

## Reliability and Validity of the Trichotomous Achievement Goal Model in an Elementary School Physical Education Setting

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### Suggested Citation:

Agbuga, B. (2009). Reliability and validity of the trichotomous achievement goal model in an elementary school physical education setting. *Egitim Arastirmalari-Eurasian Journal of Educational Research*, 37, 17-31.

### Abstract

*Problem Statement:* The trichotomous model has been applied widely in academic and university settings but little is known about its utilization in physical education settings; therefore, it seems reasonable to study the efficacy of the trichotomous achievement goal model in elementary school physical education settings.

*Purpose of Study:* The purpose of this study is to examine whether the trichotomous achievement goal model utilized with high school and university undergraduate students might also be applied to elementary students in physical education settings.

*Methods:* Participants included 158 students (68 boys and 90 girls) in grades 3-6 enrolled in a rural school district located in south-central Texas. Participants came from a public elementary school within the district. Their ages ranged from 8-12 years. Students' mastery, performance-approach, and performance-avoidance goals were assessed using a 15-item questionnaire. The factorial validity of the models and internal consistency reliability were tested with confirmatory factor analysis and tests of internal consistency. Data were analyzed by AMOS 5.0 and SPSS 11.5.

*Findings and Results:* After some modifications, the results indicated that all indices ( $\chi^2/df = 1.09$ , CFI = .99, NNFI = .98, and RMSEA = .02) represented an excellent fit between the three-factor model and the data, with factor loadings ranging from .40 to .84. Cronbach's alphas for the three scales were .74, .85, and .71, respectively, indicating acceptable internal

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consistency. Reliability and validity analyses confirmed the existence of the three-factor achievement goal model in elementary school physical education, which is consistent with findings reported in the academic and university settings and other physical education settings. Results of this study revealed that the trichotomous achievement goal model fit the data well and demonstrated satisfactory psychometric properties.

*Conclusions and Recommendations:* Given that reliability and validity analyses produced valid scores, the trichotomous achievement goal model is applicable to elementary school physical education settings. Future researchers, however, might examine and assess other forms of reliability and validity in different educational settings and with students from more diverse backgrounds.

**Keywords:** Achievement goals, confirmatory factor analysis, elementary school, physical education

Achievement goals are defined as the purposes students perceive for engaging in achievement-related behaviors, and the meanings they ascribe to those behaviors (Ames, 1992; Dweck, 1986; Maehr, 1983; Nicholls, 1989). They are also defined as a cognitive-dynamic focus of competence-relevant behavior (Elliot, 1997). Elliot and McGregor (2001) claim that competence may be defined according to whether one has acquired understanding or mastered a task (an absolute standard), improved one's performance or fully developed one's knowledge or skills (an intrapersonal standard), and performed better than others (a normative standard). In other words, achievement goals are concerned with how individuals approach, experience, and perform in achievement settings as well as with the reasons people want to achieve what they achieve.

Over the past two decades, achievement goals and their cognitive, affective, motivational, and behavioral correlates among students have been examined extensively in a variety of achievement settings, including classrooms and physical education classes (Ames, 1992; Anderman & Maehr, 1994; Eren, 2009; Kaplan & Maehr, 1999; Solmon, 1996; Xiang & Lee, 2002). Achievement goal research in the domain of sports and physical education has primarily focused on two major goals (i.e., the dichotomous model): mastery and performance (Ames 1992; Ames & Archers, 1987, 1988). These two goals have been alternatively labeled task orientation and ego orientation (e.g., Maehr & Nicholls, 1980; Nicholls, 1989), learning goals and performance goals (e.g., Dweck, 1986; Elliot & Dweck, 1988), and mastery goals and ability goals (e.g., Ames, 1984; Butler, 1992).

Mastery goals focus on learning, improving, and mastering skills, whereas performance goals concentrate on social comparison and the demonstration of competence relative to others. In performance goals, ability is judged by doing better than others or achieving success with little effort because success is based on social comparison. Research focusing on these two types of goals reveals two things. Mastery goals are associated with adaptive motivational patterns such as showing

intrinsic interest in learning, displaying positive attitudes toward school, and believing that success is caused by effort. Performance goals are associated with less adaptive motivational patterns such as avoidance of challenging tasks and attributing success to ability. For a more in-depth review, see Chen (2001).

