Research Paper

EXPORTERS, IMPORTERS AND LOGISTICS INTERMEDIARY'S OPINION TOWARDS SUPPLY CHAIN ORIENTATION OF DRY PORTS

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ABSTRACT

KEYWORDS:
dry ports, exporters, importers and logistics, cargo and ship

The exporter's importers and logistics intermediaries in Tirupur city use various ports for shipping their cargo. When they were not able to find suitable transport facilities and warehouse facilities, they prefer Inland container deport or dry ports to stock their cargo and ship the goods to proper destination. For the purpose of the study 200 respondents were taken in to account. The opinion of the exporters, importers and logistics intermediaries were analysed through PLS software. For the purpose of the analysis 17 statements were included under the dimensions of Organisational relationship, Top management support, and Financial and Human resources.

INTRODUCTION

The exporter's importers and logistics intermediaries in Tirupur city use various ports for shipping their cargo. When they were not able to find suitable transport facilities and warehouse facilities, they prefer Inland container deport or dry ports to stock their cargo and ship the goods to proper destination. For the purpose of the study 200 respondents were taken in to account. The opinion of the exporters, importers and logistics intermediaries were analysed through PLS software. For the purpose of the analysis 17 statements were included under the dimensions of Organisational relationship, Top management support, and Financial and Human resources.

PLS ANALYSIS

Measurement Model Results:

The first step in order to present the results of PLS analysis is to assess the reliability and validity of the measurement items or indicators, as it is important to determine that the measures represent the constructs. This section provides an evaluation on how accurate the measures are and also their convergent and discriminant validities.

Reliability:

All constructs consist of more than one item. Cronbach's alpha was used to assess the internal consistency, since it provides an estimate for the reliability based on the indicator intercorrelations (Henseler et al, 2009). Alpha co-efficients range from 0 to 1 where higher co-efficients indicate higher reliability. The accepted value of cronbach's alpha is 0.70, whereas a value below 0.6 indicates a lack of reliability (Nunnally et.al, 1967).

Table 1 - Reliability Results – Composite Reliability and Cronbach's Alpha

Construct	Number of Indicators	Composite reliability	Cronbach's Alpha
Organisational Relationships	7	0.934	0.926
Top management support	5	0.844	0.722
Financial and Human Resources	5	0.813	0.856

Cronbach's alpha tends to provide an underestimation of the internal consistency (Henseler et al., 2009), therefore it is also appropriate to apply the composite reliability measure. The composite reliability takes into account that indicators have different loadings, and can be interpreted n the same way as cronbach's alpha. The accepted value for composite reliability is 0.70 or higher (Henseler et al.,2009). The composite reliability values which were shown in the above table, the values for all constructs are above the cut off level. The averaged composite reliability for all constructs is 0.90 showing high reliability. Therefore, it can be said that the measurement instrument of this study is reliable.

Validity:

For the assessment of validity, convergent and discriminant validities are used. Convergent validity means that a set of indicators represents one and the same underlying construct, which can be analyzed through their unidimensionality.

Discriminant validity is a complementary concept, meaning that each indicator should not have a stronger connection with constructs other than the one it attempts to reflect.

Table 2- Validity - Results

Construct	AVE
Organisational Relationships	0.561
Top management support	0.643
Financial and Human Resources	0.792

Fornell and Larcker (1981) suggest using the average variance extracted (AVE) as a criterion of convergent validity. AVE measures the amount of variance that a latent variable captures from its indicators relative to the amount due to measurement error. (Chin, 2010). An AVE value of at least 0.5 indicates sufficient convergent validity, meaning that a latent variable is able to explain more than half of the variance of its indicators on average (Henseler et al., 2009). There are two measures of discriminant validity: The Fornell-Larcker criterion and the cross loadings (Henseler et al., 2009). The Fornell-Larcker criterion indicates that a latent variable shares more variance with its assigned indicators than with any other latent variable, in other words, the AVE of each latent variable should be greater than the latent variable's highest squared correlation with any other latent variable. The second measure of discriminant validity takes into account the loading of each indicator, where it is expected to be greater than all of its cross-loadings (Henseler et al., 2009). Although the Fornell-Larcker criterion assesses discriminant validity on the construct level, the cross loadings allow this evaluation on the indicator level (Chin, 2010).

Structural Model Results

Having tested for reliability and validity of the measures, the next step is to focus on the structural model. PLS analysis implies great emphasis on variance explained as well as establishing the significance of all path estimates. PLS algorithm was executed on Smart PLS using 300 as maximum number of iterations, path weighting scheme was selected since Haenlein and Kaplan (2004) suggest that the choice between the different weighting schemes for determining inner model proxies has only a minor impact on the final results.

