- RESEARCH PAPER -

RE-ASSESSMENT OF LEADERSHIP BEHAVIOR TAXONOMY CONSTRUCTS: CONSTRUCT VALIDATION ANALYSIS

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Abstract

Despite of the huge number of leadership behavior description measures in the literature, construct assessment and validation studies are very rare in literature. In this sense, this survey, which focused on the construct re-assessment and validation of leadership behavior taxonomy, is expected to contribute to leadership literature. Yukl's Leadership Behavior Taxonomy (LBT) is focused on and the constructs of LBT have been evaluated in terms of content validity, convergent validity, discriminant validity and predictive validity in this study. The survey was conducted on 445 middle level managers of 188 large-scale firms operating in manufactory industry and 550 managers operating in service industry in Turkey. Data obtained from 445 middle level managers operating in manufacturing industry and 550 managers operating in service industry were analyzed through the SPSS and AMOS statistical packet programs. The findings of this survey revealed that 23 items-three factors-LBT model has better fit for the managers of both manufacturing and service industry in Turkey.

Keywords: *Leadership behavior taxonomy, Task-oriented leadership, Relations-oriented leadership, Change-oriented leadership, Construct validation analysis.*

JEL Codes: *M10, M12, C52*
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LİDERLİK DAVRANIŞI BOYUTLARININ YENİDEN DEĞERLENDİRİLMESİ: ÖLÇEK GEÇERLEME ÇALIŞMASI

Öz

Literatürde, liderlik davranışının ölçümüyle ilgili çok sayıda çalışma mevcut olmasına rağmen, liderlik davranışı yapılarını ele alan ölçek geçerleme çalışmalarına nadiren yer verilmektedir. Bu kapsamda, literatürde en çok kullanılan ölçeklerden biri olan Yukl'un Liderlik Davranışı Sınıflaması (Leadership Behavior Taxonomy-LBT) ölçeğini, içerik geçerliliği, yakınsama geçerliliği, ayrışma geçerliliği ve öngörü geçerliliği bağlamında yeniden değerlendiren bu çalışmanın literatüre katkı sağlaması beklenmektedir. Çalışma Türkiye'de üretim sektöründe faaliyet gösteren 188 büyük ölçekli firmanın 445 orta düzey yöneticisi ile hizmet sektöründe çalışan 550 yönetici üzerinde yürütülmüştür. Türkiye'deki üretim ve hizmet sektörü yöneticilerinden elde edilen veriler SPSS ve AMOS istatistik programları kullanılarak değerlendirilmiş ve analiz bulguları, liderlik davranışıyla ilgili 23 sorulu 3 boyutlu bir yapı ortaya

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koymuştur.

Anahtar Kelimeler: *Liderlik davranışı sınıflaması, Görev odaklı liderlik, İlişki odaklı liderlik, Değişim odaklı liderlik, Ölçek geçerleme analizi*

JEL Kodları: *M10, M12, C52*

1. INTRODUCTION

Researchers have defined leadership in many ways, such as in terms of traits, characteristics, behaviors, relationship and interaction patterns, occupied status. Literature is full of variety of the definitions of leadership because all researchers define leadership in accordance with their individual perspectives and their interests. Stogdill's (1974;259) view of "there are almost as many definitions of leadership as there are persons who have attempted to define the concept", also supports the previous statement.

The major problem of leadership theories and researches has been the lack of agreement about which behavior categories are relevant and meaningful for leaders. Some of the researchers use same term to define different type of behavior, while some other use different terms to define same type of behavior. So, there has been a huge number of taxonomies and definitions on leadership behavior (see Yukl, 2002; Yukl et al., 2002; Bass, 1990; Dienesch and Liden, 1986). As much as the number of taxonomies on leadership behavior, there are so many leadership behavior description measures in the literature. While some other leadership behavior description measures have been found in the literature (Lindel and Rosenqvist, 1992; Quinn, Faerman, Thompson and McGratth, 1996; Hooijberg and Choi, 2000;), the LBDQ (Leader Behavior Description Questionnaire) scale based on Yukl's Leadership Behavior Taxonomy (LBT) model is brought in the forefront (Strang, 2007; Behrendt, Matz and Göritz, 2017).

Yukl (2002) conceptualized task oriented leadership behavior, relations oriented leadership behavior and change oriented leadership behavior as three independent dimensions rather than three mutually exclusive categories of specific behaviors. Yukl et al. (2002) identified 12 specific leadership behaviors –clarifying, monitoring, planning, consulting, supporting, recognizing, developing, empowering, visioning, risk taking, innovating, scanning- which were embodied in three metacategories – task, relations and change factors. On the other hand, in the book of "Leadership in Organizations", Yukl (2002) described ten specific leadership behavior embodied by three metacategories of task, relations and change oriented leadership. Those are clarifying, monitoring and planning for task oriented leadership behavior; supporting, developing and recognizing for relations-oriented leadership behavior; and influencing culture, developing vision, implementing change and encouraging learning and innovation for change oriented leadership behavior. Moreover in the study of "Effective leadership Behavior: What we know and what questions need more attention", Yukl (2012) identified 15 leadership behavior which were embodied by four metacategories- task oriented, relations oriented,

change oriented and external factor. So, the inconsistency on categorization and conceptualization of leadership behaviors reveals the need for construct assessment and validation of leadership behavior taxonomy (LBT) model. Despite the expanded use of leadership behavior scale, construct assessment and validation studies are very rare in literature. In this sense, this survey, taking on the construct re-assessment and validation of LBT model is expected to make valuable contribution to leadership literature.

Previous taxonomy of Yukl (Yukl et al., 2002) with 12 specific leadership behavior is based on prior measures of leadership behavior that provide evidence for construct validity of the component behavior, but later taxonomies with 10 (Yukl 2002) and 15 (Yukl, 2012) specific leadership behavior categories, are extracted from judgmental classification and theoretical deduction. Despite the enhanced categories, some recent researches also suggest that a three-dimensional taxonomy provides the most useful and parsimonious way to group specific behaviors into general categories (e.g. Behrendt, Matz and Göritz, 2017; Avolio and Bass, 1991; Ekvall and Arvonen, 1991; Yukl, 2002). Thus, in this survey, three-factor taxonomy with 10 specific leadership behavior will be focused on in order to see whether or not those 10 specific leadership behaviors represent three metacategories of task, relations and change oriented leadership behavior as proposed in theory. In other words, theoretical LBT model embodying on 10 specific leadership behaviors will be tested empirically which differentiate this survey from the previous ones. Especially, 10 specific leadership behavior representing three metacategories of LBT is focused on because it based on theoretical deduction and met the principle of parsimony.