Previous research has also indicated that the achievement goal model has been adapted and used successfully for elementary physical education, yielding reliable and valid data (Xiang & Lee, 1998; Xiang, Lee, & Solmon, 1997). For example, guided by both achievement goal theory and expectancy value theory, Xiang and associates examined the relationships among achievement goal orientations, expectancy beliefs, task values, and elementary school children's motivation in physical education as a general subject area (Xiang McBride, & Guan, 2004) and in running as a specific activity (Xiang McBride, & Bruene, 2004). These research results suggest that achievement goal research might profitably be extended downward to at least age 9.

Recently, Elliot and his colleagues (Elliot, 1997; Elliot, 1999; Elliot & Church, 1997; Elliot & Harackiewicz, 1996) have proposed a trichotomous, approach-avoidance achievement goal model because a number of studies employing the dichotomous model revealed some mixed findings regarding performance goals and student motivational outcomes. Some researchers (e.g., Ames, 1992; Butler, 1992; Elliot & Church, 1997; Elliot & Dweck, 1988) found that performance goals elicit negative or maladaptive processes and outcomes, whereas other researchers (e.g., Elliot & Harackiewicz, 1996) indicated that performance goals generate adaptive achievement behavior (e.g., striving to do better than others). For example, Ames (1992) reported that performance goals were related to maladaptive motivational patterns such as low persistence in the face of difficulty and the use of less effective or superficial learning strategies. However, Harackiewicz, Barron, Carter, Lehto, and Elliot (1997) found that performance goals were positively associated with academic performance among college students. Given that performance goals are not able to fully account for the mixed pattern of results from these studies, further differentiation among performance goals may be essential (Guan, McBride, & Xiang, 2007).

Elliot and his colleagues (e.g., Elliot, 1999; Elliot & Church, 1997; Elliot & Harackiewicz, 1996) developed a three-factor model that includes the approach and avoidance motivation theory mentioned earlier. In their trichotomous model, the construct of mastery goals remains the same as in the dichotomous model. The construct of performance goals, however, is divided into approach and avoidance goals. Performance-approach goals are defined as focusing on the attainment of favorable judgments of competence, while performance-avoidance goals focus on avoiding unfavorable judgments of competence (Church, Elliot, & Gable, 2001). The approach-avoidance distinction is a critical element to understanding the relationship between achievement goals and related cognitive, affective, and behavioral responses. Harackiewicz, Barron, Pintrich, Elliot, and Thrash (2002) stated, "At a logical level, this distinction is a key premise of the multiple goal perspective, and accepting this distinction implies the need to revise goal theory to include both types of performance goals" (p.639). Because of the division of the

performance goal construct, the trichotomous model is assumed to clarify the role performance goals play in student motivational patterns.

Within the trichotomous model, Elliot and Church (1997) developed an 18-item questionnaire to assess mastery goals (e.g., "I want to learn as much as possible from my university classes"), performance-approach goals (e.g., "It is important for me to do better than other students in my university classes"), and performance-avoidance goals (e.g., "I wish my university classes were not graded"). The questionnaire uses a 7-point Likert scale ranging from 1 (not at all true of me) to 7 (very true of me). The results from a principle components factor analysis indicated that three separate goal orientations were distinguishable in an academic setting. Elliot and Church (1997) also reported that reliability coefficients (Cronbach's alphas) for the mastery, performance-approach, and performance-avoidance subscales were .89, .91, and .77, respectively. Later, Elliot (1999) revised the 18-item questionnaire by replacing a performance-avoidance goal item ("I wish my university classes were not graded") with a new item ("My goal for this class is to avoid performing poorly.") When compared to the initial questionnaire, the revised questionnaire demonstrated greater face value and more satisfactory psychometrics of the measures. Analysis of test validity and internal consistency provides strong support for this modified trichotomous model.

