An Empirical Study on the Structural Relationship among Gender Discrimination, Organization Commitment and Organizational Citizenship Behavior in the Korean Shipping Firms

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Abstract : *The objective of this study is to empirically investigate the effect of gender discrimination to female workers in Korean shipping firms on the their organization commitment and organizational citizenship behavior. In carrying out the objective of this study, two hypotheses about the structural relationship among gender discrimination, organization commitment and organizational citizenship behaviors in the Korean shipping firms are established after reviewing the related studies.*

Survey questionnaires are distributed and analyzed to test the reliability and validity of the response. Also, a structural equation model is established and the model is analyzed by AMOS.

In conclusion, there are a negative effect of gender discrimination on female workers' organizational commitment and a positive effect of their commitment on OCB.

Through this paper, the comprehensive understanding of the structural relationship among gender discrimination, organization commitment and organizational citizenship behavior would be promoted.

Key words : *Gender discrimination, Organization commitment, Organizational citizenship behavior, Female workers, and Korean shipping firms*

1. Introduction

Traditionally, it has been considered that female workers' employment is not desirable in the shipping industry. Due to this unreasonableness, there are many problems about their employment status and gender discrimination. In particular, female workers' employment is very limited in the Korean shipping industry when comparing with another industry. In 2004, the share of female workers' employment in the total industry is about 41% while that of the shipping industry is only about 10%. Furthermore, the share of the female mangers in most shipping firms does not exceed above 10% and also gender discrimination in the course of recruiting and selection, compensation and training and development often happens. The research on the role of a female worker in the shipping firms, nevertheless, is very few. And specially, there is few empirical study on the effect of female workers' organizational commitment related to gender discrimination on organizational citizenship behavior (OCB). However, recently, research on OCB have been increasing continuously and the research on the effect of job satisfaction and organizational commitment upon OCB is urgently needed.

Organizational citizenship behaviors are defined as work-related behaviors that are discretionary, not related to the formal organizational reward system, and, in the aggregate, promotes the effective functioning of the organization. In the past ten to fifteen years these types of behaviors have been gaining a lot of attention. The behaviors include helping employees with their work when they have been absent, helping orient new employees into their department, assisting the supervisor with their duties, as well as coming to work early or staying late. The assumption is if employees participate in these behaviors, it will make the workplace a more effective, well-oiled machine. While some might think that these gestures are simple random acts of kindness, they may actually be making a tremendous impact in the organization. Moorman (1991) stated that, "organizational citizenship behaviors should be considered an important part of job performance because they are part of the spontaneous and innovative behaviors, which are instrumental for effective organizations."

The aim of this empirical research is to analyze the effect of female workers' organizational commitment related to gender discrimination. Therefore, this paper will represent the result of empirical analysis related to the

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female workers' employment state and gender discrimination and thus help shipping firms to control female workers effectively and raise competitive power of woman resources.

2. Theoretical Background

2.1 Gender Discrimination in Employment

Gender (Sex) discrimination can be 'direct', or 'indirect'. Direct gender discrimination would be, for example, if anyone is refused to job employment on the ground that the job traditionally is regarded as being 'a man's job' or as being 'a woman's job'.

Indirect gender discrimination is by way of a requirement which without reasonable justification can not be or can less be met by the other gender. For example if a job advertisement says that the position advertised persons of either gender could apply but unjustifiably states that hand-bags or purses is not allowed to work or must wear perfume in England under European Union Law's definitions, it is held that it is unlawful discrimination that in government employment the age limit for appointment to executive officer grade is 28 since many women in their 20s plan or has babies to look after.

The Equal Opportunities Commission must also to provide information and assistance including legal representation subject to meeting specified criteria, to persons who wish to complain to a county court, or in the case of trainees or employees to an employment tribunal.

Gender discrimination laws may vary in detail among countries that have such legislation, and in the European Union they are more or less uniform in the case of allegations of discrimination in education in England (whether one does or not settle through the Advisory Conciliation and Arbitration Service -ACAS) with a requirement within a specified time before taking legal action to inform the secretary of state for education (Campbell et al., 1997).