Moreover, primary and well-known researches on that subject have been conducted in developed countries. The cultural and structural differences between developed and developing countries can provide different results for the same research. So, any research on the leadership behavior construct conducted in a developing country may produce different results from that of the developed countries. In this context, this survey was conducted in a developing country, Turkey, to see whether the constructs structure of leadership behavior taxonomy differs upon the country factor. Moreover, construct validation and scale reliability of three-factor LBT model for the managers of large scale firms operating in manufacturing and service industry in Turkey has been conducted for the first time in this study.

In that direction, after a brief literature review of leadership behavior, constructs of LBT will be evaluated following the guidelines of Ghiselli, Campbell and Zedeck et al. (1981), Schwab (1980) and Bagozzi and Phillips (1991), Hair et al. (2010), which suggested a construct validity process consisting of (1) content validity, (2) convergent validity, (3) discriminant validity, (4) predictive validity. At the end of the study, the results of the survey will be discussed and implications for future studies will be provided.

1.1. Literature Review

Early researches on leader behavior has been affected by two pioneering school: The Ohio State Leadership Studies and The Michigan Leadership Studies. Researchers of

Ohio State University identified two major leadership behaviors, called "consideration" and "initiating" structure. "Consideration" is the extent to which leader is mindful of subordinates, respects their ideas and feelings, and establishes mutual trust, while "initiating" is the extent to which the leader is task oriented and directs subordinate work activities toward goal attainment (Daft, 2008). Considerate leaders are friendly, provide open communication, develop teamwork, and are oriented toward their subordinates, whilst initiating leaders are more prone to give instructions, spend time planning, emphasize deadlines, and provide explicit schedules of work activities (Daft, 2008). Researchers at Michigan University at about same time surveyed effective and ineffective leadership behavior. Through the data obtained from interviews and questionnaires, researcher identified two types of leadership behavior: employee oriented leadership behavior and job centered leadership behavior. Job centered or task oriented behavior, similar to the behavior labeled "initiating structure" in the Ohio State University leadership studies, includes the behavior of focusing on production and technical characteristics of a job while employee oriented leadership behavior, similar to the behavior labeled "consideration structure", focus on building good interpersonal relations with the employees.

In 1980s, organizations needed to change their ways of doing job for survival, which made the issue of leading change to become more relevant subject. So, leading the change became the essence of leadership responsibility (Yukl, 2002). Although the importance of leading change was suggested as main leadership responsibility by some organization theories, change related leadership behaviors have not been described by 1990s. First study examining the change oriented behavior as a distinct construct was conducted by Ekwall and Arvonen (1991). Survey results revealed a three-factor model, which were labeled as employee centered, production centered and change centered factors (Ekwall and Arvonen, 1991). Then Yukl (1998) conducted a survey on 318 middle and upper level managers of private and public organizations, and the exploratory factor analysis of that survey produced a clear factor structure for task oriented behavior, relations oriented behavior and change oriented behavior (Yukl, 1998). So traditional two-factor leadership behavior taxonomy has been extended by the change oriented leadership behavior is embodied in as a distinct construct. Yukl (2002) conceptualized task oriented leadership behavior, relations oriented leadership behavior and change oriented leadership behavior as three independent dimensions rather than three mutually exclusive categories of specific behaviors.

Yukl (2012) also extended leadership behavior categories to 4 metacategories by adding "*external leadership behavior*", through which leaders can get relevant information and necessary resources in outside, so can facilitate performance. Networking, external monitoring and representing behaviors are considered as components of external leadership behavior (Yukl, 2012). The classification of leadership behaviors in years by Yukl is depicted in Table 1.

Table 1: Leadership Behavior Taxonomies

	Yukl et al. 2002	Yukl 2002	Yukl 2012
Task Oriented Leadership Behavior	• Clarifying • Planning • Monitoring	• Clarifying • Planning • Monitoring	• Clarifying • Planning • Monitoring operations • Problem solving
Relations Oriented Leadership Behavior	• Supporting • Developing • Recognizing	• Supporting • Developing • Recognizing • Consulting • Empowering	• Supporting • Developing • Recognizing • Empowering
Change Oriented Leadership Behavior	• Influencing organizational culture • Developing vision • Implementing change • Increasing innovation and learning*	• External Monitoring • Envisioning change • Encouraging innovative thinking* • Taking personal risks	• Advocating change • Envisioning change • Encouraging innovation • Facilitating collective learning*
External Leadership Behavior			• Networking • External monitoring • Representing

Source: Extracted from the studies of Yukl (2002), Yukl et al. (2002) and Yukl (2012)

1.2. Task Oriented Leadership Behaviors

Task oriented behavior can be defined as leaders' emphasis on the tasks that need to be performed to achieve certain goals. *Task oriented leadership* has been described in different terms by researchers in leadership literature, like as *X Theory* (McGregor, 1960), *transactional leadership behaviors* (Bass, 1985). Moreover, researchers described so many behaviors related to the task oriented leadership, like as problem solving, trying out new ideas and making task assignments (Fleishman, 1953), focusing how things are done (Zaleznik, 1977), focusing on systems and structures (Bennis and Nannus, 1985), problem solving and controlling (Kotter, 1990), and directing operations. After an extensive literature review, Yukl (2002) states that ***task-oriented leadership*** behavior is primarily concerned with using human and financial resources efficiently to accomplish the task and to maintain reliable operations orderly. He also indicates the components of task oriented leadership behaviors as planning, clarifying, and monitoring in his three studies commonly (Yukl et al., 2002; Yukl, 2002; Yukl, 2012). ***"Planning"*** can be defined as determining the objectives, strategies, activities, responsibilities and deadlines. In other words it is about deciding what to be done how, when and by whom. It includes "*making decisions about objectives, priorities, strategies, organization of the work, assignment*

