

**DIMENSIONS OF PSYCHOLOGICAL CAPITAL: A CASE STUDY IN
TURKISH HARD COAL ENTERPRISE**

*PSİKOLOJİK SERMAYENİN BOYUTLARI: TÜRKİYE TAŞ KÖMÜRÜ
KURUMUNDA BİR VAKA ÇALIŞMASI*

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ABSTRACT: In today's business world, managers have a growing awareness that psychological capital is the most important type of capital that brings productivity, reproductivity and profitability to their organizations. The dimensions of psychological capital, including self-efficacy, optimism, hope and psychological resilience, are the factors that bring success to organizations. The aim of this study is to determine psychological capital dimensions of the underground miners employed by the Turkish Hard Coal Enterprise (TCMC) - Kozlu Establishment (Türkiye Taş Kömürü Kurumu (TTK) – Kozlu Müessesesi). In order to determine the psychological capital dimensions of the miners, a questionnaire was applied to 344 underground miners. Analyzes were made by using SPSS 22 and AMOS 24 package programs. Exploratory factor analysis and confirmatory factor analysis were used to determine the psychological capital dimensions of miners. According to the results of analyze, the psychological capital factors of the miners appear as hope and self-efficacy.

Key Words: Psychological capital (PsyCap), accident, miner, TCMC.

ÖZ: Yöneticiler günümüz iş dünyasında örgütlerine verimlilik, üretkenlik ve karlılık getiren en önemli sermaye türünün psikolojik sermaye olduğu konusunda artan bir farkındalığa sahiptir. Öz-yeterlilik, iyimserlik, umut ve psikolojik dayanıklılık dâhil olmak üzere psikolojik sermayenin boyutları, kuruluşlara başarı getiren faktörlerdir. Bu çalışmanın amacı, Türkiye Taşkömürü Kurumu (TTK) - Kozlu Müessesesi'nin (Turkish Hard Coal Enterprise (TCMC) - Kozlu Establishment) istihdam ettiği yeraltı madencilerinin psikolojik sermaye boyutlarını belirlemektir. Madencilerin psikolojik sermaye boyutlarını belirlemek için 344 yeraltı madencisine anket uygulanmıştır. SPSS 22 paket ve AMOS 24 programları kullanılarak analizler yapılmıştır. Madencilerin psikolojik sermaye boyutlarını belirlemek için keşfedici factor analiz ve doğrulayıcı factor analizi kullanılmıştır. Yapılan analizler sonucunda madencilerin psikolojik sermaye faktörleri umut ve öz-yeterlilik olarak belirmiştir.

Anahtar Kelimeler: Psikolojik sermaye (PsyCap), kaza, madenci, TTK.

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1. INTRODUCTION

Organizations carry out their activities using idea, skill, experience, social and psychological power of human resources. Employees' tendency of giving their accumulations and strengths to those organizations depends on the feeling of health and satisfaction level of them. It is therefore a priority for managers to be able to create a strong and supportive organizational culture with a high level of satisfaction and happy employees. He/she will want to give the leverage social and psychological know-how to the organization as much as the level of support and feelings he/she perceives as employees. Otherwise, the manager will not be able to make full use of this power with the inspections he has done and the measures he has taken. Because it is always possible to limit amount of the employees' potentials and performances they will spend for their organizations with their inner wills.

The most important capital for today's organizations is the human who adds merit, accumulation to the business processes and increases the competitive power. The intellectual skills, social and psychological knowledge accumulation potential can be considered as PsyCap. One factor that makes the manager important is fully awareness and distinction about employees' PsyCap capacities. Managers that know when and how an employee reacts will take their place in the top rankings. The manager who recognizes his/her employees' PsyCap will not lose energy and time with unrealizable or inapplicable strategies. Creating a strategy is a cost. Implementation of the generated strategy and its failure is an even greater cost. The people who formulate and implement the strategies and the PsyCap of these people are very important for the sustainability of the organizations.

