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CRITICAL THINKING AS A MEDIATOR BETWEEN JOB RESOURCES AND GOAL ACHIEVEMENT

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ABSTRACT

The aim of the study was to investigate the mediating effect of critical thinking on the relationship between job characteristics (skill variety, autonomy and participative decision making) and achievement goal orientations. The research model was tested with 296 participants (164 male and 120 female), who worked in health, security, education and public sectors; in Marrakech, Rabat and Casablanca. The survey consisted of five sections: The explanation; job characteristic, critical thinking and achievement goal orientation items and demographic questions. SPSS 16 program was used to make statistical analysis of the data.

The reliability analysis revealed that internal consistency was adequately high for all the variables. Factor analysis showed that critical thinking was not divided into sub-dimensions because of insufficiency of sample size. But achievement goal scale was found to have three factors (mastery, performance-prove and performance-avoid orientations) consisting with literature.

While the regression analysis fully supported the mediating effect of critical thinking on the relationship between participative decision making and performance prove goal orientation; it partially supported it on the relationship between participative decision making and mastery goal orientation.

To examine the differences among the variables in terms of demographic characteristics, difference tests were conducted and descriptive analyses of the variables were examined. For gender, age, educational level and occupational groups, significant findings were acquired.

Key words: Achievement goals, job characteristics, critical thinking, participative decision making, autonomy, skill variety, mastery goal orientation, performance-prove goal orientation, performance-avoid goal orientation, motivation

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ABBREVIATIONS

AGO: **A**chievement **G**oal **O**rientation
AGOS: **A**chievement **G**oal **O**rientation **S**cale
CT : **C**ritical **T**hinking
CTS : **C**ritical **T**hinking **S**cale
JC : **J**ob **C**haracteristics
JCS : **J**ob **C**haracteristics **S**cale
PDM: Participative **D**ecision **M**aking
PDMS: **P**articipative **D**ecision **M**aking **S**cale

1. INTRODUCTION

The purpose of this research is to examine the relationship between job characteristics (skill variety, autonomy and participative decision making) and employee's achievement goal orientations. It is also aimed to discover whether critical thinking has a mediating effect in this relationship or not.

The dependent variable of the research (achievement goal) is mostly studied in the domain of educational psychology under the subject of achievement goal theory. This theory assumes that individuals can have different achievement goals. While some people perform their jobs with the intention of becoming expert, others may do it with the intention of proving themselves or not appearing as unsuccessful. Until recently, achievement goal orientations were used to be considered as characteristic tendency (Dweck & Leggett, 1988). But in recent years, studies put emphasis on the effect of environmental factors on individual's achievement goal orientation (Ames, 1984; Gist & Stevens, 1998; Kozlowski et al., 2001). Furthermore, achievement goal orientations were explained by motivational process.

The achievement goal theory which has been examined in educational psychology was started to be questioned in work life (VandeWalle, 1997). Other than achievement goals in academic life, researchers started to study on individuals‟ achievement goals in career life; such that they focused on the effects of organizational variables on achievement goals (Carroll, 2000; Farr, Hoffman & Ringenbach, 1993; Sujan, Weitz & Kumar, 1994; VandeWalle & Cummings, 1997). Nevertheless, there is a dearth of empirical research about achievement goals. The present study aims to understand this variable in organizational settings and contribute to literature in this manner.

Critical thinking, which is another variable of the research, has been investigated in organizational environment in the last 15 years (Deal, 2003; Kudisch & Hoffman, 2002; Novelli Jr. & Taylor, 1993; Park & Kim, 2009; Ricketts & Rudd, 2002).

However, there is not a study linking critical thinking with job characteristics. In this regard, examination of critical thinking as mediator in the relationship of job characteristics and achievement goals can contribute to organizational behavior literature.

In this framework, it is assumed that job characteristics that are presented by an organization, may affect employee's achievement goal orientation. It is for the benefit of organizations to see its employees as thinking, producing and emotional beings; but not as routine, uncreative and selfish beings. Performing complicated tasks instead of routine ones, initiating ideas instead of following instructions and participating in organizational decisions provide employee to perceive oneself as a worthy member of the organization. Therefore, the individual apply critical thinking process to make good decisions, express one effectively and think more carefully about the productivity and quality of his work. Such an individual tends to develop oneself in the way of performing tasks better, increase his/her competencies, etc; so, the individual orient towards positive achievement goals in mastery orientation. Consequently, organizations with such employees proceed in the way of organizational productivity.

2. LITERATURE

2.1. ACHIEVEMENT GOAL THEORY

Why are successful people still in minority, although today science and technology make life simpler? Why cannot people be successful even they want to be?

Is achievement a matter of “chance” or “intention” of overcoming challenges? Suppose that one has tried to achieve something but he/she could not. Does struggling indicate the rate of his/her success or lack of ability? Does achievement refer to competing with others or self?

Before explaining the subject of achievement that is conceptualized as achievement goal in literature; it is firstly aimed to clarify the definitions of “achievement” and “motive”.

In the dictionary, the definition of achievement is stated as “
1. The act of accomplishing, success.

2. Positive product of individual’s (actual or mental) activities done by means of exertion, skill, practice, or perseverance..