of responsibilities, scheduling of activities, and allocation of resources among different activities according to their relative importance" (Yukl, 2002; 67). **"*Clarifying*"**, the second specific behavior of task oriented leadership, is about assigning and communicating the tasks, responsibilities, objectives, plans, procedures, strategies, politics, and performance expectations. Yukl (2002b) states the major subcategories of clarifying as defining job responsibilities and requirements, setting performance goals, and assigning specific tasks. The last specific behavior of task oriented leadership, **"m*onitoring*",** involves gathering information about external factors affecting the work activities, controlling the progress and quality of work activities, evaluating the performance and efficiency of individuals, programs and projects (Yukl, 2002). Yukl (2002 and 2012) indicates that information provided by monitoring process is used to identify problems and opportunities, which constitutes some parts of planning and problem solving. Moreover, he proposed "problem solving" as fourth component of task oriented leadership, which is defined as "*dealing with disruptions of normal operations and member behavior that is illegal, destructive, or unsafe*" (2012:70) in his study (2012). However, he also indicates the importance of identifying the difference between operation problems and complex problems, because they require two different leadership behavior –task oriented and change oriented leadership behavior respectively. Even though problem solving is considered as part of task oriented leadership behavior by Yukl (2012), it is not included in components of task oriented leadership behavior because it has also change oriented leadership behavior aspects.

1.3. Relationship Oriented Leadership Behavior

Relations oriented leadership behavior is defined as improving interpersonal relationships to employees that helps to increase job satisfaction, cooperation, teamwork and identification with the organizations. Researchers have also described the relations-oriented leadership behaviors as focusing on what things mean to people (Zaleznik, 1977), focusing on people (Bennis and Nannus, 1985), motivating and inspiring (Kotter, 1990), inspiring others. Moreover, *Theory Y- proposing the* providing encouragement, positive reinforcement, and rewards (McGregor, 1960), and *transformational leadership theory- proposing the motivation of followers to raise their awareness of achieving goals* (Bass, 1985) can be considered as varying categorization labels which describe the relations oriented leadership behavior. According to Yukl, relations oriented leadership behavior is primarily concerned with improving the human relationships and quality of communications and increasing the team work, cooperation and job satisfaction (2002), and the main objective of relations oriented behavior is to increase the quality of human resource, namely "human capital" (2012). He identifies mainly three *relations oriented leadership* behaviors: supporting, developing, and recognizing (Yukl, 2002). ***"Supporting"*** includes acting friendly considerate, patient, helpful and supportively. Building and maintaining interpersonal relations with subordinates, expressing confidence to people on achievement of objectives, socializing with people to build relationship can be considered as some forms of supporting behavior. As Yukl (2002) indicates, some forms of supporting behaviors, as like consideration, acceptance, and concern for the needs and feelings of other people, reduce the stress in job, which result in increased job satisfaction and commitment of employees (Rowold, Borgmann, and Bormann, 2014).

*"**Developing**"* is primarily concerned with coaching, which aims to increase a person's skills and to facilitate job adjustment and career advancement (Yukl, 2002, 2012). In terms of developing, leader may help someone to do a task in a better way, to explain someone to solve complex problems, and to allow someone to learn from mistakes (Yukl et al., 2002). Yukl (2002) argue that some developing items of relations oriented behavior are included in the individualized consideration scale of Bass and Avolio (1990). Developing behavior are mostly associated with followers' performance and satisfaction (e.g. Kim and Yukl, 1995; Javidan, 1992). On the other hand, *"**recognizing**"* is described as praising an appreciating the others for their performance, achievements, and contributions. Yukl (2002) states that recognizing would be in form of praise, awards, and recognition ceremonies (Yukl, 2002). While most researches revealed a positive relationship between the components of recognizing (praise, awards, and recognition ceremonies) and subordinates' satisfaction; the effects of recognizing behaviors on performance is controversial (e.g. Wikoff et al., 1983; Podsakoff and Todor, 1985; Kim and Yukl, 1995). Yukl (2002) extended the components of relations oriented leadership behavior into five subcategories by introducing "consulting" and "empowering" behaviors. While consulting involves participation of subordinates in decision making process, empowering involves delegation of authority to subordinates. In this survey, three aspects-supporting, developing and recognizing- are focused as components of relations oriented leadership behavior, which were consistently held by three studies (Yukl, 2002, 2012 and Yukl et al., 2002).

1.4. Change Oriented Leadership Behavior

Change oriented leadership behavior is primarily concerned with developing strategic vision, implementing the change and encouraging flexibility and innovation to lead the change efficiently. The most aspects of change oriented leadership are included in transformational and charismatic leadership theories (Bass, 1985; Conger and Kanungo, 1998), like as influencing process, facilitating conditions, intellectual stimulation, and idealized influence. Yukl (2002) mainly specifies change-oriented behaviors as (1) influencing organizational culture, (2) developing a vision, (3) implementing change, (4) increasing innovation and learning. "***Influencing organizational culture**"* may appear in forms of what things are attended, ways of reacting to crises, role modeling, allocation of rewards, criteria for selection and dismissal (Schein, 1992). Trice and Beyer (1993), proposed changing cultural forms like slogans, rituals and symbols, as another way of influencing organizational culture. The other aspect of change oriented leadership behavior, *"**developing vision**"* creates continuity and collectivity sense for followers *"by linking past events and present strategies to a vivid image of a better future for the organization"* (Yukl, 2002; 283), and by helping "*to guide and coordinate the decisions and actions of thousands of people working in widely dispersed locations"* (Yukl, 2002; 283). Yukl described this aspect as "envisioning change" in his another study and indicate that a clear and appealing vision would contribute to commitment to new strategies and innovations (2012). *"**Implementing change**"* requires a wide range of behaviors like as determining the persons opposing and facilitating change, building a broad coalition to support the change, filling key positions with competent change agents, using task forces to guide implementation, making dramatic, symbolic changes that affect the