PsyCap is generally accepted as an element consisting of four dimensions in the literature. Hope, optimism, resiliency and self-efficacy are variables that can be measured as PsyCap. In this study, the existence of PsyCap and its dimensions will be examined in TCMC (Türkiye Taş Kömürü Kurumu). For underground mining as a dangerous and risky industry, miners and the hope, optimism, self-efficacy and resiliency they have is more important than other sectors. Underground mining has a workplace that causes feelings of stress, anxiety, and fear. The results of targeted performance and efficiency will only be achieved by positive employees who are supported by a strong organizational culture.

2. THE CONCEPT OF PSYCHOLOGICAL CAPITAL

Human resources are very important for organizational success and efficiency and the best return on investment for sustainable competitive advantage (Luthans and Youssef, 2004: 143). Human resources, organizational performance

and competitive advantage equation can be created and this gives a new perspective on what organizational capital is. Compared to traditional physical, structural and financial resources, employees cannot be easily imitated by their existing competitors because they are human resources (Rus and Baban, 2013: 109-110).

Intellectual origins in economic science and human capital express the stock of knowledge, and skills that can be increased by experience or investments in employee training and education. The concept of social capital emerged from the science of sociology. Social capital is related to the accumulation of real or potential resources that are linked to the creation of a permanent network of relations. Simply put, human capital is related to ‘what you know’, and social capital is related to ‘who you know’, whereas psychological capital is related to ‘who you are’ and ‘who are you becoming’ (Newman, 2014: 121; Luthans et al., 2006: 388; Luthans, Youssef, Avolio, 2007: 20).

The positive psychology movement, which emerged as a result of the work of Seligman et al., in the late 1990s in order to restore the mission of the science of psychology to the realization of the abilities, strengths and potentials of the people, found a wide repercussion in the field of organizational behavior. Thus, studies in the field of positive psychology have led Luthans, who works in the field of organizational behavior and organizational psychology, to think about how this positive perspective can be adapted to organizations. Luthans pointed out that, with a positive approach at the micro level, the strengths and psychological capacities of employees in organizations can be improved, not static, to improve their performance. Thus, positive psychology has brought about an approach called “positive organizational behavior”, which aims to improve the performance in the workplace by trying to measure, develop and manage the psychological elements behind strengths instead of focusing on the weak points of the employees (Akçay, 2012: 124).

Traditional types of capital are necessary for organizations. But these are not sufficient for sustainable competitive advantage. Just like other types of capital are composed of certain components, i.e. traditional (financial, structural/physical, technological), human (explicit and implicit knowledge) and social (networks, norms/values and trust), positive psychological capital (PsyCap) also accommodates some basic capacities (Luthans and Youssef, 2004: 153). When considered in terms of classic capital types, PsyCap is defined as the ability of employees to carry their human, social and economic capital to the organization to

ensure efficiency (Eidet al., 2012; Bergheim et al., 2015: 28).Luthans et al. describe PsyCap operationally as follows (Luthans et al., 2006: 388):

“An individual's positive psychological state of development is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals, and when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success. To be included in this conception of PsyCap, (1) grounded in theory and research; (2) valid measurement; (3) relatively unique to the field of organizational behavior; (4) state-like (ie, relatively fixed and thus relatively fixed); and (5) have a positive impact on sustainable performance.”

Two trends promoted positive psychology. These are: positive organizational culture / science and positive organizational behavior that implement positivity and power-based management in the workplace. The first is the positive organizational culture (positive organizational scholarship). Positive organizational culture, based on the work of scientists at the University of Michigan, emphasizes positive organizational qualities that can enable the organization to survive in difficult times and improve its effectiveness. The second is positive organizational behavior. Positive organizational behavior emphasizes the measurable, developable and manageable psychological capacities that can be used in performance improvements in today's business environment and the strengths of positively focused human resources (Yıldız ve Örucü, 2016: 271).