To date, the three-factor trichotomous achievement goal model has been widely used in the academic domain. Research based on participants from the United States (e.g., Elliot, 1999; Elliot & Church, 1997; Midgley et al., 1998), England (Smith, Duda, Allen, & Hall, 2002), Israel (Levy, Kaplan, & Patrick, 2004), and Turkey (Ağbuğa & Xiang, 2008; Akın & Çetin, 2007; Eren, 2009) all support the three-factor model in academic and university settings. However, there is limited research in the domain of sport and physical education, mostly done with French students (Cury, 2000; Cury, Da Fonseca, Rufo, Peres, & Sarrazin, 2003; Cury, Elliot, Sarrazin, Da Fonseca, & Rufo, 2002). Cury (1999), for example, developed an approach and avoidance achievement goal instrument adapted from Elliot (1997) and Elliot and Church (1997). The instrument consists of 15 questionnaire items with responses on a 5-point Likert scale ranging from 1 (Don't agree at all) to 5 (Completely agree); it has been reported as valid and reliable in sport and physical education settings. Recently, Guan et al. (2007) adapted achievement goal instruments from Elliot (1997), Elliot and Church (1997), and Elliot and McGregor (2001) to examine whether the trichotomous and 2\*2 achievement goal models were appropriate in high school physical education settings. Their results showed that the trichotomous achievement goal model provided a poor fit to the data (CFI = .84, GFI = .82, NNFI = .81, and RMSEA = .09), although Cronbach's alpha coefficients indicated acceptable reliability.

None of these studies explore the efficacy of the trichotomous achievement goal model in elementary school physical education settings. It seems reasonable to do so. This study, therefore, was designed to study whether the trichotomous achievement goal model utilized with high school and university undergraduate students might also be applied to elementary school students in physical education settings. Particularly, the factorial validity and internal consistency reliability of the Elliot

(1999) three-factor of achievement goals were tested to determine if this model is a good fit to a sample of students in elementary physical education classes.

## Method

### *Participants*

Participants included 158 students (68 boys and 90 girls) in grades 3-6 enrolled in a rural school district located in south-central Texas. Participants came from a public elementary school within the district. Ages ranged from 8-12 years. Racial and ethnic distribution for participants consisted of 76.6% African-American, 17.1% Hispanic-American, 5.1% Caucasian, and 1.3% not reported. The student population of the school district consisted of children from families of lower to middle socio-economic status. Approximately 90% of the students in the school were eligible for free or reduced lunch. Participation in the study was voluntary and permission from the institution, parents, and children was obtained.

### *Instrumentation*

Students completed 15 items adapted from Elliot and Church (1997). These items were prefaced with the heading, "In my physical education classes..." They reflected three achievement goals: mastery, performance-approach, and performance-avoidance. Students rated each item on a 5-point Likert scale ranging from 1 (Not at all true) through 5 (Very true). Examples of the five items assessing mastery goals are, "I try to learn as much as possible," and "I learn something that is fun to do." Examples of the five items assessing performance-approach goals are, "I can do better than my friends," and "Others cannot do as well as me." The five items assessing performance-avoidance goals included, "I do not look like that I cannot do activities," and "Other children do not think that I am bad in activities."

Several steps were taken to preserve the validity and reliability of these measures with elementary school children. First, a panel of three professional pedagogues in an American university evaluated all questionnaire items to make sure that elementary children understand the items. Pedagogues found no inconsistencies. Second, students were all pilot-tested for reading level and response scale prior to data collection with a sample of 50 nonparticipating students from grades in their physical education classes. Students raised no questions while completing the questionnaires. Third, a confirmatory factor analysis (CFA) was conducted on items measuring students' achievement goals to test for the three distinct types of achievement goals (mastery, performance-approach, and performance-avoidance) proposed by the trichotomous model.

### *Procedures*

After obtaining institutional and school district approval and informed consent from the participants, all data were collected during the spring semester of 2006. The questionnaire was administered by the researcher to students during regularly

scheduled physical education classes. Each item was read aloud to the students. They were encouraged to answer as truthfully as they could and to ask questions if they had difficulty understanding instructions or items in the questionnaire. They were also informed that their teachers would not have access to their responses. To ensure the independence of their responses, the researcher had students spread out so that they could not see one another's responses. The questionnaire took approximately 30 minutes to administer.

