Identification of a Leadership Competency Model

for use in the

Development, Recruitment & Retention of Intermodal Transportation

Workers

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Abstract

The purpose of this research was to determine the competencies that predict highly effective performance in intermodal transportation managers and that will pave the way for development of a core competency model that can be used to recruit, train, and retain effective transportation leaders. Three separate samples were included in this four-phase study that followed leading methodology in competency research (Spencer & Spencer, 1993): 1) an expert panel of 11 human resource managers in transportation, 2) 62 mid-level managers (41 males and 21 females) and 3) 228 manager peers/colleagues. The managers and their peers/colleagues completed the *Intermodal Transportation Managerial Competency Questionnaire* (ITMCQ). Results from the expert panel indicated 9 core competency areas that are thought to be essential for training effective leaders in intermodal transportation. Quantitative results yielded from the 360 degree questionnaire indicated several essential areas of leadership acumen in transportation including high personal standards, achievement orientation, and ability to build trust. Combining this data allowed the researchers to collapse all categories into three general competency clusters: Self-Effectiveness, Interpersonal Effectiveness, and Technical Industry-Specific Effectiveness.

Identification of a Leadership Competency Model for use in the Development, Recruitment & Retention of Intermodal Transportation Workers

As the demand for transportation continues to increase dramatically amidst the current population boom, an estimated 40 to 50 percent of the existing local, state, and federal transportation workforce near retirement (Martin, 2001). These baby boomers lead at all levels of the transportation industry and little succession planning has been done to plan for the future shortage of competent managers (CTC & Associates LLC). Sen. George Voinovich, R-Ohio recently estimated that by 2010 approximately 600, 000 employees will retire (U.S. Dept. of Transportation). In order to meet the demands of the future shortages expected of competent leaders at the executive level, the transportation industry must adapt their training, recruiting, and managing practices to not only stabilize but improve performance. Many companies in various industries have developed core competency models to steer managerial improvement programs (Boyatzis, 2006; Calhoun et al., 2008). Establishment of an empirically derived competency model specifically focusing on leadership acumen in intermodal transportation would greatly increase the likelihood of a smooth transition from the current aging management body. Thus, the purpose of this study is to identify a competency model for use in the intermodal transportation industry to effectively recruit, train, and retain new leaders. More specifically, we were interested in examining which competencies differentiate highly effective leaders from typical leaders in the field.

Competencies are distinct sets of behaviors applied to reliably complete a task that is directly linked to a critical outcome (Ricciardi, 2005). Spencer and Spencer (1993) suggested that, "a competency is an underlying characteristic of an individual that is causally related to criterion-referenced effective and/or superior performance in a job or situation" (p.9). A competency model has been defined as a collection of competencies associated with successful performance (Garman & Johnson, 2006). It has long been thought that competencies can be used for a variety of performance improvement purposes as they provide specific behavioral sets that can be defined and communicated (Spencer & Spencer, 1993). Establishment of competency models have been linked to increased effectiveness in training and hiring procedures in a variety of

industries (Ricciardi, 2005; Wang, 2003). Several empirically-based methods have been presented to identify competency models for specific industries (Ricciardi, 2005; Wang, 2003).

Methodology

The Intermodal Transportation Leadership Competency Model (ITLCM) was developed following the rigorous methodology set forth for competency research and modeling methods in the field (Boyatzis, Cowen, & Kolb, 1995; Spencer & Spencer, 1993). The model was developed in four-phases:

- Phase 1:The criteria that distinguished superior intermodal leaders from typical leaders were identified. For this phase, intermodal transportation managers' peer ratings of importance of various competencies (360 degree survey) were analyzed in tandem with qualitative responses from an expert panel composed of human resource managers to define effective performance criteria.

- Phase 2: The job effectiveness criteria established in phase 1 of this study were then used to identify a clear group of effective transportation leaders and a comparison group of average performers. This was established from a composite score of manager and peer performance ratings from the ITMCQ. The sample was divided in half based on their total performance score.

- Phase 3: Data was collected using expert panels in human resources in intermodal transportation and the ITMCQ. Thus, there were two types of data: 1) qualitative data from an expert panel of 11 human resource managers who were asked to help brain storm the essential factors of leadership performance training needs in transportation, and 2) quantitative data from 360 degree feedback from both 62 mid-level managers (41 males and 21 females) and 228 of the managers' peers/colleagues. The managers were asked to rate their performance while their peers/colleagues were asked to rate the same items based on their manager's performance and on the importance of each competency.

- Phase 4: The data was analyzed via basic descriptive statistics, qualitative analytic techniques such as content analysis, and then the superior and average groups were compared on various competencies using independent sample t-tests.

The *Intermodal Transportation Managerial Competency Questionnaire* (ITMCQ), which assesses both performance and importance of various leadership competencies in transportation, is a 360 degree assessment tool tailored for use specifically in this project. The ITMCQ is composed of two separate parts: a 33-item section for managers to rate their performance on a six-point Likert-type rating scale (1=Very Strongly Disagree, 6=Very Strongly Agree), and a second 68-item section that is designed for peers and colleagues associated with the managers to rate managers on the same items once for performance and a second time for importance (1=Very Important, 2=Important, 3=Not Important).