When the developments in the management theory of psychological capital are examined, it is seen that the individual employees have the organizational success and the ability to perform and consist of four different elements (Eid et al., 2012: 55). When the literature on positive psychology is researched and analyzed extensively, the elements that represent this structure in the best way are hope (will or institutions and paths), activity (trust and belief in carrying out a task), flexibility (resilience) and optimism (positive expectation for the future). While these four elements are well known in positive psychology, they are ignored in the areas of organizational behavior, human resources management and human resource development. These elements constitute the most appropriate elements for positive organizational behavior. When they all come together, they are called psychological capital or PsyCap. The term psychological capital, has been chosen to go beyond the term human capital, which is expressed as the experience, training and tacit knowledge of the employees. As stated, in the PsyCap: who (psychological self) and who you may be (potential self) (Luthans, 2012: 2). The four dimensions of psychological capital are:

Self-efficacy: It is channeling one's motivation and cognitive resources in a way to control events in his life. Self-efficacy is the belief that one can solve the problems he faces in his life. It is not about how competent an individual is in his skills but on his belief in his own skills (Keleş, 2011:347).

Hope: Hope is to have the means of success that will enable one to achieve his goals and the power of will to realize this success. It is a cognitive attitude, which is the result of the activity of the individual in order to use alternative ways to achieve this success, while making a determined effort to achieve the goals successfully (Zeynel, 2018: 458).

Optimism: Optimism is considered as a more generalized form of self-confidence. It is a positive skill that enables the individual to realistically evaluate what he or she can or cannot accomplish, not to give up his ambition for success when faced with contradictions, and to get away from feelings of guilt, to collect courage and to develop good and positive expectations for the future (Kızrak vd, 2017: 802).

Psychological Resilience: It is defined as the capacity to recover from difficulties, failures and even positive changes that seem overwhelming (Oçak et al., 2016: 114). Psychological resilience is the positive psychological capacity needed to regenerate after the problems and problems experienced (Luthans, 2002: 702).

Psychological capital draws attention to the positive psychological development of an individual. It is a constellation of motivational and behavioral tendencies. Psychological capital is defined as a second order factor. For this reason, it enables employees to be motivated to achieve the goals, to recognize the ways of reaching the target, to reach their goals and to get rid of the inevitable regressions of the target quest (Caza et al., 2010: 54). In Figure 1, there is information obtained from literature reviews to synthesize the basic findings on the concepts related to PsyCap (Newman, 2014: 128).

