, and associated findings. This is the approach adopted for this study. The review indicates eight different measures purporting to measure RA (or role clarity), which has been

used as an antonym of RA (see Table Al), and five purporting to measure RC (see Table A4).

The purpose of this study is to examine the measurement of the RA and RC constructs from a reliability and validity perspective, focusing specifically on research involving salespeople. Hence, a clearer picture will be provided as to whether there are conflicting findings and, if so, what some plausible explanations may be.

MEASURES OF ROLE AMBIGUITY AND ROLE CONFLICT

The most commonly used RA and RC measures were developed by Rizzo, House, and Lirtzman (1970). Their RA measure is a six-item, seven-point, Likert-type summated ratings scale ranging from "Very False" to "Very True" purporting to measure the degree of perceived RA. In the absence of a developed definition of RA, they developed their own to serve as the "specific domain" for the construct. RA was defined in terms of:

> "(1) the predictability of the outcome or responses to one's behavior…, and (2) the existence or clarity of behavior requirements, often in terms of inputs from the environment, which serve to guide behavior and provide knowledge that the behavior is appropriate" (Rizzo, House and Lirtzman 1970, p. 156).

The Rizzo, House and Lirtzman (1970) RC measure is an eight-item, seven-point, Likert-type summated ratings scale ranging from "Very False" to "Very True" purporting to measure a person's perceived RC. RC was defined as:

> "dimensions of congruency-incongruency or compatibility-incompatibility in the requirements of the role, where congruency or compatibility is judged relative to a set of standards or conditions which impinge upon role performance" (Rizzo, House and Lirtzman 1970, P. 155).

They incorporated Kahn et al.'s (1964) concepts of RC[2] into their "specific domain" including person-role, interrole, intersender, and role overload.

Ford, Walker, and Churchill (1975) developed another set of RA and RC measures. In defining the "specific domain" for the RA and RC constructs, a

literature review of empirical and conceptual studies of industrial salesmen was conducted. They found that the literature reviewed lacked enough information to define the "specific domain" thus, they conducted open-ended interviews with salesmen and a psychologist. The information indicated four sets of role partners: the company, sales manager/immediate supervisor, customers, and the family.

The RA measure of Ford, Walker, and Churchill (1975) is a twelve-item (divided into four dimensions), six-point, Likert-type scale ranging from "absolutely certain" to "absolutely uncertain" purporting to measure a respondent's perceived ambiguity pertaining to:

> "1) the company's (top management's) policies and procedures concerning how job activities should be performed, criteria used to evaluate performance and ways performance is rewarded;
> 2) the sales manager's expectations concerning the performance of various job activities and evaluation criteria;
> 3) customers' expectations concerning job performance and their evaluation criteria; and
> 4) the expectations of the family concerning the performance of his job" (Ford, Walker and Churchill 1975, P. 100).

The RC measure of Ford, Walker and Churchill (1975) is a fifteen-item (divided into four groups of role partners), five-point, Likert-type scale ranging from "strongly agree" to "strongly disagree" purporting to measure the perceived RC (intersender conflict) between the expectations of any two role partners. The four role partners are: sales manager/immediate supervisor, company, customers, and family. The measure of RC between any two role partners is assessed by summating the absolute differences between the role partners for each item.

Other identified measures of RA and RC were developed by, Chonko, Howell, and Bellenger (1986); Dubinsky and Mattson (1979); Kahn et al. (1964); Ivancevich and Donnelly (1974); Busch (1980); Jones, James, Bruni, Hornic, and Sells (1977); and Singh and Rhoads (1991). Chonko, Howell, and Bellenger (1986) developed a RA measure assessing the individual's perceptions of the clarity of

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information pertaining to the role (e.g., the sales job). The RA measure is a thirty-six item (divided into five dimensions), five-point, Likert-type scale ranging from "completely certain" to "not at all certain" purporting to measure a respondent's perceived ambiguity pertaining to: 1) family, 2) job, 3) customer, 4) supervisor, and 5) company. The measure attempts to capture an additional dimension (i.e., job) beyond those proposed by Ford, Walker, and Churchill (1975) (i.e., company, boss, customer, and family).

Chonko, Howell, and Bellenger (1986) also developed a RC measure purporting to measure person-role conflict limited to person-role consensus and person-role congruence.[3] The two measures were developed at the same time based on a literature review and interviews with salespeople. The RC measure is a thirty-item (divided into five dimensions), five-point, Likert-type scale ranging from "complete agreement" to "no agreement" purporting to measure the perceived RC (person-role) between the expectations of the individual salesperson and role set members. The five dimensions of the RC measure are: 1) family, 2) job, 3) supervisor, 4) customer, and 5) self.

Dubinsky mid Mattson (1979) developed measures for a retail setting to assess RA, RC, job satisfaction, organizational commitment, and job performance. The RA measure was developed by using questions similar to those developed by Donnelly and Ivancevich (1975) and by Ford, Walker, and Churchill (1975). They also used a modified version of the Ford, Walker, and Churchill (1975) RC measure. The RA measure is a twenty-four item, five-point, Likert-type summated ratings scale ranging from "very certain" to "very uncertain" purporting to measure the perceived RA of an individual in regards to the expectations of the role set members. The RC measure is a twenty-four item, five-point, Likert-type, summated scale ranging from "strongly agree" to "strongly disagree" purporting to measure the perceived RC between any two role partners. Indices were calculated for both RA and RC. However, no information was available as to the interpretations of the indiccs.[4]

Bagozzi (1978) used Kahn et al.'s (1964) Job Related Tension Index to measure RC. The index, a fifteen-item, Likert-type scale purports to measure the perceived tension one has toward various aspects of the job situation (e.g., the authority one has, the scope and responsibilities of the job). The number of points, anchors, and method for calculating the index were not available and could not be obtained by the authors.

Ivancevich and Donnelly (1974) developed a role clarity index based on previous research to measure the degree of adequate role-relevant information. The measure consisted of five questions with five alternative answers which were scored on a scale of 1 to 5. No additional information was available pertaining to the scale items or the anchors used. Busch (1980) also developed a measure of role clarity which consists of a summated score from five questions, each with a five-point scale ranging from "Not at all clear" to "Perfectly clear."

Tyagi (1985) used a questionnaire developed by Jones et al. (1977) to measure RA, RC, role overload, and sub-unit conflict. The questionnaire consisted of Likert-type items, and the scores for each dimension were summated for a composite score. No information could be obtained regarding the specific items used or their development.

Singh and Rhoads (1991) developed a multi-facet and multidimensional RA measure. The measure consists of seven facets, thirteen dimensions, and 45 items. The facets (and dimensions) used were: company (flexibility, work, and promotion), boss (support and demands), customer (interaction, objection, and presentation), ethical (external and internal), other managers, coworkers, and family. All items were assessed using a five-point, Likert-type scale ranging from "1= very certain" to "5= very uncertain." The measure attempts to capture three additional dimensions (i.e., other managers, coworkers, and ethical conduct) beyond those proposed by Ford, Walker, and Churchill (1975) (i.e., company, boss, customer, and family).

The following sections will review these measures of RA and RC from a reliability and validity perspective. The review naturally places greater emphasis on the Rizzo, House, and Lirtzman (1970), and the Ford, Walker, and Churchill (1975) RA and RC measures due to their longer history, and the Singh and Rhoads (1991) RA measure due to its substantially greater domain and psychometric development.

RELIABILITY

Reliability of a measure is important in that it suggests the consistency (i.e., internal consistency of a measure) of results as a function of the degree to which measures are free from error (Peter 1979). Three methods for assessing reliability are typically discussed in the literature: 1) test-retest, 2) alternative forms, and 3) internal consistency. During the time period when these measures were developed, the most commonly used and recommended approach (Churchill 1979) was the internal consistency method measured by the coefficient alpha. A low coefficient alpha indicates the sample of items perform poorly in capturing the construct (Churchill 1979). Nunnally (1978) indicates that alphas above .50 or .60 may be acceptable and that attempts to increase the alpha above .80 is generally futile. It should be noted that coefficient alpha has also been shown to be positively related to the number of scale items and scale points, and negatively related to sample size (Churchill and Peter 1984).

The reliability of the measures of RA and RC can be seen in Tables Al and A4. Rizzo, House, and Lirtzman's (1970) RA measure ranges from .76 to .90 for the different studies/calculations of the coefficient alpha. Similarly, the coefficient alphas for the RC measure ranges from .78 to .88. These ranges indicate that these two measures are demonstrating good reliability.

In the development of the RA and RC measures, 30 items were generated to capture the dimensions. A factor analysis was conducted and, two factors were found which accounted for 58% of the common variance (Factor I - RC accounted

for 32% of the variance, and Factor 11 - RA accounted for 26.3% of the variance) of the 30 items. The analysis was based on a sample of 199 office and plant manufacturing employees. The items were selected based on the following criteria: 1) items with loading greater than .30, 2) complex items (high loading on both factors) were excluded, and 3) items were subject to reliability analysis (Kuder-Richardson internal consistency reliabilities with Spearman-Brown corrections), and items were selected which contributed to the reliability of the final set. This resulted in six items being chosen for RA and eight items for RC. Internal consistency was demonstrated with reliability coefficients exceeding .70. It should be noted here, that although the criterion may be implicit rather than explicit, deleting complex items indicates a strategy bent on developing a unidimensional and/or "global" measure of these constructs.

Tables Al and A4 indicate that reliability coefficients for the Ford, Walker, and Churchill (1975) RA measure are from .80 to .91, and for the RC measure only two coefficient alphas were available of .85 and .71 (modified for a retail setting, Dubinsky and Mattson 1979). In the limited number of studies using these measures it appears that they are demonstrating good reliability. They developed their RC scale from an initial 84 dyadic expectations and reduced it to 68. The RA scale was reduced in a similar fashion from 46 to 41 items. The Cronbach alphas for RC and RA scales were .85 and .91 respectively. To test the revised instrument a split-half analysis was conducted. The split-half correlations for RC and RA were .67 and .82 respectively. However, it should be noted that the Ford, Walker, and Churchill (1975) RA and RC measures employ a method whereby absolute differences between the role partners for each item arc summated. Generally, the reliability associated with difference scores has been found to be less than the reliabilities of their components while attenuating their observed correlations with other variables (Peter, Churchill, and Brown 1993).

Singh and Rhoads (1991) performed an exploratory factor analysis to identify the dimensionality and factor structure for each of the seven facets of their RA measure. The composite reliabilities for each facet can be seen in Table Al. The coefficient alphas across facets range from .70 to .90 with an average of .82, demonstrating relatively good reliability. Using the same data, Singh (1993) assessed the dimensionality of each of the facets across two samples within a structural modeling assessment and found significant loadings for the measurement model (see Table Al). As in the 1991 study, relatively high composite reliabilities were found for each of the facets.