2.2 Organizational Commitment

Organizational Commitment is one of the most prominent work attitudes examined in the work and organizational literature. This construct also received much attention within the more specific work-family literature. Researchers have often included both constructs in their examination of the relationships between work-family issues and work outcomes.

Generally, it is stated that organizational commitment is

"a psychological state that a) characterizes the employee's relationships with the organization, and b) has implications for the decision to continue membership in the organization". Other researchers use similar definitions that refer to an employee's attachment, goal congruency, identification, loyalty and allegiance to their organization.

Researchers generally agree there are three "foci" used to classify types of organizational commitment. The three types of commitment are affective, continuous, and normative commitment. Affective commitment refers to employees' perceptions of their emotional attachment to or identification with their organization. Continuance commitment refers to employees' perceptions of the costs associated with leaving the organization. Finally, normative commitment refers to employees' perceptions of their obligation to their organization. For instance, if an organization is loyal to the employee or has supported his/her educational efforts, the employee may report higher degrees of normative commitment. This three-pronged classification allows for identification of the underlying basis for each type of commitment and researchers have clarified the unique antecedents and outcomes related to each type. Like job satisfaction, reliable measures of the three types of commitment have also been developed and validated.

2.3 Organizational Citizenship Behavior

Over the last years, starting in 1983(Smith et al.,, 1983), there has been extensive research on the topic of organizational citizenship behavior(OCB). Generally, OCB is defined as "those organizationally beneficial behaviors and gestures that can neither be enforced on the basis of formal role obligations nor elicited by contractual guarantee of recompense". According to Moynihan et. al(2002), organizational commitment is theorized to have a direct effect on performance through the shaping of both employee in-role and extra-role behavior. When organizational commitment is high, it means that an employee's values are aligned with the organization and that she or he wants to do what is best for the organization. In a service driven organization, in-role value alignment can be expected to be manifested as employee behavior oriented toward fulfilling customer needs. Organizational commitment has further been shown to have a consistent relationship with organizational citizenship behavior (OCB), or behavior that is above and beyond the call of duty (Smith et al., 1983). OCB has been previously conceived of as extra-role behaviors involving helping fellow co-workers. These types of behaviors include helping others, spreading goodwill, and

making constructive suggestions. However, extra-role behaviors may also likely be helpful behavior directed at customers. Service workers must manage relationships both with coworkers as well as those with customers. The "norm of reciprocity" elicited by high performance HR practices may well motivate employees to feel positively about the organization and want to do what is good for the organization by eliciting customer focused helping behavior . Customer focused discretionary behaviors can include the helpful management of product and service delivery factors to customers, such as manipulating the timing and presentation of products and services, imparting a helpful and friendly demeanor with customers, and transferring information between the customer and the organization .

3. Research Model and Hypotheses

The focal variables in this study are gender discrimination, organization commitment and OCB. Fig. 1 represents the research model, which reflects the structural relationship or linkage among gender discrimination, organization commitment and OCB.
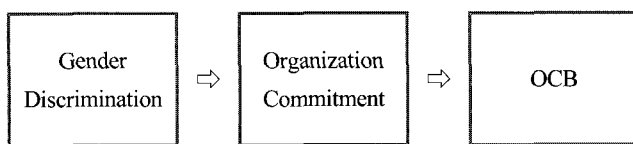
| Gender Discrimination | ⇨ | Organization Commitment | ⇨ | OCB |

Fig. 1 The Model

Two hypotheses have been developed after reviewing a group of prior studies.

Hypothesis 1 : The smaller the degree of gender discrimination is, the higher female workers' organization commitment is.

Hypothesis 2 : The higher female workers' organization commitment is, the higher their organizational citizenship behavior is.