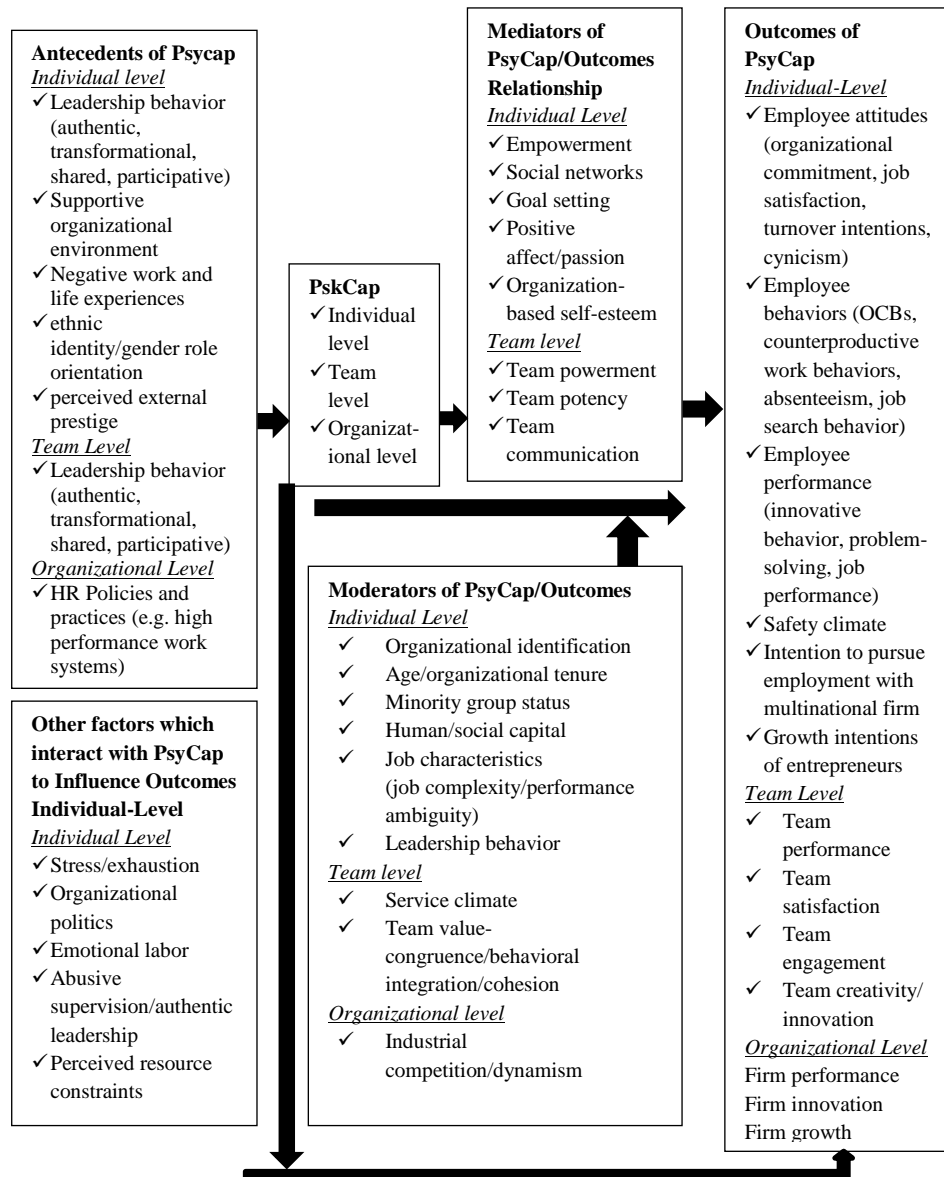


Figure 1: A Systematic Framework for Current and Further Research on Psychological Capital

Reference: Newman et al., "Psychological Capital: A Review and Synthesis", *Journal of Organizational Behavior*, 2014 p. 129.

For the strengthening of PsyCap, hope consists of both willpower and pathways, and therefore participants are first asked to set an important specific target. They are then asked to identify the real and potential obstacles that they may face in making efforts to achieve this goal. Finally, they are asked to determine how to solve the problems encountered. After individually setting goals and pathways at each stage of the training, participants share the solutions they have found, and then they receive feedback from the facilitator and mainly from small group members assigned to them. They receive constructive comments and important special recommendations. Peer group members help identify possible other obstacles that may be overlooked, and may propose pathways to achieve success by achieving goals. This process not only strengthens the hopes of the participants, but also creates optimism (triggering internal motives to achieve success and increasing possible positive expectations) and effectiveness. In addition to the success of the goal setting process in increasing the effectiveness, the participants see how successful the group is, and they are supported to learn in a conscientious manner. Employees who receive PsyCap training will have positive persuasion and positive feedback from their esteemed colleagues and facilitator trainer. The flexibility component in the training emphasizes the participants' awareness of their personal assets and how they can benefit from their personal assets when faced with distress. In addition, flexibility training focuses on how risks and barriers can be prevented to avoid problems that employees may face now or in the future (Luthans, 2012: 3).

The positive occurrence of PsyCap has proven to be open to employees' development and performance management. The organizations have a significant positive relationship with the PsyCap provided, the desired employee attitudes (organizational commitment, job satisfaction, psychological well-being), desired employee behavior (citizenship) and multiple performance criteria (self / supervisor assessments and purpose). In addition, there is a significant negative relationship between favorable structuring of PsyCap and unwanted employee attitudes (turnover intentions, anxiety, cynicism and work stress) and unwanted employee behavior (deviance) (Newman et al., 2011: 127).

Bill Gates described the human element as the company's most important asset, which went out of Microsoft's door every night to his home. With this definition, it creates the value of its employees with the types of capital they possess, and determines that they move Microsoft far beyond its competitors. The importance of human capital stems from the fact that it contains almost all of the

information in an organization, especially the implicit knowledge (Akçay, 2011: 91).