Coefficient alphas were also reported for the multiple facets of the Chonko, Howell, and Bellinger (1986) RA and RC measures. For the RA measure, the coefficient alphas across facets range from .63 to .88 with an average of .77. For the RC measure, the coefficient alphas across facets range from .85 to .91 with an average of .88. Dubinsky and Mattson (1979) reported a coefficient alpha of .91 for their RA measure. As with the Singh and Rhoads (1991) RA measure, these two measures appear to have demonstrated good reliability for the one study in which they were used.

For each of the other identified measures only one estimate of reliability was available (see Tables Al and A4) and generally these values were not as high as those reported for the Rizzo, House, and Lirtzman (1970) and Ford, Walker, and Churchill (1975) RA and RC measures. Without more information regarding the development of these measures and greater utilization of them, it is difficult to truly assess them in terms of generalizable reliability.

Given this assessment it seems apparent that a caveat is warranted. It should be noted that conventional scale development as posited by the early work of Churchill (1979) favors selection of items so similar, that doing so may underidentify constructs (Churchill and Peter 1984). Hence, a measure may possess high reliability but at the expense of its validity. The more contemporary perspective as posited by Gerbing and Anderson (1988) suggests that

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a construct's unidimensionality should be assessed by a confirmatory factor analysis (CFA) prior to assessing reliability. CFA takes into account internal as well as external consistency. The measures reviewed, with the exception of the Singh and Rhoads (1991) RA measure, were developed along the more traditional approach and thus, are exposed to its inherent limitations.

VALIDITY

While reliability deals with the consistency of a measure, validity addresses whether or not an instrument is in fact measuring what it was intended to measure. <u>The validation of an instrument measuring a construct is an ongoing process and is assessed in relative terms</u>. More specifically, "one validates not a measurement instrument but rather some use to which the instrument is put" (Nunnally 1978, p. 87). There are three general forms of measurement validity: content, construct, and predictive, and these are viewed as being complementary to one another. Each are discussed in turn along with a corresponding review of the measures.

Content Validity

Content validity represents the minimum level of validity and involves assessing whether or not the important dimension(s) of the "specific domain" of the construct are represented. In others words, content validity deals with the adequacy to which important content has been sampled and represented in the form of test items (Nunnally 1978). Content validity requires an a priori process in that a theoretical basis and a thorough plan for construction be present.

<u>Content validity (RA)</u>. There appears to be disagreement as to the salient dimensions of the RA construct and whether a global or a multidimensional measure should be used. These disagreements have implications for content validity of the measures and to some degree stem from Kahn et al. (1964) broadly defining RA without providing definitive boundaries. For example, based on Kahn et al.'s (1964) work Rizzo, House, and Lirtzman (1970) also broadly defined the

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RA construct. Their RA measure is a global instrument attempting to capture one's unidimensional ambiguity associated with one's role (Singh and Rhoads 1991), whereas, Ford, Walker, and Churchill (1975) defined RA much more specifically around four dimensions (i.e., company, boss, customer, and family). Their multidimensional measure attempts to capture the perceived RA pertaining to these dimensions. Singh and Rhoads (1991) and Chonko, Howell, and Bellenger (1986) also developed multidimensional RA measures and extended the number of dimensions found in the Ford, Walker, and Churchill (1975) RA measure.

Content validity (RC). As with the RA measures, similar disagreements exist for the RC measures. For example, Rizzo, House, and Lirtzman's (1970) RC measure is a global instrument attempting to capture one's unidimensional perceived conflicts associated with one's role. As discussed earlier they incorporated Kahn et al.'s (1964) concepts of RC into their "specific domain" (i.e., person-role, inter-role, intersender, intrasender, and role overload), whereas, Ford, Walker, and Churchill (1975) defined RC along four role partners (i.e., sales manager/immediate supervisor, company, customer, and family). Similarly, Chonko, Howell, and Bellenger (1986) defined RC around five facets (i.e., family, company, supervisor, customer, and job).

A question which eventually will have to be addressed, regarding these RA and RC measures, is whether one measure is better than another in capturing the essence of the construct and in what circumstances. Since this study is interested in reviewing the RA and RC measures from a measurement perspective, the discussion will stay within this topic domain and will not pursue an evaluation of the constructs' domains themselves. This issue is of no small importance but seems to mirror the on-going debate in the attitude literature[5] concerning the appropriate dimensionality of the attitude construct. The bottom line seems to be that the researchers need to determine a priori the specificity necessary in the measure

to capture the information needed to address the research problem at hand. Not enough information was available to include the remaining identified measures into the discussion pertaining to content validity.

Construct Validity

Construct validity refers to the isomorphism between the latent construct and its measure (Cronbach and Meehl 1955). It combines research on a particular instrument with a theory about what the instrument is measuring (Christiansen 1981), and has three subcomponents: convergent, discriminant, and nomological. For example, convergent validity is based on finding high correlations between measures purporting to measure the same construct. Similarly, discriminant validity is demonstrated by low correlations between measures that are not purporting to measure the same construct. Nomological validity "attempts to relate measurements to a theoretical model that leads to further deductions, interpretations, and tests, gradually building toward a nomological net, in which several constructs are systematically interrelated" (Green, Tull, and Albuam 1988, p. 252). Whereas reliability is concerned with internal consistency, construct validity focuses on external consistency. The identified measures will be reviewed from these three different construct validity perspectives.

Convergent and discriminant validity (RA). Table A2 illustrates that out of the nineteen studies involving RA, five of the studies addressed convergent and/or discriminant validity of the measures. Four of these studies involved the Rizzo, House, and Lirtzman (1970) RA measure. As previously discussed, in developing their RA and RC measures, a factor analysis was performed which identified the two factors. From the results of their study they claimed discriminant validity for their RA and RC measures. This is supported by the studies conducted by Kohli (1985); Teas, Walker, and Hughes (1979); Netemeyer, Johnston, and Burton (1990); and Singh and Rhoads (1991). It should be noted

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that using the two measures to validate each other still begs the question concerning their independent validity relative to other similar or dissimilar measures.

To assess the convergent and discriminant validity of the Rizzo, House, and Lirtzman (1970) RA measure, Kohli (1985) used the approach of factor analyzing items from different measures to assess whether or not the factor analysis would yield the same factors as purported by the individual measures. "Each item of a construct's measure is an independent attempt to measure the construct. Hence, if items from different instruments are factored analyzed, all items belonging to any one instrument should load predominantly on one factor (representing the construct) if they are to demonstrate convergent validity" (Kohli 1985, p. 428). From the findings Kohli (1985) claimed both convergent and discriminant validity of the measure.

Teas, Walker, and Hughes (1979) used the multitrait-multimethod (MTMM) approach, as outlined by Campbell and Fiske (1959), in assessing the discriminant validity of the Rizzo, House, and Lirtzman (1970) RA measure. The fundamental basis to the MTMM approach is that the multiple traits should be independent and the multiple methods should be independent operational definitions. Three criteria are used in the MTMM for assessing discriminant validity of a measure: 1) the correlation along the validity diagonal must be greater than the correlations in the column and row of the heterotrait-heteromethod triangle, 2) the correlations along the validity diagonal must be greater than the correlations in the heterotrait-monomethod triangle, and 3) the correlation patterns should be the same for the heterotrait-heteromethod and heterotrait-monomethod triangles (Campbell and Fiske 1959). All three criteria were met in the Teas, Walker, and Hughes (1979) study and thus discriminant validity was claimed.

It should be noted that Campbell and Fiske's (1959) MTMM approach has been criticized for the absence of standards in assessing convergent and discriminant

validity, the lack of a means for separating the different forms of variance (i.e., trait, method, and error), and the use of unrealistic assumptions (e.g., all traits are equally affected by method) (Bagozzi 1991). Additionally, interpretation of results may be difficult and large samples can result in misleading findings. In light of these difficulties some researchers have called for the use of second generation methods such as confirmatory factor analysis (CFA) and latent structure analysis (e.g., Bagozzi 1991, Fornell 1987). CFA not only provides a measure of overall fit but also a clear means for interpreting convergent and discriminant validity (i.e., chi-square and factor loadings) while allowing for separating the different variances. The essence of these methods center around the integration of theoretical and empirical knowledge.

Netemeyer, Johnston, and Burton (1990) assessed the convergent and discriminant validity of the Rizzo, House, and Lirtzman (1970) RA and RC measures by utilizing the more contemporary structural modeling approach. They compared the fit of a unidimensional model (i.e., the RA and RC factors with a unity correlation) with a two-factor structure model (i.e., RA and RC as two separate but correlated constructs). It was found that the two factor model was significantly (p<.01) better than the unidimensional model. From their results they claimed convergent and discriminant validity of the RA and RC measures.

Singh and Rhoads (1991), in assessing the convergent and discriminant validity of their RA measure, correlated it with Rizzo, House, and Lirtzman's (1970) RA and RC measures. As a result of their findings they claimed convergent and discriminant validity for their RA measure. Their findings also add support to the convergent and discriminant validity of the Rizzo, House, and Lirtzman (1970) RA and RC measures. As previously discussed, Singh (1993) assessed the dimensionality of each of the facets across two samples within a structural modeling assessment and found significant loadings (see Table A1) providing further support for claims of convergent and discriminant validity.

Ford, Walker, and Churchill (1975) used the MTMM approach. The first two of the three previously discussed criteria for the MTMM were met. The third criteria was not obtained since an inconsistency between the correlation patterns was found between the heterotrait-heteromethod and heterotrait-monomethod triangles. This third criteria is viewed as having implications for nomological validity which will be discussed later. However, based on obtaining the first two criteria of the MTMM, they claimed convergent and discriminant validity of their RA measure. Similarly, Chonko, Howell, and Bellenger (1986) claimed convergent and discriminant validity for their RA measure based on the results of the inter-scale correlations and a factor analysis (principal factor analysis with varimax - orthogonal rotation).

It appears from this review that there is reasonably good support for the claims of convergent and discriminant validity for the Rizzo, House, and Lirtzman (1970) RA measure. There is less convincing evidence for the Ford, Walker, and Churchill (1975) and Chonko, Howell, and Bellenger (1986) measures. The Singh and Rhoads (1991) measure demonstrated reasonably good convergent and discriminant validity in development, but has little history beyond the original study. There was no information found as to their convergent and discriminant validity for the other RA measures identified and listed in Table A2.