### *Data Analysis*

Using Analysis of Moment Structures (AMOS) Version 5.0 (AMOS 5.0; Arbuckle, 2003), confirmatory factor analysis (CFA) was conducted on items measuring achievement goals to examine factorial validity. CFA is a statistical technique used to verify the factor structure of a set of observed variables. CFA allows the researcher to test the hypothesis that a relationship between observed variables and their underlying latent constructs exists. When using CFA, the chi-square statistics assess the absolute fit of the model, but it is sensitive to sample size. As a result, a variety of fit indexes is suggested to evaluate the fit of the specified model(s) (Jöreskog & Sörbom, 1993). They include comparative fit index (CFI), Bentler and Bonnett's non-normed fit index (NNFI), root mean square error of approximation (RMSEA), and ratio of chi-square to degrees of freedom. CFI and NNFI exceeding .90 are generally considered to indicate a good fit; scores exceeding .95 are considered to indicate an excellent fit (Hatcher, 1994; Hu & Bentler, 1995). Additionally, a RMSEA of less than .10 is considered indicative of an adequate fit; less than .05 is considered to an excellent fit (Browne & Gudeck, 1993). Finally, the chi-square to degrees of freedom ratio should be less than 3.0 for an adequate fit (McIver & Carmines, 1981).

Cronbach's alpha coefficients were calculated to examine internal consistency of test scores for each of the three achievement goal subscales. Many statisticians (e.g., Cronbach, 1951; DeVellis, 1991; Kline, 1998; Nunnally & Bernstein, 1994) agree that internal consistency reliability is acceptable if a Cronbach alpha value is greater than .70. This guideline for the acceptable alpha value is employed in this study.

## **Results**

The results of descriptive statistics are presented in Table 1. The mean scores of the mastery, performance-approach and performance-avoidance goals were all above the midpoint (i.e., 3) of the scales, suggesting that students in this study endorsed all three achievement goals.

**Table 1**  
*Descriptive Data for Achievement Goals*

	<i>M</i>	<i>SD</i>	Range
Achievement Goals			
1. Mastery Goals	4.20	.78	1.00-5.00
2. Performance-Approach	3.05	1.15	1.00-5.00
3. Performance-Avoidance	3.40	.97	1.00-5.00

A confirmatory factor analysis (CFA) was conducted to test for the three distinct types of achievement goals (mastery, performance-approach, and performance-avoidance) proposed by the trichotomous model. The results indicated that all indices ( $\chi^2/df = 1.57$ , CFI = .92, NNFI = .90, and RMSEA = .06) represented an acceptable fit between the three-factor model and the data (see Table 2). However, for the fit to be excellent, the RMSEA should be less than .05 and CFI and NNFI should be higher than .95. To improve the model fit, two steps were taken. First, an examination of the factor loadings revealed that the item, "I do not look like that I cannot do activities," loaded weakly on the performance-avoidance goal with a factor loading of .36. Factor loadings, however, should be equal or larger than .40 (Clark & Watson, 1995). Therefore, this item was removed.

Second, modification indices were examined. The examination of modification indices provides a guide for path additions to the model (Kline, 1998). If a modification index between two items is high in relation to other modification indices, then the addition of a path will improve the overall fit of the model. Based on the modification indices provided by AMOS, a path of covariance was added between error terms for the items, "Others cannot do as well as me" and "I am the only one who can do the play or activity." Both items measure the performance-approach goal and are characterized by social comparison. Another path of covariance was added between error terms for the items, "I try to learn as much as possible" and "I learn something that is fun to do." The two items reflect an emphasis on learning, which is the essence of the mastery goal. After these modifications, the final model revealed an excellent fit ( $\chi^2/df = 1.09$ , CFI = .99, NNFI = .98, and RMSEA = .02) with factor loadings ranging from .40 to .84 (see Table 2). Scales of mastery, performance-approach, and performance-avoidance goals were then constructed by averaging the items on the scales. Cronbach's alphas for the three scales were .74, .85, and .71, respectively, indicating acceptable internal consistency.