The meaning and value that employees place on the business environment are reflected in their performance. The importance that managers place on employees in risky, heavy and dangerous industry groups affects the productivity of employees by shaping their beliefs, motivation and performance. Employees are more optimistic, hopeful, resilient and have a high sense of self-efficacy in organizations where they are happy. These affections enable the organization to have a strong psychological capital.

Underground miners are more likely to be damaged by fatal injuries or occupational diseases than in other sectors (6 times). The rate of occupational diseases and non-fatal injuries of underground miners is 66% higher than that of workers in other occupations (Lancaster, 2011: 1). According to the Social Insurance Agency records in all employment sectors in Turkey, the rate of injuries due to accidents in underground mines is very high (Kucuker, 2006: 144). Because of the workplace climate, miners are in constant psychological and social interaction with their colleagues. It is also important to consider the socio-psychological structure that emerges around the workplace in order to ensure the high performance of the miners and the sustainability of the organization.

3. METHODS OF THE RESEARCH

In this research, questionnaire technique was used in TCMC – Kozlu Establishment to collect data. PsyCap scale was obtained from the study performed by Luthans et al. (2007) and adapted from the study performed by Çetin and Basım (2012). The Cronbach's Alpha value of the scale for this research was found as 0,914.

The sample of the research includes 344 miners working in TCMC – Kozlu Establishment, and they were randomly selected. The aim of the research is to reveal the dimensions of PsyCap of the miners. Within this scope, the variables constituting the PsyCap dimensions are analyzed under Factor Analysis. Then independent sample t-test was applied to determine if the dimensions of PsyCap had any difference between miners with/without history of accidents.

The hypotheses of the study are set up as follow:

H₁: Hope is a dimension of PsyCap in TCMC – Kozlu Establishment.

H₂: Resiliency is a dimension of PsyCap in TCMC – Kozlu Establishment.

H₃: Efficacy is a dimension of PsyCap in TCMC – Kozlu Establishment.

H₄: Optimism is a dimension of PsyCap in TCMC – Kozlu Establishment.

4. DATA ANALYSIS AND FINDINGS

This section presents demographic variables and PsyCap dimensions of the miners in TCMC – Kozlu Establishment. Also it is analyzed if there is a meaningful difference between PsyCap dimensions of the miners with/without history of accidents in TCMC – Kozlu Establishment. In order to test the reliability of the scales used in the study, Cronbach’s Alpha values were examined. The reliability of the psychological capital scale is very close to 1 and it is determined as ,914. The PsyCap dimensions of the miners were analyzed with factor analysis and according to the result of factor analysis four dimensions were appeared. These are hope, optimism, resiliency and efficacy. Independent sample t-test was applied to clarify if there is any difference between the PsyCap dimensions of the miners with/without history of accidents.

Table 1: Demographic Variables of Miners Working in TCMC – Kozlu Establishment

| Demographic Variables | Frequencies | Percentage (%) | Cumulative Percentage (%) |
|-----------------------|-------------|----------------|---------------------------|
| Age | | | |
| 18-25 | 13 | 3,8 | 3,8 |
| 26 – 33 | 102 | 29,7 | 33,44 |
| 34 – 41 | 160 | 46,5 | 79,9 |
| 42 + | 69 | 20,1 | 100 |
| Marital Status | | | |
| Married | 309 | 89,8 | 90,3 |
| Single | 35 | 10,2 | 100 |
| Education | | | |
| Primary | 84 | 24,4 | 24,4 |
| High School | 224 | 65,1 | 136,6 |
| University | 36 | 10,5 | 100 |
| Cigarette | | | |
| Yes | 196 | 57 | 57 |
| No | 148 | 43 | 100 |
| Time | | | |
| 1 year and less | 13 | 3,8 | 3,8 |
| 1-4 year | 21 | 6,1 | 9,9 |
| 5-10 year | 178 | 51,7 | 61,6 |
| 11-14 year | 13 | 3,8 | 65,4 |
| 15 + | 119 | 34,6 | 100 |
| Section | | | |
| Production worker | 166 | 48,3 | 48,3 |