Variance Explanation

The explanation power of the structural model is assessed by the R^2 values of the endogenous constructs, these values represent the amount of variance in the construct that is explained by the model (Tabachnick and Fidell, 2007). Chin (1998) describes R^2 values of 0.67, 0.33, and 0.19 in PLS path models as substantial, moderate, and weak, respectively. Below table summarizes the R^2 value of perceived norms. In other words, the model is able to explain 91 percent of the variance in perceived norms.

Table 3: Variance explanation Results

Construct	R2
Organizational Relationship	0.462
Top Management Support	0.709

Path Analysis

The path coefficients of the PLS structural model provide a validation of the theoretically assumed relationships between constructs (Adams et al., 2007). The individual path coefficients measure the magnitude of the causal relation between constructs, they can be interpreted as standardized beta coefficients of ordinary least squares regressions (Henseler et al., 2009). The results of the structural path analysis are depicted in the above diagram – smart PLS Output – path analysis, in which PLS path coefficients and indicators loadings are shown. All path coefficients are positive and this indicates that the causal relation is positive.

Effect Size

Henseler et al. (2009) recommend that all indirect effects of a particular latent variable on another variable should be
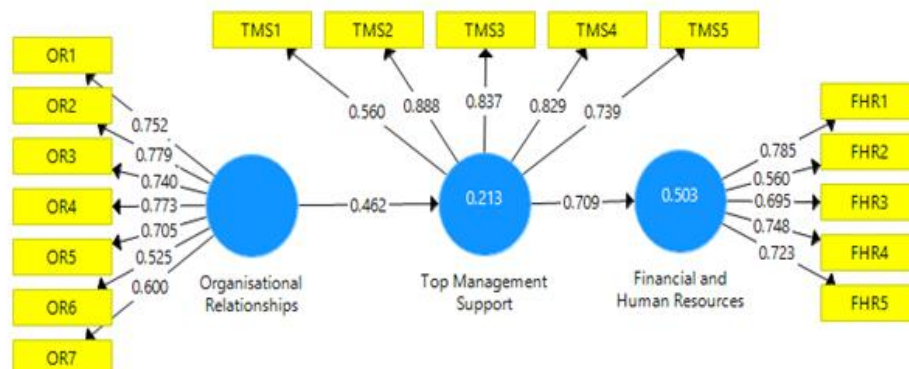
evaluated, considering that the standardized inner path model coefficients decline with an increased number of indirect relationships. In order to evaluate the effect size in the path model, Cohen's (1988) f^2 was calculated as the increase in R^2 relative to the proportion of variance of the endogenous latent variable that remains unexplained (Henseler et al., 2009):

$$f^2 = \frac{(R^2 \text{ included} - R^2 \text{ excluded})}{(1 - R^2 \text{ included})}$$

According to Cohen (1988) values of 0.02, 0.15, and 0.35 can be interpreted as small, medium, and large effects at the structural level, respectively. The f^2 values were calculated manually for each latent variable. The effects of various dimensions framed under supply chain orientation of Dry ports represent small effect.

Indicators	Statements
OR1	Our goals and objectives are consistent with those of our supply chain members
OR2	Our CEO and the CEOs of our supply chain members have similar operating philosophies
OR3	We are willing to make operative changes with our supply chain members
OR4	We believe our supply chain members must work together to be successful
OR5	We believe that our supply chain members have trust on us
OR6	We keep promises with our supply chain members
OR7	We deal with supply chain members honesty
TMS1	Top management repeatedly tell their employees that our continued success depends on its adapting to new logistics environment such as supply chain integration
TMS2	Top managers repeatedly tell their employees that building, maintaining and enhancing long-term relationships with supply chain members are critical to our business success
TMS3	Top managers repeatedly tell their employees that sharing valuable strategic/tactical information with supply chain members is critical to our business success
TMS4	Top managers repeatedly tell employees that sharing objectives and philosophy is critical to our business's success
TMS5	Top management offers various educational opportunities about supply chain management and integration
FHR1	We have the financial resources to invest for supply chain integration whenever necessary
FHR2	We have a high priority on investment for supply chain integration
FHR3	Our workforce have a good understanding of new logistics environment
FHR4	Our workforce have the capabilities to develop new integrated logistics services(e g integrated logistics services)
FHR5	We constantly offer education opportunities about supply chain integration for enhancing the capabilities of workforce

Tests of PLS paths with Boot strap :

Hypotheses	Path Co-efficients	T- statistics
H1 : Organizational Relationships -> Top Management support → Financial and Human Resources	0.462	83.360**
Top Management support → Financial and Human Resources	0.709	101.784**
Note: one-tail * Significant at .05 level ** Significant at .01 level		

The results support the proposed relationships between various dimensions framed under supply chain orientation of Dry ports (H1) (t = 83.360, 101.784, p < 0.01). The results support the proposed relationships of H1.

CONCLUSION

It was understood that the organisational relationship factors have strong relationship with the top management and financial and human resources.

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