**Table 2***Fit Indices of the Trichotomous Achievement Goal Model (N = 158)*

Indexes	Trichotomous Model	
	Initial CFA	Final Revised CFA
$\chi^2/df$	1.57	1.09
CFI	.92	.99
NNFI	.90	.98
RMSEA	.06	.02

### Conclusions and Recommendations

In this study, the trichotomous achievement goal model was tested to determine whether the model might represent a good fit to elementary school physical education settings. Cronbach alpha coefficients and confirmatory factor analysis were used to assess internal consistency reliability and factorial validity of the scores produced by the three-factor achievement goal model.

Although the trichotomous achievement goal model has been widely used in academic contexts (Akın & Çetin, 2007; Elliot, 1999; Elliot & Church, 1997; Eren, 2009; Midgley et al., 1998; Smith, Duda, Allen, & Hall, 2002; Levy, Kaplan, & Patrick, 2004) and all research supports the three-factor model in academic and university settings, there are only a few studies in the sport and physical education setting. Cury (1999), for example, provided evidence for the validity and reliability of the scores from the instrument in sport and PE settings using French high school students (Cury 1999; Cury, 2000; Cury et al., 2003; Cury et al., 2002).

Results of this study revealed that the trichotomous achievement goal model fit the data well and demonstrated satisfactory psychometric properties. Remembering that factor loadings should be equal or larger than .40 (Clark & Watson, 1995; Raubenheimer, 2004), results of the current study indicated that all factor loadings (ranging from .40 to .84) were acceptable.

Cronbach's alpha coefficients were used to examine the internal consistency of test scores produced by the achievement goal model. The results showed that the internal consistency was acceptable, with alpha coefficients of .74, .85, and .71 for the mastery, performance-approach, and performance-avoidance goals, respectively. Many statisticians (e.g., Cronbach, 1951; DeVellis, 1991; Kline, 1998; Nunnally & Bernstein, 1994) conclude that the internal consistency is acceptable if a Cronbach



alpha value is greater than .70. Cronbach's alpha coefficients for the three achievement goals exceeded the minimum recommended value of .70, which indicates that the scores produced by the trichotomous achievement goal model had acceptable internal consistency in this population of elementary school students. Furthermore, all the fit indexes ( $\chi^2/df$ , CFI, NNFI, and RMSEA) in the model, after some modifications, were in the excellent range, suggesting that the trichotomous achievement goal model produced valid scores.

Consistent with the findings reported in academic and university settings (Elliot, 1999; Elliot & Church, 1997; Midgley et al., 1998) and physical education settings (Cury, 2000; Cury et al., 2003; Cury et al., 2002), reliability and validity analyses confirmed the existence of the three-factor achievement goal model in elementary school physical education. Results of this study revealed that the trichotomous achievement goal model fit the data well and demonstrated satisfactory psychometric properties. Given that reliability and validity analyses produced valid scores, the trichotomous achievement goal model is applicable to elementary school physical education settings. Future researchers, therefore, should integrate the distinction between approach and avoidance into an achievement goal framework when evaluating elementary students' achievement goal orientations in physical education settings.

The validation of the trichotomous achievement goal model makes an important contribution to physical education research because it offers a theoretically sound and methodologically valid and reliable test for assessing student achievement goals in elementary school physical education settings. Previous achievement goal research has mostly focused solely on academics. This study supports the appropriateness of using the instrument in elementary school physical education settings.

Overall, the reliability and validity of the scores produced by the trichotomous model were satisfactory with this sample of elementary school students in the context of physical education settings. Future researchers, however, might examine and assess other forms of reliability and validity in different educational settings and with students from more diverse backgrounds.

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## Üçlü Başarı Hedefleri Modelinin İlköğretim Beden Eğitimi Derslerindeki Geçerlilik ve Güvenirliliği