work, changing relevant aspects of the organization structure, monitoring the progress of change, creating a sense of urgency about the need for change, preparing people to adjust to change, keeping people informed about the progress of change, empowering people to implement the change, demonstrating continued commitment to the change, and helping people to deal with the pain of change (Yukl, 2002). *"Increasing innovation and learning"* is another crucial aspect of change oriented leadership behavior, which includes the behaviors of encouraging the system thinking, experimentation, innovation, entrepreneurial activity, flexibility, and learning, facilitating diffusion of learning in the organization, leveraging learning from surprises and failures, and helping people to understand and improve mental models (Senge, 1990; Ulrich Jick and Glinow, 1993; Nadler, Shaw, Walton and Associates, 1995). Moreover, Yukl et al. (2002) argued that this behavior is similar to "intellectual stimulation" in MLQ of Bass and Avalio (1990), TLI of Podsakoff, MacKenzie, Moorman, and Fetter (1990), and MLI of Castro and Schriesheim (1998). Yukl (2012) differentiates innovation from learning in his subsequent study and identifies "*encoring innovation*" and "*facilitating collective learning*" as two different aspects of change oriented leadership behavior.

Yukl and his colleagues (2002) identifies the aspects of change oriented behaviors as *external monitoring, envisioning change, encouraging innovative thinking* and *taking personal risk* in the study of "A Hierarchical Taxonomy of Leadership Behavior". However in another study, which was conducted in 2012, Yukl introduces "*external leadership*" as the fourth dimension of Leadership Behavior Taxonomy (LBT), and describes external monitoring as an aspect of "external leadership" behavior. Besides external monitoring, *networking* and *representing* were introduced as other aspects of the "external leadership" dimension (Yukl, 2012). So, the inconsistency on classification of sub-dimensions also reveals the need for construct assessment and validation of leadership behavior taxonomy (LBT) model.

2. METHODOLOGY

2.1. Research Goal

Besides the rareness of construct assessment and validation studies in leadership literature, the fact that the primary and well-known researches on that subject have been conducted in developed countries, leaded researchers to conduct this survey. The purpose of this survey is to test validity of LBT model of Yukl including three metacategories with 10 leadership behavior, in a developing country, Turkey.

2.2. Sample

The survey was conducted on 445 middle level managers of 188 large-scale firms operating in manufactory industry in Turkey. The determination of "large scale" was based on inclusion in the "Turkey's Top 1000 Companies" list (ISO, 2013-2016). Middle level managers are preferred for this survey because those managers determine how to meet the goals set by top managers and arrange the relations between top managers and first line managers (Ebert and Griffin, 2013). Moreover, they can evaluate organization's

innovation and overall performance better than any employee or first line manager.

About 700 firms indicating email addresses on the "Turkey's Top 1000 Companies" list, were contacted via email and provided a brief information about the survey. 2-5 middle level managers of each firm were contacted via email or phone and asked to fill out the survey questionnaire. Moreover physically close firms (mostly locating in Marmara Region-İstanbul, Kocaeli, Bursa) are visited, middle managers are asked to fill out the questionnaire face to face. 307 middle managers of 121 firm filled out survey questionnaire face to face. 162 filled out questionnaire forms also were received from 73 firms via email. 24 forms obtained from 6 firms are eliminated because they do not meet the requirements. So 138 complete questionnaires received from middle level managers of 67 firms via email, and 307 complete questionnaires filled out by middle managers of 121 firms face to face were included in analysis process. % 20 of those respondents are from operation department, %20 from accounting and finance department, % 7,5 from human resource department, %37 from marketing and sale department and %15,5 from other departments not indicated in questionnaire.

In second stage, survey was repeated on managers of variety of firms operating in service industry in order to see whether results are affected by industry factor, or not. Data obtained from 445 middle level managers operating in manufacturing industry and 550 managers operating in service industry were analyzed through the SPSS and AMOS statistical packet programs.

2.3. Measures

The leadership behavior taxonomy (LBT) scale of Yukl was originally contained 19 leaders behavior variables which extracted from earlier leadership studies, models, theories. Then, it was expanded to 30 (Yukl, 1998), and finally 48 (Yukl et al., 2002), which supports more detailed analysis since there are more elements to classify observations. Those variables have been employed in operationalization of leadership behavior construct.

As indicated previously, 10 specific leadership behaviors embodied by three metacategories are measured through the 33 item-scale adopted from Yukl (2002). 3 items or 4 items are used to measure each specific behavior (3 items for each of planning, clarifying, supporting, recognizing, developing, influencing culture and visioning behaviors; 4 items for each of monitoring, implementing change, encouraging innovation and learning behaviors). 33 items measuring 10 specific leadership behavior were scored on five-point-likert-type scale, at which 1-represents never, 2-rarely, 3 sometimes, 4-very often, 5-always. A respondent was asked to evaluate behaviors of his/her top level executive to whom s/he reports in terms of those items (e.g. My executive clarifies role expectations and task objectives).

For predictive validity, the effects of leadership behaviors on satisfaction, organizational commitment, innovation performance and firm performance have been examined. A respondent was asked to evaluate his/her firm's innovation and overall performance (e.g. New product introduction rate of our firm in last five years) in terms of 8-items-innovation

scale adapted from Miller and Friesen (1982), Prajogo and Sohal (2006), and 5-items-firm performance scale adopted from Khandawalla (1977). 13 items measuring innovation and overall performance of a firm were also scored on five-point-likert-type scale, at which 1-represents very poor, 2-poor, 3-fair, 4-good, 5-very good. The respondents also rated their commitment level to the organization. 10-items-commitment scale adopted from Mowday, Steers, Porter (1979) were formatted according to 5 point-Likert scale, at which 1 represents strongly disagree, 5-strongly agree.

All items were translated from English to Turkish by the researcher. Then, those items were reevaluated in terms of content by three academicians studying on this field. By taking in to consideration of Turkish culture and language characteristics, some of the items were revised by those academics. A preliminary form of questionnaire was tested on 63 MBA students who working as executives in a variety firms. As a result of data obtained in the preliminary application, the structure and reliability of measures have been examined. Cronbach's alpha coefficients of all items were above 0.90, so all items were included in the main questionnaire form. All items were scored on five-point Likert-Type Scale (1-Never, 2-Occasionally, 3-Sometimes, 4-Often, 5-Always).