| | | | |
|---------------------------------|-----|------|------|
| Prep worker | 28 | 8,1 | 56,4 |
| Well services | 130 | 37,8 | 94,7 |
| Others | 20 | 5,8 | 100 |
| Unionism | | | |
| Yes | 339 | 98,5 | 98,5 |
| No | 5 | 1,5 | 100 |
| Union Mission | | | |
| Regular member | 334 | 97,1 | 97,1 |
| Shop Steward | 4 | 1,2 | 98,3 |
| Branch Representative | 3 | ,9 | 99,1 |
| Union Employees | 3 | ,9 | 100 |
| Accident | | | |
| Yes | 219 | 63,7 | 63,7 |
| No | 125 | 36,3 | 100 |
| Possibility of Accidents | | | |
| Very low | 38 | 11,0 | 11,0 |
| Low | 108 | 31,4 | 42,4 |
| High | 153 | 44,5 | 86,9 |
| Very high | 45 | 13,0 | 100 |

According to table above, most of underground miners working in TCMC – Kozlu Establishment are between the age of 34-41 and married. %65,1 of them are graduated from high school, only %10,5 of them are graduated from university. %48,3 of them are production worker. Nearly all of the miners are union member in TCMC. %63,7 of the members had an accident in the workplace. %44,5 of them think about the possibility of accident in high degree.

Table 2: KMO Value and Bartlett's Test of Data Set

| | |
|--|----------|
| "KMO Measure of Sampling Adequacy" | ,933 |
| "Bartlett's Test of Sphericity" Approx. Chi-Square" | 3842,370 |
| df | 276 |
| Sig. | ,000 |

The value of Kaiser-Meyer-Olkin Measure shows the measure of covariance which are created by variables. If the value is close to 1,00 that means our data is convenient for factor analysis. Our value is 0,933 (Sig.=,000). According to table Bartlett's test is meaningful (Sig.=,000). That means there are high correlations between the variables and so our data set is suitable for factor analysis (Kalaycı, 2006: 327).

The factor analysis result shows that PsyCap has the four-dimensional

construction. The first component explains 38,500 percent of the first factor, second component explains 7,184 percent of the second factor, third component explains 5,697 percent of the third factor and the last one explains 4,810 percent of the fourth factor. It was found that the scale explains 56,191 percent of PsyCap of miners in TCMC. According to most of resource the scale must not to be under %50.

Table 3: Dimensions of PsyCap at TCMC - Kozlu Establishment

| EXPRESSIONS | Factor Load | Explained Variance | Eigenvalues |
|--|-------------|--------------------|--------------|
| Factor 1: Self-Efficacy | | 38,500 | 9,240 |
| 38. "I feel confident in contacting people outside the organization (suppliers, consumers, etc.) to discuss problems." | ,778 | | |
| 39. "I can think of many ways to achieve my current business goals." | ,776 | | |
| 37. "I usually deal with the challenges of my work in some way." | ,721 | | |
| 36. "I am confident in contributing to the discussions on the organization's strategy." | ,717 | | |
| 31. "I am confident in trying to find a solution to a long-term problem." | ,687 | | |
| 28. "I feel I can handle a lot of things in my job." | ,574 | | |
| 35. "I am following strictly my business objectives." | ,531 | | |
| 30. "I trust myself in explaining my work area in the meetings attended by management." | ,524 | | |
| 29. "I always see the good side of my work." | ,511 | | |
| 32. "At this moment, I see myself as very successful in my work." | ,506 | | |
| 27. "If I find myself in a blockage while working, I can think of many ways to get rid of it." | ,474 | | |
| Factor 2: Hope | | 7,184 | 1,724 |
| 19. "I am confident in determining my goals / objectives in my field of study." | ,799 | | |
| 20. "I can overcome difficult times in my work because I have experienced difficulties before." | ,796 | | |
| 21. "There are many ways to solve any problem." | ,783 | | |
| 18. "I trust myself in providing information to a group of colleagues." | ,703 | | |
| 22. "Generally, I can handle the stressful things in my work" | ,599 | | |