### (Özet)

*Problem Durumu:* Başarı hedefleri, öğrencilerin başarı ile ilgili davranışları nasıl gördüklerini ve bu davranışların anlamının ne olduğunu açıklanması şeklinde tanımlanabilir. Başarı hedefleri teorisi (Achievement Goal Theory), öğrencilerin başarısını değerlendirmek için onun temel başarı hedeflerinin belirlenmesinin önemini vurgular. Diğer bir deyişle, bu teori kişilerin başarı durumlarına nasıl yaklaştıklarını, deneyimlerini ve performanslarını tespit ettiği gibi aynı zamanda bu kişilerin neden başarılı olmak istediklerinin sebeplerini arar. Geçmiş 20 yılda, özellikle okul ortamlarında öğrencilerin başarı hedefleri ve bu hedeflerin motivasyonel davranışları arasındaki ilişkileri oldukça geniş incelenmiştir. Bu araştırmalar özellikle iki temel hedef üzerinde odaklanmıştır (ikili başarı modeli): Görev yönelimli hedefler ve performans yönelimli hedefler. Görev yönelimli hedefler öğrenme, ilerleme ve becerilerde uzmanlaşma üzerinde odaklanırken, performans yönelimli hedefler daha çok sosyal karşılaştırma ve başkalarına karşı yeterliliğin gösterilmesi üzerinde odaklanmıştır. Yapılan araştırmalar görev yönelimli hedeflerin derse olan ilgi, dersi öğrenme ve okula karşı olumlu duygular besleme ile ilgili olduğunu, performans yönelimli hedeflerin ise daha çok başarının yeteneğe dayalı olduğu ve çok çalışmadan başarı elde etme amacıyla ilişkisini tespit etmiştir. Halbuki, yapılan araştırmalar bu ikili başarı modelinin öğrencilerin başarılarını ve buna bağlı davranışlarının yeterli olmadığını göstermiştir. Bunun üzerine, üçlü başarı hedef modeli bilim adamları tarafından ortaya atılmıştır. Bu model içinde var olan görev yaklaşımli hedefler ikili başarı modelinde olduğu gibi aynı kalırken, performans yönelimli hedefler iki kısma ayrılmıştır: (a) Performans yaklaşımli hedefler ve (b) performans uzaklaşımli hedefler. Performans yaklaşımli hedeflere sahip olan öğrenciler diğer öğrencilerden daha başarılı olma istekleri üzerinde dururken, performans uzaklaşımli hedeflere sahip olan öğrenciler ise yetersizlik hissi karşısında kaçınmaya odaklanmıştır. Bu yaklaşımli-uzaklaşımli ayrım, öğrencilerin başarı hedefleri ile onların bilişsel, motivasyonel ve davranışsal yanıtları arasındaki ilişkileri de daha detaylı ve daha doğru anlamak için son derece önemlidir. Bu bilindiği için son on yılda üçlü başarı modeli üzerinde birçok araştırma yapılmış ve yapılmaya devam etmektedir. Ancak bu araştırmaların çoğu üniversite öğrencileri ve teorik dersler üzerinde yoğunlaşmıştır. Bu yüzden bu modelin beden eğitimi ve spor derslerinde kullanımı hakkında daha çok bilgiye ihtiyaç vardır. Sonuçta, ilköğretim beden eğitimi derslerini kullanarak üçlü başarı hedefi modelinin geçerliliğini ve güvenirliliği üzerinde yapılacak bu araştırma bir ilk olacaktır.

*Çalışmanın Amacı:* Bu çalışmanın amacı, lise ve üniversite düzeylerinde kullanılan üçlü başarı hedefi modelinin geçerlilik ve güvenilirliğini tespit ederek ilköğretim seviyesinde de kullanılıp kullanılmayacağını incelemektir.

*Yöntem:* Bu çalışmaya katılanlar, güney-merkez Teksas, ABD’de yaşayan bir ilköğretim okulunun 3., 4., 5., ve 6. sınıflarda okuyan 158 (68 erkek ve 90 kız) öğrencidir. Öğrencilerin yaşları 8 ve 12 arasında değişmektedir. Öğrencilerin görev, performans yaklaşımı ve performans uzaklaşımı hedefleri üçlü başarı hedef modeli anketi ile değerlendirilmiştir. Enstitü ve okul onayı alındıktan sonra bütün katılımcılardan ve ailelerinden izin belgesi alınmıştır. Bütün veriler bahar 2006 eğitim-öğretim yılında elde edilmiştir. Üçlü başarı hedef modelinin faktöryel geçerliliği (factorial validity), iç tutarlılık güvenilirliği (internal consistency reliability), doğrulayıcı faktör analizi (confirmatory factor analyses) ve içtutarlılık değer testleri ile yapılmıştır. Faktör analizi genellikle psikolojik ölçme aracı geliştirmek veya ölçme aracının temel aldığı var sayılan yapıyı test etmek amacıyla kullanılan bir analiz türüdür. Veriler AMOS 5.0 ve SPSS 11.5 istatistik programları kullanılarak analiz edilmiştir.