To measure gender discrimination, organization commitment and OCB, we selected items from the categories by many prior studies of Organization Behavior and Psychology. The questionnaire is designed using a seven point Likert scale ranging from absolutely disagree to absolutely agree. The gender discrimination in the Korean shipping firms is measured by the factors of recruiting, training and development, evaluation and compensation which are major function of the human resources

management. The degree of gender discrimination is measured with Likert scale to 6 items. In case of organization commitment, we selected items which can be applied to employers in the shipping industry considering OCQ developed by Mowday, Steers and Porter(1979). And the degree of organizational commitment is measured with Likert scale to 3 items concerning task commitment, attachment or affection to organization, and pride or self-conceit as an employee. Futhermore, we measured OCB's components which is generally accepted by most researchers using several items representing five traits or dimensions of citizenship behavior. Those dimensions are altruism, conscientiousness, courtesy and civic virtue, each consisting of 4-5 items.

4. Empirical Analysis

4.1 Samples

A total of 300 questionnaires were sent to a random sample of female employees (50% of them are female) working in 100 firms (shipping companies, maritime traffic mediation companies, forwarding companies, and agents etc.) in Korea from December, 2004 to January, 2005. I obtained a total of 114 responses(response rate 38%). Some questionnaires were excluded from the analysis due to missing data. Thus, the sample used for the analysis includes 105 questionnaires.

4.2 Reliability and Validity

For reliability of variables, Cronbach's alpha measures how well a set of items (or variables) measures a single unidimensional latent construct. Technically speaking, Cronbach's alpha is not a statistical test – it is a coefficient of reliability (or consistency). Cronbach's alpha can be written as a function of the number of test items and the average inter-correlation among the items. Here, the reliability in this paper is shown to be high using all items because numbers of alpha are high.

Factor analysis is used to uncover the latent structure (dimensions) of a set of variables. It reduces attribute space from a larger number of variables to a smaller number of factors and as such is a "non-dependent" procedure (that is, it does not assume a dependent variable is specified). Factor analysis could be used for the purpose of validating a scale or index by demonstrating that its constituent items load on the same factor, and to drop proposed scale items which cross-load on more than one factor.

In this factor analysis, we can see that the rotation sums

of squared loadings of factors are more than 1 and these components explain the high percentage of total variance. Therefore, these factors are able to be distinguished, and the conceptual validity is shown because the most of variables' communalities are high.

4.2 Analysis Method and Results

Structural equation modeling (SEM) grows out of and serves purposes similar to multiple regression, but in a more powerful way which takes into account the modeling of interactions, non-linearities, correlated independents, measurement error, correlated error terms, multiple latent independents each measured by multiple indicators, and one or more latent dependents also each with multiple indicators. SEM may be used as a more powerful alternative to multiple regression, path analysis, factor analysis, time series analysis, and analysis of covariance. That is, these procedures may be seen as special cases of SEM, or, to put it another way, SEM is an extension of the general linear model (GLM) of which multiple regression is a part.

Advantages of SEM compared to multiple regression include more flexible assumptions (particularly allowing interpretation even in the face of multicollinearity), use of confirmatory factor analysis to reduce measurement error by having multiple indicators per latent variable, the attraction of SEM's graphical modeling interface, the desirability of testing models overall rather than coefficients individually, the ability to test models with multiple dependents, the ability to model mediating variables, the ability to model error terms, the ability to test coefficients across multiple between-subjects groups, and ability to handle difficult data (time series with autocorrelated error, non-normal data, incomplete data).

Indicators are observed variables, sometimes called manifest variables or reference variables, such as items in a survey instrument. Four or more is recommended, three is acceptable and common practice, two is problematic, and with one measurement, error cannot be modeled. Models using only two indicators per latent variable are more likely to be underidentified and/or fail to converge, and error estimates may be unreliable.