Convergent and discriminant validity (RC). Table A5 indicates that out of the ten identified RC studies, only three assessed the convergent and discriminant validity of the RC measure being used. As with their RA measure Ford, Walker, and Churchill (1975) used the MTMM approach and found the same results for their RC measure, i.e., two of three criteria were met. From these results they claimed convergent and discriminant validity for the RC measure.

Netemeyer, Johnston, and Burton (1990) used the same structural modeling approach in assessing the convergent and discriminant validity of the House, Rizzo, and Lirtzman (1970) RC measure as they did for the RA measure. From their results they claimed convergent and discriminant validity for the measures.

As with the their RA measure, based on inter-scale correlations and a factor analysis (principal factor analysis with varimax orthogonal rotation) Chonko, Howell, and Bellenger (1986) claimed convergent and discriminant validity for their RA measure. None of the other studies identified in Table A5 assessed the convergent and discriminant validity of the other identified RC measures. As discussed previously, validity is an ongoing process and should not stop with the origination of a measure. More evidence is needed to determine the true degree of convergent and discriminant validity of these RC measures.

Nomological validity (RA). The majority, 20 out of 24, of the RA (or role clarity) studies in Table A2 addressed nomological validity in some manner, though it was rarely explicitly stated. Interest in studying RA stems from its potentially negative impact on performance resulting from inadequate information being available to perform the job which leads to job dissatisfaction. Fourteen of the studies assessed the relationship of RA with job satisfaction. Ten of these studies used a global job satisfaction measure in their assessment. Of these ten studies three did not report levels of significance. The other seven found RA to be significantly negatively related to job satisfaction. One of the studies which did not report a level of significance is the study by Ford, Walker, and Churchill (1975). As discussed previously, they had conducted a MTMM analysis and found an inconsistency in the correlation patterns between the heterotrait-heteromethod and beterotrait-monomethod triangles. In another study, Bagozzi (1978) using the Ford, Walker, and Churchill (1975) RA measure found RA to be significantly negatively related to job satisfaction.

Singh and Rhoads (1991) using their multidimensional RA measure found the RA facets (i.e., company, boss, customer, ethical, other managers, co-workers, and family) all to be significantly negatively related to job satisfaction. Singh (1993) in conducting a structural equation modeling assessment of the multidimensional RA measure relative to job satisfaction, found significant parameter estimates for only three of the facets (i.e., company, boss and

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family) for a sample of sales and marketing executives and one facet (i.e., boss) for a sample of sales, marketing and customer service personnel of an industrial manufacturing firm. This was inconsistent with the findings in their 1991 study. The differences in the findings stemming from the two samples can be attributed to the mixed industrial manufacturing firm sample (i.e., sales, marketing and customer service personnel). As discussed earlier, this provides support for the importance of sorting out the studies which have only been based upon samples composed only of salespeople.

Two studies assessed the job satisfaction construct as multiple dimensions. Donnelly and Ivancevich (1975), using their own role clarity measure, found role clarity to be significantly positively related to the job satisfaction facets of autonomy, self-esteem, and self-actualization. Busch and Bush (1978) using Ivancevich and Donnelly's (1974) role clarity measure found, for both males and females, that role clarity is significantly positively related to the job satisfaction facets of supervision and work. The job satisfaction facet of customers was found to be significantly positively related for females but not for males. This indicates possible gender differences which might be highlighted by a multidimensional approach.

Table A2 indicates that less evidence is available for the relationship of RA or (role clarity) and job performance than is available for RA and job satisfaction. Seven studies were identified which explicitly look at RA (or role clarity) and job performance. Out of these seven studies only Hampton, Dubinsky, and Skinner (1986), which used Rizzo, House, and Lirtzman's (1970) RA measure, did not find a significant relationship between RA and job performance. It is interesting to note that Singh (1993) found only the customer facet of RA to be significantly related to job performance for the sales and marketing executive sample. All other facets were nonsignificant. For the industrial manufacturing firm sample consisting of sales, marketing and customer services personnel, four facets (i.e., company, customer, managers and co-workers) were found to be

significantly related to job performance. As with the RA measure, differences can be attributed to the mixed sample.

Busch and Bush (1978) using Ivancevich and Donnelly's (1974) role clarity measure found role clarity to be significantly positively related to job performance for males but not for females. Bagozzi (1978) using Ford, Walker, and Churchill's (1975) RA measure, Dubinsky and Mattson (1979) using their RA measure, and Dubinsky and Skinner (1984) using the Rizzo, House, and Lirtzman (1970) RA measure all found RA to be significantly negatively related with job performance. Similarly, Behrman and Perreault (1984) using a modified version of Rizzo, House, and Lirtzman's (1970) RA measure found RA to be significantly negatively related to job performance. The limited evidence provides some support for a nomological net for the theoretical relationship of RA and job performance.

Other variables have been tested for correlation significance in the pursuit of a nomological net. From reviewing Table A2 the main variables such as job satisfaction, job performance, and even the relationship with RC seems to be supported by the ongoing research and in the direction predicted by the theory. The nomological net has been strengthened as a result of the use of different measures and studies. As for the nomological validity of the individual measures, the greatest preponderance of evidence resides currently with the Rizzo, House, and Lirtzman (1970) RA measure since it was successfully used in eight of the studies assessing nomological validity. Some evidence supports the Ford, Walker, and Churchill (1975) RA measure which was used in four such studies, and for the other identified RA measures which were used only one or two times. Obviously, significantly greater usage of the newer and older, but less used, measures is required before a definitive statement concerning relative nomological validity can be made.

Nomological validity (RC). As with the RA measures, the majority of the RC studies, 14 out of 16, were concerned with nomological validity (see Table A5).

The interest in studying RC also stems from its potentially negative impact on performance as a result of conflicting expectations among the role senders which leads to dissatisfaction. Ten studies assessed the relationship of RC with job satisfaction all using a global measure of job satisfaction. Three of these studies did not report levels of significance.

Ford, Walker, and Churchill's (1975) MTMM analysis of the RC measure resulted in an inconsistency in the correlation patterns and thus did not provide any nomological validity support. The seven studies reporting levels of significance all found RC to be significantly negatively related to job satisfaction. These seven studies provide support for a nomological net for the theoretical relationship between RC and job satisfaction. No contradicting evidence was found.

Table A5 indicates that six studies examined the relationship between RC and job performance. Of these six studies one did not report levels of significance and two studies using Rizzo, House, and Lirtzman's (1970) RC measure did not find significance between RC and job performance. The other studies are in agreement in that they found RC to be significantly negatively related to job performance. Each of these studies used a different RC measure. The RC measures used in these three studies were: Kahn et al's (1964) Job Tension Index; Rizzo, House, and Lirtzman's (1970); and Ford, Walker, and Churchill's (1975). The limited evidence provides some support for a nomological net for the theoretical relationship of RC and job performance.

As with the RA measures, Table A5 indicates other variables have been tested for correlation significance in the pursuit of a comprehensive nomological net and that the main variables such as job satisfaction and job performance seem to be supported by the ongoing research and are in the direction predicted by theory. It has also been observed that contextual differences do make a difference (i.e., the composition of the sample employed). The Rizzo, House, and Lirtzman (1970) RC measure was used in seven of the

studies assessing nomological validity and thus has more evidence supporting the claim of nomological validity. The other RC measures were used one or two times each in the assessment of nomological validity and thus have less supporting evidence.

Predictive Validity

It should be noted that a comparison of the results from Tables A2 and A3, between the nomological validity and the predictive validity findings, for both RA and RC, is similar to comparing apples to oranges. The difference between what was found (significance vs. nonsignificance) in the nomological validity column versus the predictive validity column is the difference between zero and first order analyses. There is a higher probability of finding significance at the zero order level than at the first order due to partialling of the higher order. However, this does not imply conflicting findings. Additionally, the review does not indicate any conflicting findings for both RA and RC between the two forms of analyses.

A measure should not only have content and construct validity but ideally it should also exhibit predictive validity. Predictive validity deals with how well the measure is able to estimate the direction and magnitude of another theoretically related construct, event or behavior.

<u>Predictive validity (RA).</u> Table A3 indicates the methods and findings for the assessment of predictive validity for the RA measures. Seventeen of the twenty-three studies reviewed were interested in assessing predictive validity. The Rizzo, House, and Lirtzman (1970) RA measure was used in eleven of the studies. The Ford, Walker, and Churchill (1975) RA measure was used in three of the studies. The other identified RA measures were used only one time each in the assessment of predictive validity.

Eleven studies used RA (or role clarity) as predictors of job satisfaction. In seven of these studies RA (or role clarity) was found to be a

significant predictor of job satisfaction. The signs of the corresponding regression coefficients were all in the direction as predicted by the theory. The other four studies did not find RA to be a significant predictor of job satisfaction. The Rizzo, House, and Lirtzman (1970) RA measure was used in nine of the eleven studies, and RA was found to be a significant predictor of job satisfaction in six of these. The Ford, Walker, and Churchill (1975) RA measure was used in Bagozzi's (1978) study which did not find RA to be a significant predictor. However, in Hafer and McCuen's (1985) using the Ford, Walker, and Churchill (1975) RA measure, RA was found to be a significant predictor of job satisfaction. Two of the studies in Table A3 divided job satisfaction into intrinsic and extrinsic job satisfaction. The Rizzo, House, and Lirtzman (1970) RA (or role clarity) measure was used in both of these studies. In both studies RA was found to be a significant predictor and in the expected direction for both intrinsic and extrinsic job satisfaction.

Six studies in Table A3 examined RA as a predictor of job performance. Four of these used Rizzo, House, and Lirtzman's (1970) RA measure. Three of the four studies found RA to be a significant predictor of job performance and in the expected direction. The fourth study did not find RA to be a significant predictor of job performance. Two other studies used the Ford, Walker, and Churchill (1975) RA measure. In one case RA was found to be a significant predictor of job performance and in the other case it was not.

The review indicates that there is evidence supporting the claim for a moderate degree of predictive validity for the Rizzo, House, and Lirtzman (1970) RA measure pertaining to such variables as job satisfaction and performance. At the same time there is less evidence available to support the same claim for the other RA measures, though no contradicting evidence was found.

Predictive validity (RC). Table A6 indicates the methods and findings for the assessment of the predictive validity for the RC measures. Thirteen of the sixteen studies were interested in assessing predictive validity of the RC

measures. The Rizzo, House, and Lirtzman (1970) RC measure was used in eight of the studies. The Kahn et al. (1964) Job Related Tension Index was used in two of the studies. The other identified RC measures were used only one time each in the assessment of predictive validity.