3. CONSTRUCT VALIDATION

Construct validity is the extent to which a set of measured items actually reflects the theoretical latent construct those items are designed to measure. Thus it deals with the accuracy of measurement (Hair et al. 2010). Construct validity is made up of four components: of (1) content validity, (2) convergent validity, (3) discriminant validity, (4) predictive validity (Ghiselli et al. 1981; Schwab,1980; Bagozzi and Phillips, 1991; Hair et al. 2010).

3.1. Content Validity

Content validity depends on how well the researchers create measurement items to cover the aspects of the variable being measured (Nunnally, 1978). The evaluation of content validity is a rational judgmental process not open to numerical evaluation. Usual method of ensuring content validity is and extensive review of literature for the choice of the items and getting inputs from the researchers on the appropriateness (Li, Rao, Ragu-Nathan, and Ragu-Nathan, 2005).
In this survey, 33 items, adopted from Yukl (2002), were used to test three-factor LBT leadership model including 10 leadership behavior.

Leadership behavior taxonomy of Yukl, is more comprehensive model because it includes three metacategories-*task orientation, relations orientation* and *change orientation*- with 10 specific leadership behaviors- *planning, clarifying, monitoring, supporting, developing, recognizing, influencing organizational culture, developing a vision, implementing change, increasing innovation and learning* -which were described in various taxonomies partially. Three-factor LBT model, is extension of traditional two-factor leadership behavior taxonomy-"initiating structure" (*task orientation*) and "consideration structure" (*relations orientation*). Change oriented behaviors also involves so many aspects of

transformational and charismatic leadership theories (Bass, 1985; Bass, 1998; Conger and Kanungo, 1998; Avolio et al. 1991), such as influencing process, facilitating conditions, intellectual stimulation, and idealized influence. Moreover, *"increasing innovation and learning"* behavior is considered similar to "intellectual stimulation" in MLQ of Bass and Avalio (1990), TLI of Podsakoff, et al. (1990), and MLI of Castro and Schriesheim (1998) by Yukl et al. (2002).

Yukl (2012) extended leadership behavior taxonomy by introducing "*external leadership behavior*" as fourth dimension. He also introduced new leadership behavior aspects, and extended the three-factor LBT model into four-factor LBT model with 15 specific leadership behaviors (see Table 1). However, some recent researches also suggest that a three-dimensional taxonomy provides the most useful and parsimonious way to group specific behaviors into general categories (e.g. Avolio and Bass, 1991; Ekvall and Arvonen, 1991; Yukl, 1999; Yukl, 2002), three-factor taxonomy with 10 specific leadership behaviors is preferred to be examined in this study. In three factor LBT model, Yukl (2002) conceptualizes task oriented leadership behavior, relations oriented leadership behavior and change oriented leadership behavior as three independent dimensions rather than three mutually exclusive categories of specific behaviors and argues that the three types of leadership behavior interact to jointly determine work unit performance.

3.2. Convergent Validity

Convergent validity is about the extent to which there is consistency in measurements across multiple operationalizations and measures of the same construct should display a large common variance (Li et al., 2005). In other words, the items that are indicators of a specific construct should converge or share a high proportion of variance in common, known as convergent validity (Hair et al., 2010). In order to estimate the relative amount of convergent validity among item measures, several ways are available, as like factor loadings, average variance extracted (AVE), reliability coefficients (Hair et al., 2010). For convergent validity, following procedures were executed in this survey.

The Cronbach's alpha coefficient for all variables was examined on data obtained from the sample of 445 managers. The result of alpha test revealed that one item (LID 2) has low corrected -total correlation score (0.392). So, this item was eliminated and remaining 32 item with 0.964 Cronbach's alpha coefficient indicating high reliability were included in principal exploratory factor analysis.

Then exploratory factor analysis (EFA) was conducted with these remaining 32 items on data obtained from the sample of 445 managers. The exploratory factor analysis is generally used in early stages of research when there is an insufficient theoretical or empirical basis to hypothesize the number of underlying factors and/or which specific indicators these factors are likely to influence (Podsakoff, et al., 2003:620). Although three-construct leadership behavior model has well-built theoretical base (see Yukl, 2002), empirical researches sometimes can not support the theory. For example Yukl (2002) proposed developing behavior as part of relations-oriented leadership in theory, while in operationalization of the constructs, Yukl et al.(2002), indicated developing behavior as part of task-oriented leadership behavior. This inconsistency between conceptualization

and operationalization of constructs leaded the researcher to re-consider the constructs of LBT. Thus, assessment of LBT constructs started using factor analysis.

Warimax rotation was used because three LBT constructs are assumed and conceptualized as independent dimensions in theory (see Finch, 2006). The items with factor scores less than 0,50 and cross-loadings were eliminated for better factor structure. So, three items (LID 8, LID 9, LID 10) with low factor loadings (less than 0.50) and one item (LID 19) with cross-loadings were eliminated. Remaining 28 items were loaded on three different factors without any cross-loadings. EFA results have been depicted at Table 2.

Table 2: Exploratory Factor Analysis (EFA) Results

Items	TOL	ROL	COL
Task Oriented Leadership (TOL)			
LID 1 (eliminated in CFA)	0.513		
LID 3	0.771		
LID 4	0.746		
LID 5	0.722		
LID 6	0.689		
LID 7 (eliminated in CFA)	0.506		
Relations-Oriented Leadership (ROL)			
LID 11		0.608	
LID 12		0.575	
LID 13 (eliminated in CFA)		0.779	
LID 14		0.725	
LID 15		0.622	
LID 16		0.659	
LID 17 (eliminated in CFA)		0.683	
LID 18		0.578	
LID 20		0.569	
Change Oriented Leadership (COL)			
LID 21			0.551
LID 22			0.599
LID 23 (eliminated in CFA)			0.775
LID 24			0.672
LID 25			0.783
LID 26			0.707
LID 27			0.659
LID 28			0.726
LID 29			0.711
LID 30			0.711
LID 31			0.747
LID 32			0.766
LID 33			0.678
Total Explained Variance for Leadership Style %62,400			

Notes: Extraction Method: Principal Component Analysis Rotation Method: Warimax with Kaiser Normalization Rotation converged in 6 iterations

Structures of remaining 28 items were operated in CFA with Maximum likelihood (ML) estimation method using same data. CFA evaluates the factors' psychometric properties in terms of reliability and validity (Acar and Zehir, 2009). Overall model fit was evaluated based on multiple fit indexes. During the CFA procedure, comparative fit index (CFI), goodness of fit index (GFI), normed fit index (NFI), incremental fit index (IFI), Tucker-Lewis index (TLI), were considered. If all these indexes (CFI, GFI, NFI, IFI, TLI) are above 0.90, it indicates the perfect fit value and model is ideal (Hair et al., 2010). However, some other researchers notify that if these indexes are above 0.95, it indicates perfect fit value while the indexes above 0.85 are acceptable fit values (Klein, 1998; Schermelleh Engel et al., 2003; Schumacker and Lomax, 1996).