| | | | |
|---|------|--------------|--------------|
| calmly.” | | | |
| 17. “At this time, I fulfill my business objectives that I set for myself.” | ,408 | | |
| Factor 3: Optimism | | 5,697 | 1,367 |
| 34. “I approach my job as there is a charity in everything.” | ,737 | | |
| 33. “I’m optimistic about what will happen to me in the future about my job.” | ,716 | | |
| Factor 4: Resiliency | | 4,810 | 1,155 |
| 26. “If something goes wrong for me in my job, it goes like that.” | ,705 | | |
| 23. “When I encounter something wrong with my job, I find it difficult to avoid him.” | ,683 | | |
| 24. “When I have ambiguities in my work, I always want the best.” | ,503 | | |
| 16. “In this work, things never work the way I want.” | ,460 | | |
| 25. “I am following strictly my business objectives.” | ,402 | | |

According to the results of Rotated Component Matrix all factor loads are over 0,40. We can say that our PsyCap scale is valid and reliable and useable for research (Erkuş ve Fındıklı, 2013: 309). In order to be able to name the factors, we are grouping the big factor weights under a variable. 38, 39, 37, 36, 31, 28, 35, 30, 29, 32, 27. variables have the greater weight under the first factor. All these variables are related to efficacy. So we can title this factor as efficacy. 19,20,21,18,22,17. variables have the greater weight under the second factor and we can title this one as hope. 33, 34. variables have the greater weight under the third factor and we can title this one as optimism. 26,23,24,16,25. variables have the greater weight under the last factor. We can title this one as resiliency.

Table 4: Adaptation Indices of Psychological Capital Measurement Models

| Compliance Measures | Good Compliance Measures | Compliance Values of Measurement Model |
|--|---|---|
| “Relative Chi Square Index” c^2 /sd | ≤ 3 (perfect fit) (Kline, 2005) | 2,061 |
| “Root Mean Square Error of Approximation”(RMSEA) | ≤ 0.07 (Steiger, 2007) | 0,056 |
| “Goodness-Of-Fit Index”(GFI) | ≥ 0.90 (Schumackerve Lomax, 1996, Hooper et al., 2008) | 0,940 |
| “Adjusted Goodness-Of-Fit Index”(AGFI) | $0,90 \leq GFI \leq 1$ | 0,914 |
| “Normed Fit Index” (NFI) | ≥ 0.90 (Kelloway, 1989; Thompson, 2004) | 0,943 |
| “Comparative Fit Index”(CFI) | ≥ 0.90 (Hu veBentler, 1999; TabachnickveFidell, 2001) | 0,969 |

In this study, the structural validity of the psychological capital measurement model, whose dimensions were determined by exploratory factor analysis, was examined. To test the construct validity of the scale, confirmatory factor analysis was performed by using AMOS 24 program. In order to evaluate the measurement model, compliance favors were examined and the factor loads of each observed variable were determined. The goodness of fit of the measurement models used in the study is shown in Table 4. It is seen that the related values are above the good compliance values accepted in the literature.

Table 5: Statistics of the Psychological Capital Measurement Model

| | Factors | Regression Weights | Standardized Regression Weights | S.E. | C.R. | P |
|----|-----------------|--------------------|---------------------------------|-------|--------|--------------|
| 32 | ← Self-Efficacy | 1,000 | 0,717 | | | |
| 29 | ← Self-Efficacy | 0,993 | 0,600 | 0,093 | 10,656 | 0.000 |
| 35 | ← Self-Efficacy | 0,999 | 0,743 | 0,076 | 13,233 | 0.000 |
| 30 | ← Self-Efficacy | 0,997 | 0,708 | 0,079 | 12,601 | 0.000 |
| 28 | ← Self-Efficacy | 0,989 | 0,703 | 0,079 | 12,512 | 0.000 |
| 31 | ← Self-Efficacy | 1,098 | 0,815 | 0,076 | 14,465 | 0.000 |
| 36 | ← Self-Efficacy | 1,004 | 0,708 | 0,080 | 12,598 | 0.000 |
| 37 | ← Self-Efficacy | 0,945 | 0,679 | 0,079 | 11,935 | 0.000 |
| 38 | ← Self-Efficacy | 0,917 | 0,681 | 0,076 | 12,041 | 0.000 |
| 39 | ← Self-Efficacy | 0,943 | 0,664 | 0,080 | 11,770 | 0.000 |
| 19 | ← Hope | 1,000 | 0,826 | | | |
| 20 | ← Hope | 1,019 | 0,848 | 0,058 | 17,665 | 0.000 |
| 21 | ← Hope | 0,981 | 0,779 | 0,062 | 15,888 | 0.000 |
| 22 | ← Hope | 0,799 | 0,608 | 0,068 | 11,668 | 0.000 |
| 18 | ← Hope | 0,927 | 0,748 | 0,049 | 18,796 | 0.000 |