Motive is defined as “

1. Action that is taken by the effect of an internal or external impulse.

2. A desire that acts as an incitement to action. Desire of self-development is included in both of the definitions.

Accordingly, defining achievement motivation as a desire of self-development is reasonable. In this sense, Soyer and his colleagues (2010) define achievement motivation as desire of overcoming challenges, progressing and developing.

In daily language, there are several words that refer to motivation: Desire, demand, ambition, goal, etc. Expressions such as encouragement, stimulation, inspiration, intention, etc refer to one’s motivation. All these expressions contain the meaning of the goal to be achieved explaining motivation as individual’s actions oriented towards achievement of a goal.

Every individual tends to approach to satisfying and pleasing situations and avoid annoying situations. “Approach” and “avoidance” tendencies exist in the framework of motivation. Motives oriented towards the one, which outweighs, emerge. For instance, friendship motivation emerges as a desire of being considered and avoidance of being refused; or achievement motive emerges as a desire of achieving a goal and avoiding failure.

2.1.1. Achievement Goal Orientations

The distinction of approach-avoidance has been handled before the literature of achievement motivation. It is based on Democritus's moral hedonism and Aristippus's ideas about the link between man and the world ; that it was formed by pain avoidance and pleasure approach. British philosopher, Jeremy Bentham has also referred psychological hedonism to avoiding pain and approaching pleasure. In his book of Introduction to the Principles of Morals and Legislation, Bentham mentions "Nature has placed mankind under the governance of two sovereign masters, pain and pleasure

The central place of research on achievement motivation in scientific psychology is solidified by Atkinson, McClelland and Hoppe's studies. They define motivation as avoiding painful situations and approaching pleasurable ones. In his first experimental research, Lewin handled Hoppe's (1930) desire of achievement and defined achievement behavior with two distinct motivational tendencies:

Desire of achievement and avoid incompetence. In this basis for motivation, McClelland (1951) proposes that achievement motivation is separated into an independent approach component and avoidance component. Atkinson (1957), who is another motivational theorist, came up with need-achievement theory forming a mathematical framework that assigned the desire to succeed and the desire to avoid failure as important determinants in achievement behavior (Elliot, 1999; Elliot & Harackiewicz, 1996)

Between the years 1970-1980, Dweck his coworkers introduced the concept of "achievement goal orientation" to explain achievement motivation. These theorists defined achievement goals as the reason for activities related to competence. Initially, they followed in the footsteps of Lewin, McClelland, and Atkinson by including the distinction between approach and avoidance motivations into the structure of their assumptions (Elliot & Harackiewicz, 1996).

As to the emergence of the goal orientations; the study of Diener and Deweck (1978, 1980) should be examined. In their research, Diener and Deweck (1978, 1980) gave an effective problem solving training to the kids. At the end of the training, it was seen that the kids‟ abilities of problem solving were almost equal.Following that, when the kids were given a problem to solve, it was seen that they were equally motivated to solve the problem. However, the researchers observed kids‟ different responses to challenge. Some kids were found to give themselves quite negative feedback. They related the failure with their incompetence of problem solving, disabilities, weak memory, etc. Even though these kids seemed to be very self-confident about their problem solving abilities after the training; as soon as they confronted with the challenge, they fell in negativity and abandoned problem solving. Moreover, they exposed unrelated behaviors such as disobeying the rules of duty, talking about their other abilities, etc. The reason for this was getting the attention of the observers to their other competencies, so that they could obtain positive and avoid negative judgments of their competencies. In other words, these kids tried to strengthen their personality images by different ways instead of focusing on problem solving (Diener & Dweck, 1978, 1980).

In that research, Diener and Dweck became bewildered about the equality of competence between the groups of kids who abandoned the challenging mission and who were motivated to perform it. Such a situation cannot be explained by the kids' incompetence or discouragement. In this point, the question of individuals‟ different performance orientations against challenge should be discussed. Moreover, the reason that individuals‟ prevent their self-development against such situation should be investigated.

Briefly, individuals who give negative responses to failure, attributing failures to insufficient ability, holding low expectations for future success following failure, and experiencing more negative affect when confronted with challenge, exhibit helpless pattern (Dweck & Leggett, 1988) just like the kids in Diener and Deweck's experiment (1978, 1980). Whereas individuals persist on difficult tasks, attribute failures to factors within one's control (e.g., insufficient effort), maintain positive expectations for future success following failure experiences, and neutral or positive affect during challenging tasks, exhibit mastery-oriented pattern (Dweck & Leggett). This type of kids was seen pleased to have an opportunity of contending with a challenge and they kept their effort in the way of accomplishing the mission. In contrary of the other group, these kids mentioned statements such as "I have done it before, I can do it now too" or "I nearly finish it and solve the problem."

2.1.2. Modern Achievement Goal Orientations

In their experiment of children's' response to challenge, Diener and Dweck (1978, 1980) introduced the concept of "goal orientation". An AGO is defined as tendency to progress ones competence or prove oneself in a situation where the individual desires to be successful (Dweck, 1986).