Doğrulayıcı faktör analizini kullanırken yapılan ki-kare istatistiği modelin kesin uyumunu değerlendirir. Ancak bu analiz katılımcı sayısına karşı hassastır. Bu nedenle diğer uyum indeksleri ele alınır. Bunlardan biri Bentler'in karşılaştırmalı uyum indeksi (the Bentler's comparative index) olarak da bilinen karşılaştırmalı uyum indeksi (comparative fit index- CFI), 0.00 ile 1.00 arasında değişen değerler almaktadır. .90 ve üzeri değerler modeli kabul edebileceğimiz değerlerdir. İndeksin .90 ve üzerinde çıkması veri grubundaki %90 oranındaki kovaryans, önerilen model ile açıklanabileceğini ifade eder. Diğer bir uyum indeksi de normlanmamış uyum indeksi, (Non-normed fit index-NNFI). NNFI’da CFI’da olduğu gibi 0.00 ile 1.00 arasında değişen değerler almaktadır. .90 ve üzeri değerler modeli kabul edebileceğimiz değerlerdir. Bir diğer uyum indeksi de yaklaşımın ortalama karekök değeridir (Root mean square of approximation-RMSEA). RMSE’in .05 ve daha düşük değerler alması iyi uyumun göstergesidir.

*Bulgular:* Bu çalışmanın sonunda bütün istatistiksel değerlerin ( $\chi^2/df = 1.09$ , CFI = .99, NNFI = .98, and RMSEA = .02) üçlü başarı hedefi modelinin veri ile uyumlu olduğu tespit edilmiştir. Üç başarı hedefinin (görev yönelimli, performans yaklaşımı ve performans uzaklaşımı) Cronbach alfa değerleri .74, .85 ve .71’dir. Bu istatistiksel sonuçlar, daha önce üniversite ve teorik derslerde yapılan araştırmalar ile paralellik göstermekte olup, ilköğretim beden eğitimi ve spor derslerinde de üçlü başarı hedef modelinin geçerliliğini ve güvenilirliğini onaylamıştır. Kısaca, bu çalışmanın sonuçları üçlü başarı modelinin alınan veri ile uyumlu olduğunu ve olumlu psikometrik özellikler göstermiştir.

*Sonuç ve Öneriler:* Bu çalışma üçlü başarı hedef modelinin geçerliliğini ve güvenilirliğini tespit etmiş ve bu modelin ilköğretim seviyesinde

uygulanabilirliğini kanıtlamıştır. Bu sonuçlar daha üst sınıflar kullanılarak ve beden eğitimi ve spor alanı dışında yapılan arařtırmalar ile paralellik göstermektedir. Hâlbuki gelecekte yapılması düşünölen arařtırmalar gerek farklı sosyo-ekonomik seviyeden gerekse farklı kültürel yapıdan gelen öđrencileri kullanarak öçlü başarı hedef modelinin geçerlilik ve güvenilirliğini tekrar tespit edebilirler. Ayrıca farklı eğitim kurumlarının (özel ya da devlet okulları gibi) kullanılması da öçlü başarı hedef modelinin geçerlilik ve güvenilirlik seviyesini arttırabilecektir. Yapılan bu çalışmada öđrencilerin cinsiyet ayrımına bakılmadı. Biliyoruz ki kız ve erkek öđrencilerin başarı motivasyonları ve/veya başarıyı algılayışları farklı olabilir. Bu farklılık eğitim kurumlarında öđretmenlerin ders planlarında gerekli düzenleme yapmalarına neden olabilir. Bu yüzden gelecekte yapılacak arařtırmalar, kız ve erkek öđrencilerin motivasyon farklılıklarını inceleyebilir.

*Anahtar Sözcükler:* Başarı hedefleri, doğrulayıcı faktör analizi, ilköğretim okulu, beden eğitimi,