The root mean square residual of approximation (RMSEA) and the root mean square residual (RMR) were also considered. For perfect model fit, Hair et al. (2010) suggested RMSEA value between 0.03 and 0.08 for a sample consisting more than 500 respondents. Hair et al. (2010) also notified that lower RMR values represents better fit, although they did not give any statistical threshold level. The normed chi-square (x^2/df) statistics is also taken into consideration to evaluate the parsimonious fit (Hair et al. 2010). Commonly accepted indexes values in literature was depicted on Table 3.

Table 3. Acceptable and Perfect Fit Index Values

Fit Index	Perfect Fit Value	Acceptable Fit Value
χ^2/df	≤3	≤4-5
CFI	≥0.95	≥0.94-0.90
NFI	≥0.95	0.94-0.90
IFI	≥0.95	0.94-0.90
TLI	≥0.95	0.94-0.90
GFI	≥0.90	0.89-0.85
AGFI	≥0.90	0.89-0.85
RMSEA	≤0.05	0.06-0.08
RMR	≤0.05	0.06-0.08

Resources: Schumcaker and Lomax, 1996; Browne and Cudeck, 1993; Kline, 1998; Schermelleh Engel Moosbrugger, Müler, 2003; Hair et al., 2010; Meydan and Şeşen, 2011)

As a result of fit analysis of first order CFA of the initial model obtained from exploratory factor analysis, the following findings revealed: X^2/df= 3.985; GFI= 0.841; CFI= 0.905; NFI= 0.878; IFI= 0.906; TLI= 0.897; RMR=0.048; RMSEA= 0.074 . Those finding revealed that the initial model should be adjusted for better model fit. To improve better model, following procedures were executed.

The factor loadings of all 28 items were significant and their scores were between 0.627 and 0.853. Modification indexes analysis results revealed large error covariance between some variables. So, LID 1, LID 7, LID 13, LID 17 and LID 23 were eliminated because their standardized residual covariance were above 2 and regression weight scores examining the modification indices, as suggested in AMOS 18-statistical packet

programme. By eliminating 5 items, the scale was reduced to 23 items. Model fit indexes were found as X^2/df= 3.766; GFI= 0.878; CFI= 0.930; NFI= 0.907; IFI= 0.930; TLI= 0.922; RMR=0.038; RMSEA= 0.071, which indicates better model fit. After first-order CFA, a second-order CFA also was conducted to prove construct validity. Interestingly, the findings of second-order CFA (X^2/df= 3.766; GFI= 0.878; CFI= 0.930; NFI= 0.907; IFI= 0.930; TLI= 0.922; RMR=0.038; RMSEA= 0.071) are identical with the findings of first-order CFA, which was strikingly noteworthy diagnosis of this survey.

Remaining 23 items loaded on three factors as 4 items for TOL, 7 items for ROL and 12 items for COL. The factor loadings of adjusted model with 23 items are between 0.643 and 0.857, which is depicted on Table 3. Although six loading estimates are below 0.7, they do not appear to be significantly harming model fit or internal consistency. As seen on Table 4, Cronbach Alpha (a) values range from 0.81 for the TOL construct, 0.91 for the ROL construct and 0.95 for the COL construct. However it has been noted that Cronbach a uses restrictive assumptions and does not ensure the unidimensionality (Hair et al., 2010). Thus an alternative construct reliability measure has been suggested by researchers (Werts, Linn and Joreskog, 1974; Fornell and Larcker, 1981; Hair et al. 2010). The alternative composite reliability shows the degree to which the observed variables adequately represent the corresponding latent variable (Acar and Zehir, 2009). The composite reliability coefficients of dimensions exceed 0.80, which indicates the adequacy of construct reliability. AVE (average variance extracted) of constructs were also calculated as another way to reveal the convergent validity among the item measures. AVE of 0.5 or higher is considered as a good rule of thumb suggesting adequate convergence statistically (Hair et al., 2010). As depicted on Table 4, all AVE estimates exceed the 50-percent rule of thumb. Consequently, besides exceeding 50-percent AVE estimates, better fit model indexes mentioned above and higher reliability coefficient depicted on Table 4, indicated adequate evidence for convergent validity of 23items-three dimensions-LBT model.

Table 4: CFA and Reliability Analysis Results with 23 Items

	TOL	ROL	COL
Task-Oriented Leadership (TOL)	-	0.689	0.644
LID 3	0.684		
LID 4	0.771 (15.004)		
LID 5	0.744 (14.631)		
LID 6	0.674 (13.501)		
Relations-Oriented Leadership (ROL)	-	-	0.881
LID 11		0.834	
LID 12		0.825 (23.385)	
LID 14		0.815 (22.979)	
LID 15		0.793(22.027)	
LID 16		0.684 (17.882)	
LID 18		0.655 (16. 871)	
LID 20		0.784(21.660)	
Change Oriented Leadership (COL)	-	-	-
LID 21			0.695
LID 22			0.643 (14.457)
LID 24			0.799 (17.807)
LID 25			0.803 (17.904)
LID 26			0.818 (18.205)
LID 27			0.784 (17.498)
LID 28			0.779(17.391)
LID 29			0.780 (17.409)
LID 30			0.765 (17.088)
LID 31			0.772 (17.233)
LID 32			0.857 (19.035)
LID 33			0.807 (17.970)
Cronbach's Alpha Coefficients	0.810	0.910	0.947
Composite Reliability	0.810	0.912	0.925
AVE	0.518	0.597	0.604

Moreover, data obtained from the 550 managers of firms operating in service industry were used to re-test 23 items-three dimension LBT model. The findings of this second survey also gave evidence for the better model fit for the 23 items-three dimension LBT model (X^2/df= 3.958; GFI= 0.861; CFI= 0.940; NFI= 0.921; IFI= 0.940; TLI= 0.933; RMR=0.043; RMSEA= 0.073). The summary of the model fit indexes of the analyses mentioned above are given on Table 5.