Nine studies used RC as a predictor of overall job satisfaction. Eight of these studies found RC to be a significant predictor of job satisfaction. The signs of the corresponding regression coefficients were all in the direction predicted by the theory. The other study did not find significance. The Rizzo, House, and Lirtzman (1970) RC measure was used in seven of the nine studies and found RC to be a significant predictor of job satisfaction in six of them. Bagozzi (1978) and Hafer and McCuen (1985) using Kahn et al.'s (1964) Job Related Tension Index as a representation of RC, found RC to be a significant predictor of job satisfaction. Churchill, Ford, and Walker (1976) in using their RC measure and a multidimensional measure of job satisfaction found RC to be a significant predictor of the job satisfaction dimensions: supervision, company policies, promotion, and customers.

Only four studies in Table A6 examined RC as a predictor of job performance. Two of these studies found RC to be a significant predictor of job performance and the other two did not. All four studies used the Rizzo, House, and Lirtzman (1970) RC measure.

The review indicates that there is evidence supporting the claim for relatively good predictive validity of the Rizzo, House, and Lirtzman (1970) RC measure pertaining to job satisfaction. However, not enough evidence is available to assess the predictive validity of it pertaining to job performance. As for the other identified RC measures, there is not enough evidence to make an assessment as to predictive validity. However, no contradicting evidence was found.

LIMITATIONS AND CONCLUSIONS

This review of the RA (or role clarity) and RC measures being used in marketing pertaining to salespeople has provided an overview of the ongoing research in this area. Twenty-four RA (or role clarity) studies and sixteen RC studies were reviewed. Eight different RA (or role clarity) measures along with five RC measures were identified. The number of studies represents a significant amount of research. Nonetheless, in the absence of reliable and valid measures, theory substantiation cannot take place. Greater emphasis needs to be placed on the ongoing assessment, particularly of the reliability and validity of the measures being used. The validation of the measures has not been conducted on an ongoing basis and, subsequently, has not facilitated theory substantiation to the extent that it could.

Several limitations of the review conducted in this study will be discussed prior to the conclusions. The study is founded on a literature review (i.e., an extensive critical literature review). Such an approach can be criticized for being more qualitatively driven versus a more quantitative approach such as a meta-analysis. In view of the breadth and depth sought for this study, this approach provides an opportunity to understand more of what is really going on in this area of research, in terms of measurement issues, than might come about by a more quantitative approach. Both literature reviews and meta-analyses are characterized as being historically biased. However, there is something to be said for a measure's history of consistency in terms of reliability and validity across time and/or possibly contexts. Furthermore, we made no attempts to quantify our assessments of the measures other than noting the number of significant outcomes (or non-significant outcomes). Finally, no assessment was made of the constructs themselves (i.e., unidimensional vs. multidimensional, etc.). With these limitations in mind the following conclusions are offered.

The following measures were found to have demonstrated good reliability: the Rizzo, House, and Lirtzman (1970) RA and RC measures, the Ford, Walker, and Churchill (1975) RA and RC measures, the Dubinsky and Mattson (1984) RA measure, the Chonko, Howell, and Bellinger (1986) RA and RC measures, and the Singh and Rhoads (1991) RA measure. However, the findings reviewed here of the Ford, Walker, and Churchill (1975) RA and RC measures need to be viewed with caution given the criticisms associated with the use of difference scores data (Peter, Churchill, and Brown 1993).

In the process of reviewing the measures for content validity, the extent and form of representation of the constructs has been brought into a questionable light which needs to be addressed in the future. These issues were not dealt with here since this review was concerned with measurement issues and not the constructs themselves. This is not to say that the definitional issues related to these constructs have been settled, only that for the purposes of this review the definitions used by the various researchers were accepted as adequate for there purposes. It is highly likely that an epistemic gap between the constuctural definition and its operational definition exists to a greater extant in some instances than in others. As for the other identified measures, more information is needed to evaluate them pertaining to reliability and content validity.

Given the limitations of the methods used (e.g., MTMM) the preponderance of evidence does suggest the following. The Rizzo, House, and Lirtzman (1970) RA measure was found to have demonstrated good convergent and discriminant validity along with nomological validity. Unfortunately, only limited evidence was available for assessing the convergent and discriminant validity of their RC measure. From the reviewed research utilizing these two measures, there is reasonable evidence supporting the claims for relatively good nomological validity for the RC measure, a moderate degree of predictive validity for the RA measure pertaining to job satisfaction and performance, and good predictive

validity for the RC measure pertaining to job satisfaction. As for the Ford, Walker, and Churchill (1975) RA and RC measures, the Singh and Rhoads (1991) RA measure, and the other identified measures, the review indicated less support for claims of convergent and discriminant validity, nomological validity, and predictive validity, although it may be untimely to assess the Singh and Rhoads (1991) measure so early in its development and use. Notwithstanding, the Singh and Rhoads (1991) RA measure was developed based on the more contemporary scale development perspective than the others and thus, may benefit form a more rigorous methodological origination.

Several general conclusions can be drawn from this review. First, there was no direct evidence found indicating conflicting findings. Some studies did not find significance, but this does not imply conflicting findings. Second, a theoretical basis is required for the construction and selection of a measure for a particular use. Given the number of measures identified in this review, a theoretical basis is essential in the evaluation and selection process of an appropriate measure for a particular use. The dimensionality issue for RA (and presumably for RC) needs to be addressed in a thoughtful manner. We would recommend a dialogue not unlike the data manipulation exercises prevalent in the attitudinal literature and indeed already begun in Netemeyer, Johnston and Burton (1990).

It does seem that more than one perspective on the content validity of a construct measure can be useful. It is the responsibility of the researchers, given a choice of good multiple measures of a construct, to determine, based on the research problem, the appropriate measure for a specific application. Third, it is interesting to note from a methodological perspective that only two studies chose to utilize a structural modeling approach (i.e., Netemeyer, Johnston, and Burton 1990, Singh 1993). It seems advantageous that at least equal attention be given to this approach as to that of the MTMM approach, especially given the MTMM's known limitations. Finally, validity assessment

needs to be an ongoing process. This will provide a solid foundation on which the house of theory can be built.

Endnotes:

[1] Post the development of the Rizzo, House & Lirtzman (1970) measures.

[2] Kahn et al. (1964) identified five forms of RC. The first three are of the form sent-role conflict: intra-sender conflict, intersender conflict, and interrole conflict.

> 1. *Intra-sender conflict* - incongruent expectations from a single member of a role set.

> 2. *Intersender conflict* - incongruent expectations from two or more members of a role set.

> 3. *Interrole conflict* - incongruent expectations from members of two or more different role sets (King & King 1990, p. 49).

A fourth form of conflict, *person-role conflict*, was also identified. This form of conflict is a result of the differences between sent pressures and internal forces (e.g., needs and values of a person versus the demands of his/her role set). Finally, a more complex form of RC, *role overload*, refers to not being able to address all of the expectations of the role senders given the time constraints.

[3] Person-role consensus refers to the degree of congruence between the individual's perceptions of the role and the expectations of the role sender. Person-role congruence refers to the degree of congruence between an individual's needs and values pertaining to the role.

[4] When insufficient information was obtainable from published sources the authors attempted to contact the researchers using the scales reviewed in this paper for their help. In some cases this information was not provided after several requests.

[5] See Bagozzi and Burnkraut (1979) and Dillon and Kumar (1985) for an interesting perspective on this view.

REFERENCES

Bagozzi, Richard P. (1991), "Structural Equation Models in Marketing Research," <u>AMA's Advanced Research Techniques Forum Proceedings</u>, (ed.) William D. Neal, Chicago: American Marketing Association, 335-379.

---------- and R. E. Burnkrant (1979), "Attitude Organization and the Attitude-Behavior Relation: A Reply to Dillon and Kumar," <u>Journal of Personality and Social Psychology</u>, 49, 47-57.

---------- (1978), "Salesforce Performance and Satisfaction as a Function of Individual Difference, Interpersonal, and Situational Factors," <u>Journal of Marketing Research</u>, 15, 517-531.

Behrman, Douglas N. and William D. Perreault Jr. (1984), "A Role Stress Model of the Performance and Satisfaction of Industrial Salespersons," <u>Journal of Marketing</u>, 48 (Fall), 9-21.

Brown, Steven P. and Robert A. Peterson (1993), "Antecedents and Consequences of Salesperson Job Satisfaction: Meta-Analysis and Assessment of Causal Effects," <u>Journal of Marketing Research</u>, 30 (February), 63-77.

Busch, Paul (1980), "The Sales Manager's Bases of Social Power and Influence Upon the Sales Force," <u>Journal of Marketing</u>, 44 (Summer), 91-101.

---------- and Ronald F. Bush (1978), "Women Contrasted to Men in the Industrial Salesforce: Job Satisfaction, Values, Role Clarity, Performance, and Propensity to Leave," <u>Journal of Marketing Research</u>, 15, 438-448.

Campbell, Donald T. and Donald W. Fiske (1959), "Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix," <u>Psychological Bulletin</u>, 52, 81-105.

Chonko, Lawrence B., Roy D. Howell and Danny N. Bellenger (1986), "Congruence in Sales Force Evaluations: Relation to Sales Force Perceptions of Conflict and Ambiguity," <u>Journal of Personal Selling and Sales Management</u>, 6 (May), 35-48.

Christiansen, Harley D. (1981), <u>Basic Background for Test Interpretation</u>, Tuscon, Arizona: Peter Juul Press, Inc.

Churchill, Gilbert A. Jr. (1979), "A Paradigm for Developing Better Measures of Marketing Constructs, <u>Journal of Marketing</u>, 14 (February), 64-73.

---------- and J. Paul Peter (1984), "Research Design Effects on the Reliability of Rating Scales: A Meta-Analysis," <u>Journal of Marketing Research</u>, 21 (November), 360-375.

---------- Neil M. Ford and Orville C. Walker Jr. (1976), "Organizational Climate and Job Satisfaction in the Salesforce," <u>Journal of Marketing Research</u>, 13 (November), 323-332.

Cronbach, Lee L. and Paul E. Meehl (1955), "Construct Validity in Psychological Tests," <u>Psychological Bulletin</u>, 52, 281-302.

Dillon, W. R. and A. Kumar (1985), "Attitude Organization and the Attitude-Behavior Relation: A Critique of Bagozzi and Burnkrant's Reanalysis of Fishbein and Ajzen," Journal of Personality and Social Psychology, 49, 33-36.

Donnelly, James H. Jr. and John M. Ivancevich (1975), "Role Clarity and the Salesman," Journal of Marketing, (January), 71-74.

Dubinsky, Alan J. and Steven W. Hartley (1986), "A Path-Analytic Study of a Model of Salesperson Performance," Journal of the Academy of Marketing Science, 14, (Spring), 36-46.