Latent variables are the unobserved variables or constructs or factors which are measured by their respective indicators. Latent variables include both independent, mediating, and dependent variables. "Exogenous" variables are independents with no prior causal variable (though they may be correlated with other exogenous variables, depicted by a double-headed arrow --

note two latent variables can be connected by a double-headed arrow (correlation) or a single-headed arrow (causation) but not both. "Endogenous" variables are mediating variables (variables which are both effects of other exogenous or mediating variables, and are causes of other mediating and dependent variables), and pure dependent variables. Variables in a model may be "upstream" or "downstream" depending on whether they are being considered as causes or effects respectively. The representation of latent variables based on their relation to observed indicator variables is one of the defining characteristics of SEM. (See Table 1).

Table 1 Indicators and latent variables

	latent variables	indicators
Exogenous	$\xi 1$: Gender Discrimination	$x1$: job finding discrimination $x2$: job opportunity discrimination $x3$: salary discrimination $x4$: promotion discrimination $x5$: evaluation discrimination $x6$: education&training discrimination
Endogenous	$\eta 1$: Organization Commitment	$y1$: task commitment $y2$: pride to organization $y3$: affection and interest
	$\eta 2$: OCB	$z1$: altruism $z2$: conscientiousness $z3$: courtesy $z4$: civic virtue

The measurement model is the part (possibly all) of a SEM model which deals with the latent variables and their indicators (See Fig. 2).
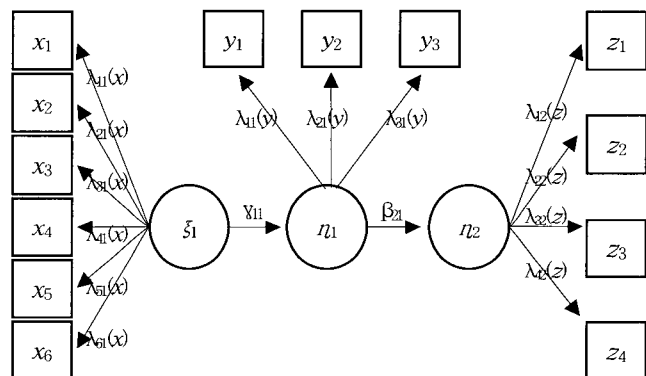

Fig. 2 Path Diagram

Structural or Path Coefficients are the effect sizes calculated by the model estimation program. Often these values are displayed above their respective arrows on the arrow diagram specifying a model. In AMOS, these are

labeled "regression weights," which is what they are, except that in the structural equation there will be no intercept term (See Table 2).

Table 2 Path Coefficients of SEM

Path Coefficients	Regression Weights				Standardized Regression Weights
	Estimate	S.E.	C.R.	P	
$\gamma 11$	-0.063	0.180	-2.351	0.025	-0.040
$\beta 21$	0.334	0.109	3.065	0.002	0.399
$\lambda 11(x)$	0.900	0.190	4.736	0.000	0.545
$\lambda 21(x)$	1.059	0.191	5.547	0.000	0.660
$\lambda 31(x)$	1.118	0.195	5.744	0.000	0.690
$\lambda 41(x)$	1.200	0.192	6.257	0.000	0.780
$\lambda 51(x)$	1.000				0.646
$\lambda 61(x)$	1.332	0.227	5.857	0.000	0.708
$\lambda 11(y)$	1.000				0.629
$\lambda 21(y)$	1.309	0.197	6.654	0.000	0.840
$\lambda 31(y)$	1.469	0.223	6.603	0.000	0.906
$\lambda 12(z)$	1.000				0.694
$\lambda 22(z)$	1.028	0.183	5.605	0.000	0.707
$\lambda 32(z)$	0.830	0.162	5.115	0.000	0.619
$\lambda 42(z)$	1.130	0.205	5.520	0.000	0.689

When researchers speak of structural or path coefficients in SEM, they normally mean standardized ones. Standardized structural coefficient estimates are based on standardized data, including correlation matrixes. Standardized estimates are used, for instance, when comparing direct effects on a given endogenous variable in a single-group study. That is, as in OLS regression, the standardized weights are used to compare the relative importance of the independent variables. The interpretation is similar to regression: if a standardized structural coefficient is 2.0, then the latent dependent will increase by 2.0 standard units for each unit increase in the latent independent. In AMOS, the standardized structural coefficients are labeled standardized regression weights.