Table 5: Comparison of Model Fit Indexes

Process	Model	X^2/df	GFI	CFI	NFI	IFI	TLI	RMR	RMSEA
CFA with 28 Items	1	3.985	0.841	0.905	0.878	0.906	0.897	0.048	0.074
CFA with 23 Items (LID1, LID7, LID13, LID17, LID23 eliminated (First Order)	2	3.766	0.878	0.930	0.907	0.930	0.922	0.038	0.071
CFA with 23 Items (Second Order)	3	3.766	0.878	0.930	0.907	0.930	0.922	0.038	0.071
CFA with 23 Items for Service Industry	4	3.958	0.861	0.94	0.921	0.94	0.933	0.043	0.073

3.3. Discriminant Validity

Discriminant validity refers to the independence of the dimension and measures of different constructs should share little variance (Bagozzi and Phillips, 1991). Hair et al. (2010) stated that the congeneric measurement model supports discriminant validity because it does not contain and cross-loadings among either the measured variables or the error terms. As depicted on Table 2 and Table 4, all items were loaded on their respective

construct without any cross-loadings, which gave an evidence for discriminant validity of 23 items-three dimension LBT measurement model.

3.4. Predictive Validity

Predictive validity, also known as criterion validity or nomological validity (Hair et al., 2010), seeks to find support for the validity of the construct by investigating whether it exhibits relationships with other constructs that are in accordance with theory (Li et al., 2005). In other words it is the degree of correspondence between a measure and a criterion variable (Bollen, 1989). In literature, leadership behavior constructs were used to be associated with organizational performance (Liden and Graen, 1980; Yukl, 2002), innovation performance (Kanter, 1983; Howell and Avolio, 1993; Dess and Picken, 2000; Aragon-Correa, Garcia-Moreales, Cordon-Pozo, 2007), and employees' commitment (Steyrer, Schiffinger, Lang, 2008; Avolio, Zhu and Bhatia, 2004; Bono and Judge, 2003; Avolio et al., 2009; Walumbwa, Orwa, Wang and Lawler, 2005; Podsakoff et al., 1990). As depicted on Table 6, three constructs of LBT, were significantly correlated to organizational performance (OP), innovation performance (IP) and employees' commitment (EC), which indicated higher predictive validity of 23 items-three dimensions-LBT model.

Table 6: Correlation Analysis Results

	TOL	ROL	COL	OP	IP	EC
TOL	1					
ROL	0.595**	1				
COL	0.570**	0.829**	1			
OP	0.334**	0.435**	0.502**	1		
IP	0.334**	0.465**	0.520**	0.649**	1	
EC	0.457**	0.517**	0.572**	0.476**	0.474**	1

Correlation is significant at the 0.01 level (2-tailed).

The sources of all constructs and reliability coefficients were also given on Table 7.

Table 7: Sources and Reliability Coefficients of Constructs

Constructs	Number of Indicators	Cronbach Alpha Coefficients	Source
TOL	4	0.810	Yukl, 2002
ROL	7	0.910	Yukl, 2002
COL	12	0.947	Yukl, 2002
OP	5	0.777	Khandawalla, 1977
IP	8	0.924	Miller and Friesen, 1982 Prajogo and Sohal, 2006
EC	10	0.914	Mowday, Porter and Steers (1982)

4. DISCUSSION

Leadership behavior taxonomy consist of the constructs of task oriented leadership, relation oriented and change oriented leadership, which were considered as three independent dimension rather than three mutually exclusive categories of specific behaviors by Yukl (2002). Although three-construct leadership behavior model has well-built theoretical base (see Yukl, 2002), empirical researches sometimes can not support the theory. There

were inconsistencies between theory and practices. This inconsistency also leaded the researcher to initiate this survey.

Survey results based on EFA and CFA analyses revealed that 23 items scale for three-factor model with 10 specific leadership behavior types best represents the factor structure underlying Yukl's Leadership Behavior Taxonomy. The leadership behavior taxonomy (LBT) scale of Yukl was originally contained 19 items representing leadership behaviors which extracted from earlier leadership studies, models, theories. Then, it was expanded to 30 (Yukl, 1998), and finally 48 (Yukl et al., 2002) items, which have been employed in operationalization of leadership behavior construct. Yukl et al. (2002) increased number of scale items in order to classify more observations. However, more items (measured variables or indicators) are not necessarily better. Although more items do produce higher reliability estimates and generalizability, more items also require larger sample sizes and can make it difficult to produce truly unidimensional factors (Hair et al., 2010). Moreover, to identify better performing indicators is relevant of most researches rather than increasing the numbers of indicator. So, the enthusiasm to identify the better performing indicators (items) to measure leadership constructs was also another impulsive force in conducting this survey. As been depicted in Appendix, 10 leadership behaviors are represented by remaining 23 items in scale (1 item for planning, 1 item for monitoring, 2 items for clarifying, 2 items for supporting, 2 items for recognizing, 3 items for developing, 2 items for influencing culture, 2 items for developing vision, 4 items for increasing innovation and learning, and 4 items for implementing change). Although most of the behaviors are represented 1 or 2 items, implementing change and increasing innovation and learning are represented 4 items, which leads the researcher to suspect on whether those items groups represent more than one leadership behavior. Moreover, the separation of innovation and learning into two different categories as "*encouraging innovation*" and "*facilitating collective learning*", and the separation of managing change as "advocating change" and "envisioning change" in the recent study of Yukl (2012) has justified the researcher's suspicion. Thus, the sub-dimensions and items of the change oriented leadership behavior can be examined specifically in terms of represented specific leadership behaviors in advanced researches.