---------- and Bruce E. Mattson (1979), "Consequences of Role Conflict and Ambiguity Experienced by Retail Salespeople," Journal of Retailing, 55, (Winter), 70-86.

---------- and Steven J. Skinner (1984), "Impact of Job Characteristics of Retail Salespeople's Reactions to Their Jobs," Journal of Retailing, 60, (Summer), 35-62.

Fisher, C. D. and R. Gitelson (1983), "A Meta-Analysis of the Correlates of Role Conflict and Ambiguity," Journal of Applied Psychology, 68, 230-333.

Ford, Nell M., Orville C. Walker Jr. and Gilbert A. Churchill Jr. (1975), "Expectation-Specific Measures of the Intersender Conflict and Role Ambiguity Experienced by Industrial Salesmen," Journal of Business Research, 3, 95-111.

Fornell, Claes (1987), "A Second Generation of Multivariate Analysis: Classification of Methods and Implications for Marketing Research," in Review of Marketing, (ed.) Michael J. Houston, Chicago: American Marketing Association, 407-450.

Fry, Louis W., Charles M. Futrell, A. Parasuraman, and Margaret A. Chmielewski (1986), "An Analysis of Alternative Causal Models of Salesperson Role Perceptions and Work-Related Attitudes," Journal of Marketing Research, 23 (May), 153-163.

Gerbing, David W. and James C. Anderson (1988), "An Undated Paradigm for Scale Development Incorporating Unidimensionality and Its Assessment," Journal of Marketing Research, 25 (May), 186-192.

Green, Paul E., Donald S. Tull and Gerald Albaum (1989), Research for Marketing Decisions, New Jersey: Prentice Hall.

Hafer, John and Barbara A. McCuen (1985), "Antecedents of Performance and Satisfaction in a Service Sales Force as Compared to an Industrial Sales Force," Journal of Personal Selling & Sales Management, (November), 7-17.

Hampton, Ron, Alan J. Dubinsky and Steven J. Skinner (1986), "A Model of Sales Supervisor Leadership Behavior and Retail Salespeople's Job-Related Outcomes," Journal of the Academy of Marketing Science, 14, (Fall), 33-43.

Ivancevich, John M. and James H. Donnelly Jr. (1974), "A Study of Role Clarity and Need for Clarity for Three Occupational Groups," Academy of Management Journal, 17(l), 28-36.

Jackson, Susan E. (1983), "Participation in Decision-Making as a Strategy for Reducing Job-Related Strain," <u>Journal of Applied Psychology</u>, 68, 3-19.

---------- and Randall S. Schuler (1985), "A Meta-analysis and Conceptual Critique of Research on Role Ambiguity and Role Conflict in Work Settings," <u>Organizational Behavior and Human Decision Processes</u>, 36, 16-78.

Jones, A. P., L. R. James, J. R. Bruni, C. W. Hornic, and S. B. Sells (1977), "Psychological and Organizational Climate: Dimensions and Relationships," <u>Technical Report 76-4</u>, Fort Worth: Texas Christian University, Institute of Behavior Research.

Kahn, Robert L., Donald M. Wolfe, Robert P. Quinn, and J. Diedrick Snock (1964), <u>Organizational Stress: Studies in Role Conflict and Ambiguity</u>, John Wiley & Sons, New York 26-31.

King, Lynda A. and Daniel W. King (1990), "Role Conflict and Role Ambiguity: A Critical Assessment of Construct Validity," <u>Psychological Bulletin</u>, 107(l), 48-64.

Kohli, Ajay K. (1985), "Some Unexplored Supervisory Behaviors and Their Influence on Salespeople's Role Clarity, Specific Self-Esteem, Job Satisfaction, and Motivation," <u>Journal of Marketing Research</u>, 22 (November), 424-433.

Netemeyer, Mark W. Johnston and Scot Burton (1990), "Analysis of Role Conflict and Role Ambiguity in a Structural Equations Framework," <u>Journal of Applied Psychology</u>, 75(2), 148-157.

Nunnally, Jum C. (1978), <u>Psychometric Theory</u>, 2nd edition, McGraw-Hill, New York.

Peter, J. Paul (1979), "Reliability: A Review of Psychometric Basics and Recent Marketing Practices," <u>Journal of Marketing</u>, 14 (February), 6-17.

----------, Gilbert A. Churchill, Jr., and Tom J. Brown (1993), "Caution in the Use of Difference Scores in Consumer Research," <u>Journal of Consumer Research</u>, 19 (March), 655-662.

Rizzo, John R., Robert J. House, and Sidney I. Lirtzman (1970), "Role Conflict and Ambiguity in Complex Organizations," <u>Administrative Science Quarterly</u>, 15, 150-163.

Singh, Jagdip and Gary K. Rhoads (1991), "Boundary Role Ambiguity in Marketing-Oriented Positions: A Multidimensional, Multifaceted Operationalization," <u>Journal of Marketing Research</u>, 28 (August), 328-338.

---------- (1993), "Boundary Role Ambiguity: Facets, Determinants, and Impacts," <u>Journal of Marketing</u>, 57 (April), 11-31.

Szilagyi, A. D. and R. T. Keller (1976), "A Comparative Investigation of the Supervisory Behavior Description Questionnaire (SBDQ) and the Revised Leader Behavior Description Questionnaire (LBDQ-Form XII)," <u>Academy of Management Journal</u>, 19, 642-649.

Teas, R. Kenneth (1980), "An Empirical Test of Linkages Proposed in the Walker, Churchill, and Ford Model of Salesforce Motivation and Performance," <u>Journal of the Academy of Marketing Science</u>, 8, (Winter), 58-72

---------- (1983), "Supervisory, Behavior, Role Stress, and the Job Satisfaction of Industrial Salespeople," <u>Journal of Marketing Research</u>, 20 (February), 84-91.

----------, John G. Wacker and R. Eugene Hughes (1979), "A Path Analysis of Causes and Consequences of Salespeople's Perceptions of Role Clarity," <u>Journal of Marketing Research</u>, 16 (August), 355-369.

Tyagi, Pradeep K. (1985), "The Effects on Stressful Organizational Conditions on Salesperson Work Motivation," <u>Journal of the Academy of Marketing Sciences</u>, 13 (Spring), 290-309.

Walker, Orville C. Jr., Gilbert A. Churchill Jr. and Neil M. Ford (1975), "Organizational Determinants of the Industrial Salesman's Role Conflict and Ambiguity," <u>Journal of Marketing</u>, 39, (January), 32-39.

Table A1
ROLE AMBIGUITY MEASURES - RELIABILITY

Scale Name & Originator(s)	Author(s) & Year - Journal	Sample Size & Type	Coefficient Alpha
Role Clarity-Rizzo, House & Lirtzman (1970)	Teas, Wacker & Hughes (1979)-JMR	107 salespeople	.77
Role Ambiguity-Rizzo, House, & Lirtzman (1970)	Teas (1980)-JAMS	127 industrial salespeople	.79
Role Ambiguity-Rizzo, House, & Lirtzman (1970)	Teas (1983)-JMR	116 salespeople	.82
Role Ambiguity-Modified version of Rizzo, House, & Lirtzman's (1970)	Behrman & Perreault (1984)-JM	196 salespeople	.83
Role Ambiguity-Rizzo, House, & Lirtzman (1970)	Dubinsky & Skinner (1984)-JR	116 retail salespeople	NR
Role Clarity-Rizzo, House & Lirtzman (1970)	Kohli (1985)-JMR	114 salespeople from three industrial products companies	.85
Role Clarity-Rizzo, House & Lirtzman (1970)	Dubinsky & Hartley (1986)-JAMS	120 insurance salespeople	.76
Role Clarity-Rizzo, House & Lirtzman (1970)	Hampton, Dubinsky & Skinner (1986)-JAMS	116 retail salespeople	.74
Role Clarity-Rizzo, House & Lirtzman (1970)	Fry, Futrell, Parasuraman & Chmielewski (1986)-JMR	216 salesmen of a pharmaceutical company	.90
Role Ambiguity-Rizzo, House, & Lirtzman (1970)	Michaels, Cron, Dubinsky & Joachimsthaler (1988)-JMR	215 salespeople	.85
Role Ambiguity-Rizzo, House, & Lirtzman (1970)	Netemeyer, Johnston & Burton (1990)-JAP	183 salespeople	.83
Role Ambiguity-Ford, Walker & Churchill (1975)	Ford, Walker & Churchill (1975)-JBR	265 industrial salesmen from 10 firms in 7 different industries	.91
Role Ambiguity-Ford, Walker & Churchill (1975)	Walker, Churchill & Ford (1975)-JM	265 industrial salesmen from 10 firms in 7 different industries	NR
Role Ambiguity-Ford, Walker & Churchill (1975)	Churchill, Ford & Walker (1976)-JMR	265 industrial salesmen from 10 firms in 7 different industries	NR
Role Ambiguity-Ford, Walker & Churchill (1975)	Bagozzi (1978)-JMR	123 (sample 1) industrial salespeople assigned to territories 38 (sample 2) industrial salespeople assigned to accounts	.81 (sample 1) .80 (sample 2)
Role Ambiguity-Modified version of Donnelly & Ivancevich's (1974) and Ford, Walker & Lirtzman's (1975) measures	Dubinsky & Mattson (1979)-JR	203 retail salespeople	.91
Role Ambiguity-Ford, Walker & Churchill (1975)	Hafer & McCuen (1985)-JPSSM	336 insurance salespeople	.80
Role Clarity Index-Ivancevich & Donnelly (1974)	Donnelly & Ivancevich (1975)-JM	86 salespeople	.76*
Role Clarity Index-Ivancevich & Donnelly (1974)	Busch & Bush (1978)-JMR	39 male and 39 female sales representatives	NR
Role Clarity-Busch (1980)	Busch (1980)-JM	Salespeople from three pharmaceutical firms: 159 (firm 1), 128 (firm 2), & 128 (firm 3)	.81
Role Ambiguity-Jones, James, Bruni, Hornic &	Tyagi (1985)-JAMS	104 salespeople	.68