Results

Results from the expert panel of HR managers in intermodal transportation revealed 9 core competency training areas for transportation mid-level managers. 360 degree feedback data yielded the following as the most important skills or competencies of managers: demonstrates functional/technical expertise, confronts conflict situations in an honest and direct manner, places the needs of the business ahead of personal agendas, collaborates effectively with others, and is a role model who champions company values. Several core variables that appeared to separate the superior transportation managers from the average performers were also detected. Independent sample t-tests were conducted to test the hypotheses that superior performers would perform better on key leadership variables as opposed to average performers. The greatest statistical significance of mean differences between superior and average leaders came in the following areas: Collaborates, $t(60) = 5.88$, $p < .01$, Delivers Results, $t(60) = 7.05$, $p < .01$, and Demonstrates Technical Expertise, $t(60) = 6.95$, $p < .01$. Please also see the graph to the left for mean differences on some of the most important attributes. Putting this data together and collapsing the various areas yielded a three cluster model: Interpersonal Effectiveness, Self-Effectiveness, and Technical/Industry-Specific Effectiveness.
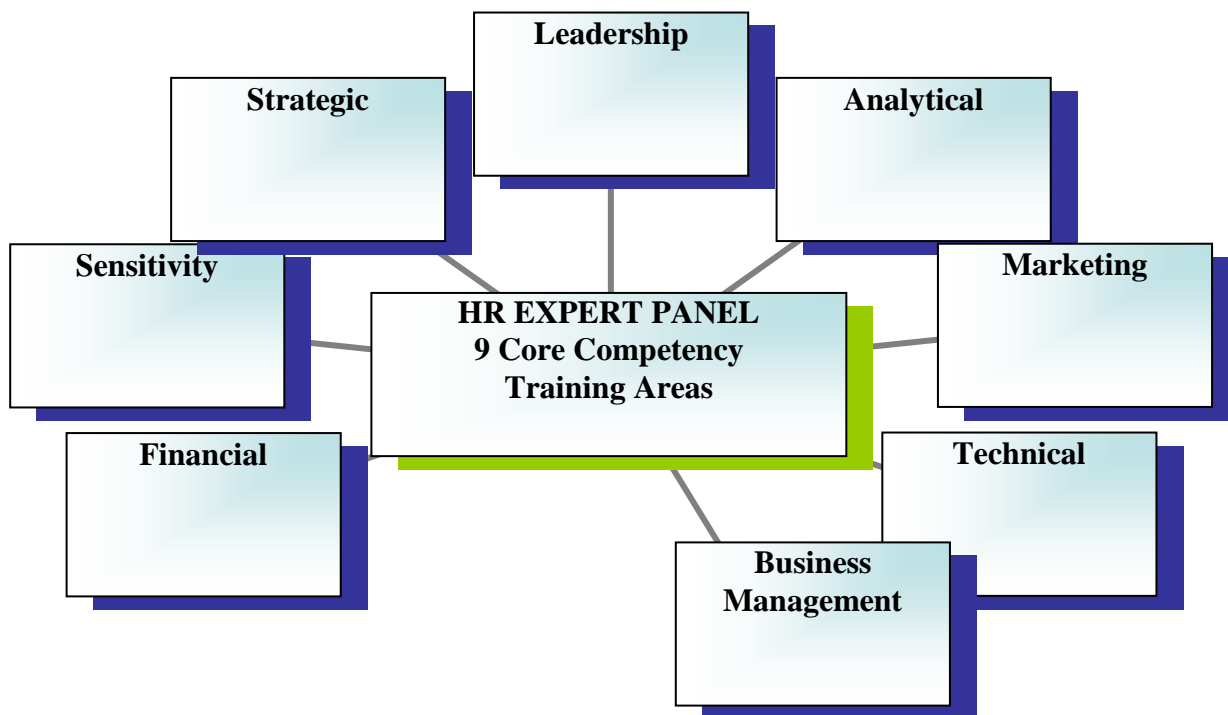
Discussion

This project aimed to assist current research projects underway by the Transit Cooperative Research Program (TCRP), which is sponsored by the Federal Transit Administration (FTA), as well as other government reports from the U.S. Department of Transportation, the Federal Highway Administration (FHA), and the American Public Transportation Association's (APTA) Workforce Development Initiative. In 2001, the APTA's Workforce Development Initiative identified several critical problems in workforce development in the transportation industry. One of the primary workforce issues identified across several transportation agencies in the report was the deficit in quality managers as a result of the aging workforce and inability of all branches of transportation to attract and train high performing executives. Thus, the aim of this project was to develop a core competency model that could be used to effectively recruit, train, and retain superior leaders in intermodal transportation.

Eleven human resource managers identified 9 core competency training areas for employees in intermodal transportation: Leadership, Analytical, Marketing, Technical, Business Management,

Communication, Financial, Sensitivity, and Strategic. The HR panel also suggested that the leadership competency training cluster included the following components: trust and honesty, cultural attributes, and sensitivity to government relation issues. Quantitative results from a 360 degree feedback questionnaire of mid-level managers and their colleagues revealed the superior group outperformed the average comparison group on delivering results, collaborating, getting things done, prioritizing appropriately, and building trust. These competencies were distinguishing characteristics between the groups.

Based on peer importance ratings, the following items were ranked highest by mean values: Consistently delivers superior results, Collaborates effectively with others, Is a good team player, Knows how to get things done, Demonstrates high personal standards, and Behaves in a way that builds trust with others. Thus, these competencies were thought to be of the most importance to successful management in intermodal transportation. The highly effective leaders produced superior performance results in people-effectiveness areas. Thus, it was assumed that technical/functional skills and abilities are not sufficient alone for leadership acumen in transportation. A certain degree of interpersonal effectiveness and self-awareness also must be present. The three clusters of self-effectiveness, interpersonal effectiveness, and technical effectiveness that were identified as most important competency areas for executives in intermodal transportation will be validated over the course of the next year by acquiring additional data on a separate sample of mid-level transportation managers. The next phase is to validate and refine the model against additional data and behavioral observations.