As indicated previously, Yukl (2012) extended three-factor LBT model into four-factor LBT model with 15 specific leadership behaviors. Despite the enhanced categories, some recent researches also suggest that a three-dimensional taxonomy provides the most useful and parsimonious way to group specific behaviors into general categories (e.g. Avolio and Bass, 1991; Ekvall and Arvonen, 1991; Yukl, 1999; Yukl, 2002). When the importance of parsimony considered in researches, 23 item-scale representing three factor LBT model with 10 specific leadership behavior can be preferred to the extended leadership behavior taxonomies, which also increase the strength of this study.

Although researches on that subject mostly have been conducted in developed countries, this survey was conducted in a developing country, Turkey, which constitutes another strength of this study. Moreover, previously conducted surveys on that issue in Turkey, mostly focused on two dimensions of leadership behavior- task orientation and relations orientation (Rüzgar, 2018; Giray and Güngör, 2015; Özdevecioğlu and Kanıgür, 2009;

Akbaba and Erenler, 2008; Çoban, 1999). For example, Giray and Güngör (2015) tested two-factor leadership behavior scale of Northouse (2004) by conducting a survey on 270 white-color employees working in banking and manufacturing industry. Reliability and validation analyses results of their survey revealed that 20-item scale measuring two-factor leadership behavior-relations and task oriented leadership behaviors- represents leadership behaviors of managers working in banking and manufacturing industry, in Turkey. However, this survey revealed that rather comprehensive three-factor LBT model represents leadership behaviors of the managers operating in manufacturing and service industry in Turkey. So, construct validation and scale reliability of three-factor LBT model has been conducted for the first time in this study, which constitutes another strength of this survey.

5. CONCLUSION

This survey focused on the re-assessment of Yukl's (2002) leadership behavior taxonomy constructs. For the measurement of many of the variables considered in leadership research, construct validity is of the utmost importance because constructs or latent variables were typically measured (Schriesheim and Cogliser, 2009), and construct validity encompasses all evidence that bears on a construct and its measure (Gottfredson, 1997). In this survey, construct validation of the three-factor LBT model was provided by using content, convergent, discriminant and predictive (nomological) validity analyses which increase the strength of this study. The results of those validity and reliability analyses revealed that 23 items-three factors-LBT model has better fit for the managers of both manufacturing and service industry in Turkey. Although primary and well-known researches on that subject have been conducted in developed countries, this survey is conducted in a developing country, Turkey, which constitutes another strength of this study.

5.1. Limitations and Implications for Future Studies

This survey was conducted in an emerging country, which has a specific context and culture settings. So, this survey should be repeated in different culture settings, such as in a developed country, to enhance the generalizability of 23 item-scale representing three factor LBT model. Moreover, in further surveys, contextual factors, such as demographic variables, hierarchical level, organizational and industrial characteristics, work functions, and environmental stability should be considered. Antonakis et al. (2003) argue that contextual factors like gender, environmental risk and leader hierarchical level could theoretically affect the factor structure of leadership behavior scale.

The results of this survey indicate that the current version of the LBT scale is valid and reliable instrument that can adequately measure three components Yukl's theory of Leadership Behavior Taxonomy. Although 23 items-three factor LBT Scale involves an extended leadership behavior aspects, even any leadership survey instrument it never promises to account for all possible leadership dimension. It just represents the simplification of leadership behaviors for better and smooth understanding.

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Appendix: The items of Leadership Behavior Taxonomy

Dimensions	Items	
Task-Oriented Leadership Behavior	(1) Organize work activities to improve efficiency ***(Eliminated-CFA)***	
	(2) Plan short term operations ***(Eliminated -Reliability Analysis)***	
	(3) Assign work to groups or individuals	Planning
	(4) Clarify role expectations and task objectives	Clarifying
	(5) Explain rules, policies, and standard operating process	Clarifying
	(6) Direct and coordinate the activities of unit	Monitoring
	(7) Monitor operations and performance ***(Eliminated-CFA)***	
	(8) Resolve immediate problems that would disrupt the work ***(Eliminated-EFA)***	
	(9) Emphasize the importance of efficiency, productivity, and quality ***(Eliminated-EFA)***	
	(10) Set high standards for unit performance ***(Eliminated-EFA)***	
Relations-Oriented Leadership Behavior	(11) Provide support and encouragement	Supporting
	(12) Express confidence that people can attain challenging objectives	Supporting
	(13) Socialize with people to build relationships ***(Eliminated-CFA)***	
	(14) Recognize contributions and accomplishments	Recognizing
	(15) Provide coaching and mentoring	Developing
	(16) Consult with people on decision affecting them	Recognizing
	(17) Keep people informed about actions affecting them ***(Eliminated-CFA)***	
	(18) Help resolve conflicts	Developing
	(19) Use symbols, ceremonies, rituals, and stories to build team identity ***(Eliminated-EFA)***	
	(20) Lead by example and model exemplary behavior	Developing
Change-Oriented Leadership Behavior	(21) Interpret events to explain the urgent need for change	Implementing change
	(22) Study competitor and outsiders to get ideas for improvements	Increasing Innovation & Learning
	(23) Envision exciting new possibilities for the organization ***(Eliminated-CFA)***	
	(24) Encourage people to view problems or opportunities in a different way	Influencing Culture
	(25) Develop innovative new strategies linked to core competencies	Developing Vision
	(26) Encourage and facilitate innovation and entrepreneurship by others	Increasing Innovation & Learning
	(27) Encourage and facilitate learning by individuals and teams	Increasing Innovation & Learning
	(28) Experiment with new approaches	Developing Vision
	(29) Build a coalition of key people to get change approved	Implementing change
	(30) Form task forces to guide implementation of change	Implementing change
	(31) Make symbolic changes that are consistent with a new vision or strategy	Influencing Culture
	(32) Empower people to implement new strategies	Increasing Innovation & Learning
	(33) Announce and celebrate progress in implementing change	Implementing change

Source: Adopted from Yukl (2002). *Leadership in Organizations.* Fifth Edition, Prentice Hall Inc., New Jersey.