Sells (1977)			
Role Ambiguity-Chonko, Howell & Bellenger (1986)	Chonko, Howell & Bellenger (1986)-JPSSM	121 industrial salespeople	Alpha per facet: Family .63 Job .88 Company .69 Supervisor .78 Customers .87
Role Ambiguity-Singh & Rhoads (1991)	Singh & Rhoads (1991)-JMR	472 sales & marketing people from the Association of Sales & Marketing Executives (SME) 216 sales & marketing people along with customer service personnel from an industrial mfg. Company (IS)	Alpha per facet/dimension: Company Flexibility .70 Work .84 Promotion .75 Boss Support .86 Demands .86 Customer Interaction .78 Objection .81 Present .81 Ethical External .90 Internal .83 Other mgrs .88 Coworkers .87 Family .88
Role Ambiguity-Singh & Rhoads (1991)	Singh (1993)-JM	472 sales & marketing people from the Association of Sales & Marketing Executives (SME) 216 sales & marketing people along with customer service personnel from an industrial mfg. Company (IS)	Composite reliability by facet: Company .77 Supervisor .87 Customer .81 Ethical .68 Other mgrs .83 Coworker .85 Family .86

JAMS-Journal of the Academy of Marketing Science	NR-Not reported	*Spearman-Brown internal consistency reliability coefficient
JAP-Journal of Applied Psychology	JMR-Journal of Marketing Research	
JBR-Journal of Business Research	JPSSM-Journal of Personal Selling & Sales Management	
JM-Journal of Marketing	JR-Journal of Retailing	

Table A2
ROLE AMBIGUITY MEASURES-CONSTRUCT VALIDITY

Scale Name & Originator(s)	Author(s) & Year	Method & Assessment of Convergent & Discriminant Validity	Nomological Validity Findings (measure's correlation with other theoretically related variables or as specified)		
Role Clarity-Rizzo, House & Lirtzman (1970)	Teas, Wacker & Hughes (1979)	MTMM (only discriminant validity was assessed), DVD	Correlation patterns were found to be consistent. Pattern of the MTMM matrix was checked for consistency.		
Role Ambiguity-Modified version of Rizzo, House & Lirtzman's (1970)	Behrman & Perreault (1984)	NPOS	W/Job performance w/Job satisfaction w/Role conflict w/Communications frequency w/Closeness of supervisor w/Influence over standards w/Innovativeness required w/Integrativeness required w/Hours worked w/Sales experience w/Need for achievement w/Locus of control	−.394** −.547** .517** .017 −.426** −.108 −.067 .253** −.076 −.276** −.314** .373**	
Role Ambiguity-Rizzo, House & Lirtzman (1970)	Dubinsky & Skinner (1984)	NPOS	W/Variety w/Autonomy w/Feedback w/Task Identity w/Overall job satisfaction w/Role Conflict w/Work motivation w/Organizational commitment w/Performance	−.078 SLNR −.283 SLNR −.183 SLNR −.299 SLNR −.333 SLNR .401 SLNR −.363 SLNR −.314 SLNR −.205 SLNR	
Role Clarity-Rizzo, House & Lirtzman (1970)	Kohli (1985)	Factor analysis, CDVD	NPOS		
Role Clarity-Rizzo, House & Lirtzman (1970)	Dubinsky & Hartley (1986)	NPOS	W/Self-monitoring w/Job involvement w/Overall job satisfaction w/Role conflict w/Work motivation w/Organizational commitment w/Performance	.130 −.302** −.427** .270** −.089 −.027 −.288**	
Role Clarity-Rizzo, House & Lirtzman (1970)	Hampton, Dubinsky & Skinner (1986)	NPOS	W/initiation structure w/Consideration w/Role conflict w/Job performance w/Overall job satisfaction w/Satisfaction with supervisor w/Work motivation w/Organizational commitment	−.37* −.37* .40* .05 −.33* −.41* −.38* −.31*	
Role Clarity-Rizzo, House & Lirtzman (1970)	Fry, Futrell, Parasuraman & Chmielewski (1986)	NPOS		Actual (SLNR)	Reproduced from trimmed

				model (SLNR)
			W/Job anxiety	.24	.08
			W/Job satisfaction	−.51	−.34
			W/Fellow workers satisfaction	−.41	.00
			W/Satisfaction with supervisor	−.52	−.26
			W/Pay satisfaction	−.36	−.06
			W/Promotion & developmental satisfaction	−.42	−.06
			W/Company policy & support satisfaction	−.62	−.35
			W/Customer satisfaction	−.41	−.41

Measure	Study	Method	Construct	Value 1	Value 2
					model (SLNR)
			W/Job anxiety	.24	.08
			W/Job satisfaction	−.51	−.34
			W/Fellow workers satisfaction	−.41	.00
			W/Satisfaction with supervisor	−.52	−.26
			W/Pay satisfaction	−.36	−.06
			W/Promotion & developmental satisfaction	−.42	−.06
			W/Company policy & support satisfaction	−.62	−.35
			W/Customer satisfaction	−.41	−.41
Role Ambiguity-Rizzo, House & Lirtzman (1970)	Michaels, Cron, Dubinsky & Joachimsthaler (1988)	NPOS	W/Formalization W/Role conflict W/Organizational commitment W/Work alienation	−.57*** .61*** −.58*** .44***	
Role Ambiguity-Rizzo, House & Lirtzman (1970)	Netemeyer, Johnston & Burton (1990)	Structural equation modeling-the fit of a two factor (RA & RC) vs. an unidimensional model, CDVD	W/Role conflict W/Tension W/Satisfaction W/Propensity to leave	.457** .277** −.355** .370**	
Role Ambiguity-Rizzo, House & Lirtzman (1970)	Ford, Walker & Churchill (1975)	MTMM, CDVD	**W/Role conflict** **W/Job satisfaction** **Pattern of the MTMM matrix was checked for consistency & found to be inconsistent.**	**.075 SLNR** **−.356 SLNR**	
Role Ambiguity-Rizzo, House & Lirtzman (1970)	Walker, Churchill & Ford (1975)	NPOS	**W/Organization departments affecting activities** **W/Closeness with which supervised** **W/Influence in determining standards** **W/Innovativeness** **W/Frequency of contact** **W/Time in position**	**.039** **−.189**** **−.069** **.010** **−.011** **−.117***	
Role Ambiguity-Ford, Walker & Churchill (1975)	**Bagozzi (1978)**	**NPOS**		**Sample 1**	**Sample 2**
			W/Performance **W/Job satisfaction** **W/Generalized self-esteem** **W/Specific self-esteem** **W/Other directedness** **W/Verbal intelligence** **W/Job-related tension** **W/Territory potential** **W/Workload**	**−.26**** **−.24**** **−.32***** **−.39***** **.38***** **−.05** **.44***** **−.26***** **−.22***	**−.15*** **−.21**** **−.20**** **−.31***** **.29***** **−.04** **.42***** **−.14*** **−.03**
Role Ambiguity-Modified version of Donnelly & Ivancevich's (1974) and Ford, Walker & Lirtzman's (1975) measures	**Dubinsky & Mattson (1979)**	**NPOS**	**W/Job satisfaction** **W/Job performance** **W/Organizational commitment**	**−.25**** **−.25**** **−.31****	

Role Ambiguity-Ford, Walker & Churchill (1975)	Hafer & McCuen (1985)	NPOS	W/Generalized self-esteem		-.29***
			W/Job satisfaction		-.24***
			W/Task-specific self-esteem		-.12*
			W/Sales performance		-.05
			W/Other directedness		.27***
			W/Role Conflict (job related tension)		.48***
Role Clarity Index-Ivancevich & Donnelly (1974)	Donnelly & Ivancevich (1975)	NPOS	W/General job interest		.39**
			W/Opportunity for job innovation		.44**
			W/Job satisfaction facets:		
			Autonomy		.61**
			Esteem		.54**
			Self-actualization		.38**
			W/Job tension		-.36**
			W/Propensity to leave		-.31**
Role Clarity Index-Ivancevich & Donnelly (1974)	Busch & Bush (1978)	NPOS		Females	Males
			W/Job satisfaction:		
			Customers	.65**	.22
			Work	.59**	.41**
			Supervision	.27**	.30*
			Coworkers	.20	.09
			Promotion	.18	.28
			Pay	.13	-.08
			W/Propensity to leave	-.43**	-.31*
			W/Performance	.21	.52**
Role Clarity-Busch (1980)	Busch (1980)	NPOS	Firm 1:		
			W/Power bases		
			Expert		.46***
			Referent		.24**
			Legitimate		.11
			Reward		-.11
			Coercive		-.05
			Firm 2:		
			W/Power bases		
			Expert		.02
			Referent		.24**
			Legitimate		.25**
			Reward		.08
			Coercive		-.01
			Firm 3:		
			W/Power bases		
			Expert		.21**
			Referent		.12
			Legitimate		.15*
			Reward		-.05
			Coercive		-.13
			Male-Female differences:	Male	Female
			W/Power bases		
			Expert	.33*	-.04
			Legitimate	.12	-.03
Role Ambiguity-Jones, James, Bruni, Hornic & Sells (1977)	Tyagi (1985)	NPOS	W/Role conflict		.01
			W/Role overload		.03
			W/Subunit conflict		.12
Role Ambiguity-Chonko, Howell & Bellenger (1986)	Chonko, Howell & Bellenger (1986)	Factor analysis, CDVD	W/Congruence of performance evaluations and facets of role ambiguity:		
			Family		.16*
			Job		-.15*
			Company		.18*

				Supervisor Customer			.10 -.12		
Role Ambiguity-Singh & Rhoads (1991)	Singh & Rhoads (1991)	Correlations w/Rizzo et al.'s (1970) measure of RA & RC for two separate samples (SME & IS). CDVD	Facets Co.	Boss	Cust	Ethi-cal	Mgr	Co-wkrs	Fam-ily
			W/Exp. -.17***	-.08*	-.14**	-.05	-.12**	-.08*	-.10*
			W/Ed. .08*	.03	.06	-.05	-.01	-.00	-.04
			W/Sex .13**	.09	.06	.10*	.07	.10*	-.02
			W/Locus of control .22***	.22***	.15**	.11*	.27***	.25***	.13**
			W/Job satisf. -.60***	-64***	-.42***	-.30***	-.41***	-.39***	-.23***
			W/Job perf. -.34***	-.25***	-.44***	-.27***	-.28***	-.27***	-.21***
			W/Job tension .51***	.50***	.44***	.29***	.37***	.31***	.19***
			W/turn-over intent .52***	.50***	.25***	.31***	.27***	.22***	.10*

			Estimated Parameters for the Structural Model-SME Sample						
Role Ambiguity-Singh & Rhoads (1991)	Singh (1993)	Structural equation modeling-constructs of the measurement model were found to have significantly large loadings. CDVD	Facets Co.	Boss	Cust	Eth-ical	Mgrs	Co-wkrs	Fam-ily
			Job satisf. -.43*	-.46*	NS	NS	NS	NS	.15*
			Job perf. NS	NS	-.58*	NS	NS	NS	NS
			Job tension 1.19*	NS	NS	NS	NS	.20*	NS
			Feedback -.21*	-.35*	-.15*	-.24*	-.26*	-.22*	-.17*
			Autonomy -.82*	-.64*	-.90*	-.89*	-1.0*	-1.07	-.66*
			Consid. -.17*	-.34*	NS	-.11*	.10*	NS	NS