Table 5 shows the statistical analysis of the psychological capital measurement model. It is observed that the factor loadings of the observed variables that reveal the dimension of self-efficacy and hope expressing psychological capital are over 0.60. Values of 16, 23 and 26 with a factor load below 0.60 were excluded from the analysis. Factor 4 was discarded by subtracting the 24th value as 1 value could not be present under one factor. Factor 3 was also taken because there could not be 2 values under one factor.

The psychological capital dimensions of miners working in TCMC – Kozlu Establishment were found to consist of two factors. Factor1: 28, 29, 30, 31, 32, 35, 36, 37, 38, 39. questions. The factor represents self-efficacy. Factor 2: 18, 19, 20, 21, and 22 questions. The second factor represents the hope dimension of the miners' psychological capital. As a result of the confirmatory factor analysis of the

4-dimensional scale, which revealed the psychological capital of the employees, it was concluded that TCMC – Kozlu Establishment consists of 2 dimensions.

5. RESULT

The existence and sustainability of the organizations is directly proportional with production elements they have and also qualities of these production elements. Capital approach for organizations is quite differentiated from the known size. In finance and accounting field capital concept is used as an expression of money and investments. Nowadays capital concept can be used as an expression of different entities and power like human capital, social capital, and psychological capital.

Labor as one of the most important production element has taken an efficient and effective place in production process by managing of human resources professionalism. Human resource, including competition as an investment source, has found deserved importance and value from then Elton Mayo. Extent of hope, optimism, resiliency and self-efficacy that employees have is the basic building block in safety critical organizations like underground mining. This ability which expressed as miner's PsyCap is one of the determining power for performance.

Psychological capital (PsyCap), in the sense of "who you are" and "who you are becoming", differs from general types of capital (financial capital, technological capital, human capital, social capital, etc.) and is critical for organizational efficiency. The physical and psychological health of the employees and positive psychological capital are the basic elements for organizational success and sustainability. Underground mining has many features that make miners anxious, unhealthy, depressive and inefficient. The size and incidence of occupational diseases and the likelihood of fatal accidents are high in underground mining. That's way optimism, hope, self-efficacy and psychological resilience of the employees in risky sectors are even more important. For these reasons, managers working in the heavy industry especially in the risky areas should pay utmost attention to the psychological capital of the employees.

In this study factor analysis was applied in order to determine the presence of four dimension of PsyCap in TCMC – Kozlu Establishment. According to the results of analyze, the psychological capital factors of the miners appear as hope and self-efficacy in TCMC – Kozlu Establishment. As a dangerous and risky industry, frequency of accidents in underground mining is very high compared to other sectors. Independent sample t-test was applied checking for a statistically meaningful difference between hope, optimism, resiliency and self-efficacy dimensions of miners with/without history of accidents. Between the dimensions of miners with/without history of accidents hasn't proved a statistically meaningful difference.

From the definition of Jerome Frank (1968), who sees hope as a characteristic that gives a sense of well-being and motivates one to act, hope can bring out the energy needed for miners to achieve a sense of accomplishment. This will increase the motivation of the miners that will provide high performance.

Self-efficacy can be considered as channeling the motivation and cognitive resources of the employee to control the events in his life. Again, when we think of the belief that the employee can solve the problems he encounters in his life, it can be said that the miners' activities in the dangerous working environment will be the determining force. Miner's ability to control the risky events occurring underground will reduce the accident rates that may occur. The miner's belief that they can solve potential problems in the event of dangerous and risky situations will also be an important determinant of their success and performance.

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