Based on the result of this analysis, hypothesis 1 is not rejected because the estimate of standardized regression weights of the path coefficient $\gamma 11$ is negative and the significant probability is 0.025. And hypothesis 2 is also not rejected because the estimate of standardized regression weights of the path coefficient $\beta 21$ is positive and the significant probability is 0.002.

Goodness of fit tests determine if the model being tested should be accepted or rejected. These overall fit tests do not establish that particular paths within the model are significant. If the model is accepted, the researcher will then go on to interpret the path coefficients in the model ("significant" path coefficients in poor fit models are not meaningful). AMOS prints many different goodness-of-fit

measures, the choice of which is a matter of dispute among methodologists. Most of researchers recommend use of at least three fit tests, one from each of the first three categories below, so as to reflect diverse criteria. SEM statistics recommends at least four tests, such as chi-square; GFI, NFI, or CFI; NNFI; and SRMR. Another list of which-to-publish lists chi-square, AGFI, TLI, and RMSEA. There is wide disagreement on just which fit indexes to report, but one should avoid the shotgun approach of reporting all of them, which seems to imply the researcher is on a fishing expedition.

Model chi-square, also called discrepancy, is the most common fit test, printed by all computer programs. The chi-square value should not be significant if there is a good model fit, while a significant chi-square indicates lack of satisfactory model fit. That is, chi-square is a "badness of fit" measure in that a finding of significance means the given model's covariance structure is significantly different from the observed covariance matrix. Generally, if model chi-square < .05, the researcher's model is rejected. But, there are three ways, in which the chi-square test may be misleading. Because of these reasons, many researchers who use SEM believe that with a reasonable sample size (ex., > 200) and good approximate fit as indicated by other fit tests (ex., NNFI, CFI, RMSEA, and others), the significance of the chi-square test may be discounted and that a significant chi-square is not a reason by itself to modify the model (See Table 3).

Table 3 Fit Measures

Fit Measure	Default model	Saturated	Independence
Discrepancy	99.133	0.000	544.354
Degrees of freedom	63	0	78
P	0.002		0.000
Number of parameters	28	91	13
Discrepancy / df	1.574		6.979
RMR	0.072	0.000	0.259
GFI	0.879	1.000	0.489
Adjusted GFI	0.826		0.404
Parsimony-adjusted GFI	0.609		0.419
Normed fit index	0.818	1.000	0.000
Relative fit index	0.775		0.000
Incremental fit index	0.925	1.000	0.000
Tucker-Lewis index	0.904		0.000
Comparative fit index	0.923	1.000	0.000

In Table 3, RMR 0.072 is close to significance 0.05 and GFI 0.879 is also close to significance 0.90. Therefore, overall fit measures(for example, IFI, TLI and CFI are more than .90) are considered as "acceptable" in SEM.

5. Conclusion

The purpose of this study is to verify the effect of female workers' organizational commitment related to gender discrimination on OCB, considering the their importance and speciality in Korean shipping firms. Therefore, this study carried out an empirical analysis related to female workers' employment state and gender discrimination and it thus help shipping firms to manage female workers efficiently and enhance competitive power of human resources in the shipping industry.

For this empirical study, we firstly measured gender discrimination, organizational commitment, and OCB with Likert scale. Specially, OCB is measured with 4 dimensions which are altruism, conscientiousness, courtesy and civic virtue. And, we verified two hypotheses established from this study's model through SEM. In conclusion, we are able to examine, by and large, a negative effect of gender discrimination on female workers' organizational commit- ment and a positive effect their commitment on OCB because two hypotheses are accepted and not rejected.

This finding is in line with previous results and make a significant contribution to an approach for the utilization of female workers and dissolution of gender discrimination in shipping industry where it has been considered that their employment is not desirable traditionally. Although the result of hypotheses test may be a natural outcome, this finding can, nevertheless, be extremely valuable.

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