			Estimated Parameters for the Structural Model-IS Sample						
			Facets Co.	Boss	Cust	Eth-ical	Mgr	Co-wkrs	Fam-ily
			Job satisf. NS	-.50*	NS	NS	NS	NS	NS
			Job perf. -.42*	NS	-.26*	NS	-.18*	.29*	NS
			Job tension NS	.55*	NS	NS	NS	NS	NS
			Feedback NS	-.40*	NS	NS	NS	NS	NS
			Autonomy -.1.15*	-.49*	1.27*	-1.24	-1.09	-1.18	-.62*
			Consid. -.25*	-.27*	.25*	NS	.42*	NS	.25*

NPOS-not part of study	MTMM-multitrait-multimethod	* p<.05
NS-not significant at p<.05	CDVD-convergent & discriminant validity demonstrated	** p<.01
SLNR-significance level not	DVD-discriminant validity	*** p<.001

reported	demonstrated	

Scale Name & Originator(s)	Author(s) & Year	Method of Assessing Predictive Validity & Findings	
Role Clarity-Rizzo, House & Lirtzman (1970)	Teas, Wacker & Hughes (1979)	Path analysis. Regression coefficient (STD) of role clarity & significance for each DV model: Social need fulfillment (TRMD) Esteem need fulfillment (TRMD) Autonomy need fulfillment (TRMD) Self actualization need fulfillment (full) Higher order need fulfillment (TRMD) Security need fulfillment Lower order need fulfillment	 .206* .433*** .506*** .121* .494*** NS NS
Role Ambiguity-Rizzo, House & Lirtzman (1970)	Teas (1980)	Path analysis. Regression coefficient (STD) of role ambiguity & significance for each DV model: Extrinsic job satisfaction (TRMD) Intrinsic job satisfaction (TRMD)	 -.235* -.487*
Role Ambiguity-Rizzo, House & Lirtzman (1970)	Teas (1983)	Path analysis. Regression coefficient (STD) of role ambiguity & significance for the DV model of: Job satisfaction (full)	 NS
Role Ambiguity-Modified version of Rizzo, House & Lirtzman's (1970)	Behrman & Perreault (1984)	Path analysis. Regression coefficient (STD) of role ambiguity & significance for the DV model of: Job performance (full) Job satisfaction (TRMD)	 -.429** -.318**
Role Ambiguity-Rizzo, House & Lirtzman (1970)	Dubinsky & Skinner (1984)	Path analysis. Regression coefficient (STD) of role ambiguity & significance for the DV model of: Job satisfaction (TRMD) Work motivation (TRMD) Performance (TRMD)	 -.192** -.266** -.157*
Role Clarity-Rizzo, House & Lirtzman (1970)	Kohli (1985)	Path analysis. Regression coefficient (STD) of role clarity & significance for each DV model: Specific self-esteem (TRMD) Job satisfaction (TRMD) Intrinsic job	 .24* .49*** .52***

		satisfaction (TRMD) Extrinsic job satisfaction (TRMD) Extrinsic instrumentalities (TRMD)	.33*** .19*	
Role Clarity-Rizzo, House & Lirtzman (1970)	Dubinsky & Hartley (1986)	Path analysis. Regression coefficient of role ambiguity & significance for each DV model: Overall job satisfaction (TRMD) Work motivation (full) Job performance (TRMD)	 -.427** NS -.356**	
Role Clarity-Rizzo, House & Lirtzman (1970)	Hampton, Dubinsky & Skinner (1986)	Path analysis. Regression coefficient (STD) of role ambiguity & significance for each DV model: Satisfaction with supervisor (full) Work motivation (full) Job performance Overall job satisfaction Organizational commitment	 .14(p<.06) -.20* NS NS NS	
Role Clarity-Rizzo, House & Lirtzman (1970)	Fry, Futrell, Parasuraman & Chmielewski (1986)	Path analysis. Regression coefficient (STD) of role ambiguity & significance for each DV model: Job anxiety Job satisfaction Fellow workers satisfaction Satisfaction w/supervisor Pay satisfaction Promotion & development satisfaction Company policy & support satisfaction Customer satisfaction (Each row refers to the original, augmented & TRMI) model for each corresponding DV model)	Model 1 -.00 -.00 ----- ----- -.24* -.29 ----- -.12 ----- ----- ----- ----- ----- -.06 ----- -.06 ----- -.22* -.28* ----- -.34* -.41	Model 2 ----- ----- ----- -.24* -.24* -.29* -.12 -.12 ----- .06 .06 ----- -.06 -.06 ----- -.06 ----- ----- .22* -.22* -.28 -.34* -.34* -.40*
Role Ambiguity-Rizzo, House & Lirtzman (1970)	Michaels, Cron, Dubinsky & Joachimsthaler (1988)	Path analysis. Regression coefficient (STD) of role ambiguity & significance for each		

		DV model: Organizational commitment (TRMD) Work alienation	-.27*** .24***	
Role Ambiguity-Rizzo, House & Lirtzman (1970)	Netemeyer, Johnston & Burton (1990)	Structural equation modeling. Regression coefficient (STD) of role ambiguity & significance for each DV model: Tension Job satisfaction Propensity to leave	 -.012 -.049 .070	
Role Ambiguity-Ford, Walker & Churchill (1975)	Churchill, Ford & Walker (1976)	Stepwise multiple regression analysis. Beta coefficient of role ambiguity & significance for each job satisfaction component (DV): Job Fellow workers Supervision Company policy Pay Promotion Customers	 -.188*** -.193*** NS -.157** -.159** NS -.378***	
Role Ambiguity-Ford, Walker & Churchill (1975)	Bagozzi (1978)	Stepwise multiple regression analysis. Beta coefficient of role ambiguity & significance for each DV model: Performance Job satisfaction Generalized self-esteem Specific self-esteem	Sample 1 NS NS -.11*** -.16***	Sample 2 NS NS -.08*** -.18***
Role Ambiguity-Ford, Walker & Churchill (1975)	Hafer & McCuen (1985)	Stepwise multiple regression analysis. Beta coefficient of role ambiguity & significance for each DV model: Performance Job satisfaction Generalized self-esteem Specific self-esteem	 -.052* -1.380* -.097* -.076*	
Role Ambiguity-Jones, James, Bruni, Hornic & Sells (1977)	Tyagi (1985)	Regression analysis. Regression coefficient of role ambiguity & significance for each DV model: Intrinsic motivation Extrinsic motivation Overall motivation	 NS NS NS	
Role Ambiguity-Chonko, Howell & Bellenger (1986)	Chonko, Howell & Bellenger (1986)	Regression analysis. Predictor variables- facets of role ambiguity		

		Regression coefficient of each role ambiguity facet & significance for the DV of congruence of performance evaluations: Family Job Company Supervisor Customer	.13 -.42** .19** .35** -.04

NPOS-not part of study	* p<.05	W/ with
NS-not significant	** p<.01	DV-dependent variable
STD-standardized	*** p<.001	TRMD-trimmed model

ROLE CONFLICT MEASURES-RELIABILITY

Scale Name & Originator(s)	Author(s) & Year-Journal	Sample Size & Type	Coefficient Alpha
Role Conflict-Rizzo, House & Lirtzman (1970)	Teas (1983)-JMR	116 salespeople	.88
Role Conflict-Modified version of Rizzo, House & Lirtzman's (1970)	Behrman & Perreault (1984)-JM	196 salespeople	.85
Role Conflict-Rizzo, House & Lirtzman (1970)	Dubinsky & Skinner (1984)-JR	116 retail salespeople	NR
Role Conflict-Rizzo, House & Lirtzman (1970)	Dubinsky & Hartley (1986)-JAMS	120 salespeople (insurance agents)	.78
Role Conflict-Rizzo, House & Lirtzman (1970)	Hampton, Dubinsky & Skinner (1985)-JAMS	116 retail salespeople	.78
Role Conflict-Rizzo, House & Lirtzman (1970)	Fry, Futrell, Parasuraman & Chmielewski (1986)-JMR	216 salesmen of a pharmaceutical company	.86
Role Conflict-Rizzo, House & Lirtzman (1970)	Michaels, Cron, Dubinsky & Joachimsthaler (1988)-JMR	215 salespeople	.85
Role Conflict-Rizzo, House & Lirtzman (1970)	Netemeyer, Johnston & Burton (1990)-JAP	183 salespeople	.78
Role Conflict-Ford, Walker & Churchill (1975)	Ford, Walker & Churchill (1975)-JBR	265 industrial salesmen from 10 firms in 7 different industries	.85
Role Conflict-Ford, Walker & Churchill (1975)	Walker, Churchill & Ford (1975)-JM	265 industrial salesmen from 10 firms in 7 different industries	NR
Role Conflict-Ford, Walker & Churchill (1975)	Churchill, Ford & Walker (1976)-JMR	265 industrial salesmen from 10 firms in 7 different countries	NR
Role Conflict-Modified version of Ford, Walker & Churchill's (1975)	Dubinsky & Mattson (1979)-JR	203 retail salespeople	.71
Role Conflict-(Job Related Tension Index); Kahn, Wolfe, Quinn, Snoek, & Rosenthal (1964)	Bagozzi (1978)-JMR	123 (sample 1) industrial salespeople assigned to territories 38 (sample 2) industrial salespeople assigned to accounts	.71 (sample 1) .75 (sample 2)
Role Conflict-(Job Related Tension Index); Kahn, Wolfe, Quinn, Snoek, & Rosenthal (1964)	Hafer & McCuen (1985)-JPSSM	336 insurance salespeople	.71
Role Conflict-Jones, James, Bruni, Hornic & Sells (1977)	Tyagi (1985)-JAMS	104 salespeople	.87
Role Conflict-Chonko, Howell & Bellenger (1986)	Chonko, Howell & Bellenger (1986)-JPSSM	121 industrial salespeople	Alpha per facet: Family .85 Job .85 Company .91 Supervisor .88 Customers .92

JAMS-Journal of the Academy of Marketing Science	NR-Not reported	* Spearman-Brown internal consistency reliability coefficient
JAP-Journal of Applied Psychology	JMR-Journal of Marketing Research	
JBR-Journal of Business Research	JPSSM-Journal of Personal Selling & Sales Management	
JM-Journal of Marketing	JR-Journal of Retailing	

Table A5
ROLE CONFLICT MEASURES-CONSTRUCT VALIDITY

Scale Name & Originator(s)	Author(s) & Year	Method & Assessment of Convergent & Discriminant Validity	Nomological Validity Findings (measure's correlation with other theoretically related variables)		
Role Conflict- Modified version of Rizzo, House & Lirtzman's (1970)	Behrman & Perreault (1984)	NPOS	W/Job performance W/Job satisfaction W/Role ambiguity W/Communications frequency W/Closeness of supervisor W/Influence over standards W/Innovativeness required W/Integrativeness required W/Hours worked W/Sales experience W/Need for achievement W/Locus of control	−.045 −.532* .517** .135 −.226** −.208** .161* .446** −.006 −.063 −.233** .350**	
Role Conflict- Rizzo, House & Lirtzman (1970)	Dubinsky & Skinner (1984)	NPOS	W/Variety W/Autonomy W/Feedback W/Task identity W/Overall job satisfaction W/Role ambiguity W/Work motivation W/Organizational commitment W/Performance	−.193 SLNR −.288 SLNR −.275 SLNR −.280 SLNR −.513 SLNR .401 SLNR −.305 SLNR −.385 SLNR −.120 SLNR	
Role Conflict- Rizzo, House & Lirtzman (1970)	Dubinsky & Hartley (1986)	NPOS	W/Self-monitoring W/Job involvement W/Overall job satisfaction W/Role conflict W/Work motivation W/Organizational commitment W/Performance	.003 .032 −.127* .270** .099 −.300** .127	
Role Conflict- Rizzo, House & Lirtzman (1970)	Hampton, Dubinsky & Skinner (1986)	NPOS	W/Initiation structure W/Consideration W/Role conflict W/Job performance W/Overall job satisfaction W/Satisfaction with supervisor W/Work motivation W/Organizational commitment	−.29* −.34* .40* .15 −.51* −.32* −.31* −.38*	
Role Conflict- Rizzo, House & Lirtzman (1970)	Fry, Futrell, Parasuraman & Chmielewski (1986)	NPOS	 W/Role ambiguity W/Job anxiety	Actual (SLNR) .61 .38	Repro- duced from trimmed model (SLNR) .22 .34

			W/Job satisfaction	−.48	−.28
			W/Fellow workers satisfaction	−.40	−.31
			W/Satisfaction with supervisor	−.51	−.35
			W/Pay satisfaction	−.42	−.33
			W/Promotion & developmental satisfaction	−.43	−.33
			W/Company policy & support satisfaction	−.61	−.40
			W/Customer satisfaction	−.36	−.09
Role Conflict–Rizzo, House & Lirtzman (1970)	Michaels, Cron, Dubinsky & Joachimsthaler (1988)	NPOS	W/Formalization W/Role conflict W/Organizational commitment W/Work alienation	−.25*** .63*** −.49*** .33***	
Role Conflict–Rizzo, House & Lirtzman (1970)	Netemeyer, Johnston & Burton (1990)	Structural equation modeling-the fit of a two factor (RA & RC) vs. unidimensional model, CDVD	W/Role ambiguity W/Tension W/Satisfaction W/Propensity to leave	.457** .435** −.550** .480**	
Role Conflict–Ford, Walker & Churchill (1975)	Ford, Walker & Churchill (1975)	MTMM, CDVD	W/Role ambiguity W/Job satisfaction Pattern of the MTMM matrix was checked for consistency & found to be inconsistent.	.075 SLNR −.236 SLNR	
Role Conflict–Ford, Walker & Churchill (1975)	Walker, Churchill & Ford (1975)	NPOS	W/Organization departments affecting activities W/Closeness with which supervised W/Influence in determining standards W/Innovativeness W/Frequency of contact W/Time in position	−.017 −.018 .006 .011 −.038 −.123*	
Role Conflict–Modified version of Ford, Walker & Churchill's (1975)	Dubinsky & Mattson (1979)	NPOS	W/Job satisfaction W/Job performance W/Organizational	−.15* −.21** −.12*	
Role Conflict–(Job Related Tension Index), Kahn, Wolfe, Quinn, Snoek & Rosenthal's (1964)	Bagozzi (1978)	NPOS	W/Performance W/Job satisfaction W/Generalized self-esteem W/Specific self-esteem W/Other directedness W/Verbal intelligence W/Role ambiguity W/Territory potential W/Workload	Sample 1 −.48*** −.56*** −.32*** −.34*** .26*** −.02 .44*** −.38*** −.27**	Sample 2 −.40*** −.50*** −.22** −.28*** .18** .04 .42*** −.28*** −.10
Role Conflict–(Job	Hafer & McCuen	NPOS	W/Generalized	−.38***	

Related Tension Index), Kahn, Wolfe, Quinn, Snoek & Rosenthal's (1964)	(1985)		self-esteem W/Job satisfaction W/Sales performance W/Task-specific self-esteem W/Other directedness W/Role ambiguity	-.27*** .02 -.07 .40*** .48***
Role Conflict-Jones, James, Bruni, Hornic & Sells (1977)	Tyagi (1985)	NPOS	W/Role ambiguity W/Role overload W/Subunit conflict	.01 .22*** .21***
Role Conflict-Chonko, Howell & Bellenger (1986)	Chonko, Howell & Bellenger (1986)	Factor Analysis, CDVD	W/Congruence of performance evaluations & facets of role conflict: Family Job Company Supervisor Customer	-.21** -.14** -.17** -.20* -.02

NPOS-not part of study	* p<.05
MTMM-multitrait-multimethod	** p<.01
CDVD-convergent & discriminant validity was demonstrated	*** p<.001
DVD-discriminant validity was demonstrated	SLNR-significance level not reported

Table A6
ROLE CONFLICT MEASURES-PREDICTIVE VALIDITY

Scale Name & Originator(s)	Author(s) & Year	Method of Assessing Predictive Validity & Findings	
Role Conflict-Rizzo, House & Lirtzman (1970)	Teas (1983)	Path analysis. Regression coefficient (STD) of role conflict & significance for the DV model of: Job satisfaction (full)	-.303***
Role Conflict-Modified version of Rizzo, House & Lirtzman's (1970)	Behrman & Perreault (1984)	Path analysis. Regression coefficient (STD) of role conflict & significance each DV model: Role ambiguity (TRMD) Job performance (full) Job satisfaction (TRMD)	.437** .189* -.297**
Role Conflict-Rizzo, House & Lirtzman (1970)	Dubinsky & Skinner (1984)	Path analysis. Regression coefficient (STD) of role conflict & significance for each DV model: Job satisfaction (TRMD) Work motivation (TRMD) Performance (TRMD)	-.399** ----- -----
Role Conflict-Rizzo, House & Lirtzman (1970)	Dubinsky & Hartley (1986)	Path analysis. Regression coefficient of role conflict & significance for each DV model: Overall job satisfaction (full) Work motivation (full) Job performance (TRMD)	NS NS .235**
Role Conflict-Rizzo, House & Lirtzman (1970)	Hampton, Dubinsky & Skinner (1986)	Path analysis. Regression coefficient (STD) of role conflict & significance for each DV model: Overall job satisfaction Job performance Satisfaction w/supervisor Work motivation Organizational commitment	-.41*** NS NS NS NS

Scale Name & Originator(s)	Author(s) & Year	Method of Assessing Predictive Validity & Findings	Model 1	Model 2
Role Conflict-Rizzo, House & Lirtzman (1970)	Fry, Futrell, Parasuraman & Chmielewski (1986)	Path analysis. Regression coefficient of role conflict & significance for each DV model: Job anxiety Job satisfaction Fellow workers satisfaction Satisfaction w/supervisor	.39* .39* .39* -.18* -.18* -.18* -.26* -.12* -.12*	.39* .39* .39* -.19* -.19* -.19* .16 -.16 -.14* -.14* -.12*

		Pay satisfaction	-.24* -.28*	-.25* -.25* -.28*
		Promotion & development satisfaction	-.21* -.28*	-.20* -.20* -.29*
		Company policy & support satisfaction	-.29* -.30*	-.30* -.30* -.30*
		Customer satisfaction (DV) model	-.12	-.15 -.15
		(Each row refers to the original, augmented & TRMD model for each corresponding DV model)		
Role Conflict-Rizzo, House & Lirtzman (1970)	Chonko, Howell & Bellenger (1986)	Path analysis. Regression coefficient (STD) of role conflict & significance for the: Organizational commitment (DV) TRMD model Work alienation (DV) full model	-.31*** NS	
Role Conflict-Rizzo, House & Lirtzman (1970)	Netemeyer, Johnston & Burton (1990)	Structural equation modeling. Regression coefficient (STD) of role conflict & significance for: Tension (DV) Job satisfaction Propensity to leave	.529** -.629** .067	
Role Ambiguity-Ford, Walker & Churchill (1975)	Churchill, Ford & Walker (1976)	Stepwise multiple regression. Beta coefficient of role conflict & significance for each job satisfaction component (DV): Job Fellow workers Supervisor Company policies Pay Promotion Customers	NS NS -.116* -.322*** NS -.281*** -.111*	
Role Conflict-(Job Related Tension Index); Kahn, Wolfe, Quinn, Snoek & Rosenthal's (1964)	Bagozzi (1978)	Stepwise multiple regression analysis. Beta coefficient of role conflict & significance for each DV model: Performance Job satisfaction Generalized self-esteem Specific self-esteem	Sample 1 -.25*** -.45*** NS NS	Sample 2 -.23*** -.46*** NS NS
Role Conflict-(Job Related Tension Index); Kahn, Wolfe, Quinn, Snoek & Rosenthal's (1964)	Hafer & McCuen (1985)	Stepwise multiple regression analysis. Beta coefficient of role conflict & significance for each DV model: Performance Job satisfaction Generalized self-esteem Specific self-esteem	.08* -.159* -.213* -.054*	
Role Conflict-Jones, James, Bruni, Hornic &	Tyagi (1985)	Regression analysis.		

Sells (1977)		Regression coefficient of role conflict & significance for each DV model:	
		Intrinsic motivation	-.36**
		Extrinsic motivation	-.28**
		Overall motivation	-.34**
Role Conflict-Chonko, Howell & Bellenger (1986)		Regression analysis. Regression coefficient of each role conflict facet & significance for the DV of congruence of performance evaluations:	
		Family	-.15
		Job	-.02
		Company	-.05
		Supervisor	-.13
		Customer	-.07

NPOS-not part of study	* p<.05	W/with
NS-not significant	** p<.01	DV-dependent variable
STD-standardized	*** p<.001	TRMD-trimmed model