According to Dweck and Elliot, the reason children response differently to challenges comes from their goal orientations. Children, who pursue helpless pattern, seek to obtain positive and avoid negative judgments of their competence. Dweck and Elliot associate this with performance goal orientation. In other words, a helpless motivational response is the result of the adoption of performance goal orientation. This includes a preference for easy or difficult tasks, effort withdrawal in the face of failure, shifting the blame of failure to lack of ability, and decreased enjoyment of tasks. Contrarily, individuals who pursue mastery motivational pattern, prefer for moderately challenging tasks, persist in the face of failure, stand for learning and enhance task enjoyment. Adoption of a mastery goal is hypothesized to produce mastery motivational pattern characterized by a preference for moderately challenging tasks, persistence in the face of failure, a positive stance toward learning, and enhanced task enjoyment Mastery goal orientation is expected to follow such response pattern (VandeWalle, 1997).

The literature suggests that goal orientations are considered as the poles of a variable. It means that individuals can only have a single orientation. For instance, Bandura and Dweck (1985) suggest that the concept of goal orientation contains both mastery and performance goals. In their studies, Bendura-Dweck (1985) and DweckLeggett (1986) used a single item to measure goal orientation. The item contained both of the orientations. After this one-dimensional conceptualization, in recent studies, goal orientation was started to be examined under two factors. This means that individuals may adopt both orientations in a certain measure (e.g. Heyman & Dweck, 1992; Button, Mathieu & Zajac, 1996; Nicholls, Cobb, Wood et al., 1990 and Farr et al., 1993).

In literature, besides this 2-factor construct, Nicholls (1989) handled performance goal orientation, which is characterized by helpless pattern, as two different factors of prove and avoidance. With the mastery orientation, achievement goal was measured with three factors in total. In his study, Nicholls did not mentioned the reason of considering performance goal orientation with prove and avoidance factors. A Meta analysis conducted by Elliot (1994) and VandeWalle (1997) provided empirical evidence that distinguishing between the prove-avoid dimensions enhances predictive power of performance goal orientation. Supporting this, Elliot and Harackiewicz (1996) developed a similar 3-factor model of goal orientation and proposed that goal orientations influence intrinsic motivation. On the basis of these suggestions, Vandewalle (1997) developed and collected validation evidence for scales that assessed a learning of performance goal orientation. These three dimensions are defined as follows:

1. "A learning goal orientation is a focus on developing one's competence by acquiring new skills, mastering new situations and learning from experience."

2. "A proving goal orientation is a focus on demonstrating one's competence and the gaining of favorable judgments from others."

3. "An avoiding goal orientation is a focus on avoiding negotiation of one's competence and the avoiding of negative judgments from others" (p.1000).

VandeWalle (1997) carried out his research on the students in the last grade of business administration. So, he put emphasis on these goal orientations in adolescence.

Then what determines goal orientation preference? Dweck and Leggett (1988) suggest that goal orientation is linked to individual's theory of his/her attributes as fixed entities or malleable qualities. Individuals, who believe that their competence is malleable, increasable and controllable, pursue mastery goals. Others, who believe that their competence is fixed or uncontrollable, pursue the performance goal of securing positive judgments of that entity or preventing negative judgments of it.

2.1.3. Achievement Goal Orientations in Work Life

Even though the achievement goal theory is examined on the basis of educational psychology, in recent years, this concept has been investigated in organizational settings (Bobko & Colella, 1994; Carroll, 2000; Farr, Hoffman & Ringenbach, 1993; Sujan, Weitz & Kumar, 1994; VandeWalle, 1997; VandeWalle, Brown, Cron, et al., 1999; VandeWalle & Cummings, 1997).

Farr and his colleagues (1993) mentioned that the concept of goal orientation was associated with goal setting, performance feedback and work role innovation. Sujan and her colleagues (1994) determined a positive relationship between mastery goal orientation and sale performance. Vandewalle and Cummings (1997) linked goal orientation to feedback- seeking behavior.

On the other hand, Vanyperen & Janssen (2002) studied the relationship among goral orientations, and physical exhaustion and burnout. They found that employees who scored high on performance goal orientation, but low on mastery goal orientation; were negatively affected by work load and exhibited symptoms of burnout and job dissatisfaction. Depending on these, it seems as goal orientations predict employee's motivational response to his/her tasks.

Goal orientation is considered as a personality trait by Dweck and Leggett (1988), on the other hand, Ames (1984) states that some environmental factors such as time pressure or competition influence one's goal orientation. Recently, in literature it is proposed that goal orientations are not stable personality traits but changeable traits that are influenced by environmental factors. For instance, in the domain of sports, while an individual orient towards performance goal; in academic life, he/she may orient towards mastery goal. These studies were rather conducted in organizational settings (Gist & Stevens, 1998; Kozlowski et al., 2001; Kraiger, Ford & Salas, 1993; Mangos & Steele-Johnson, 2001).
So, can work conditions influence employee's goal orientation? According to Farr and his colleagues (1993), as mastery goal-oriented employee's effort increases, he/she develops strategies to perform effectively. They found that tasks that required high effort, motivated more mastery goal-oriented employees. Similarly, can job characteristics such as participative decision making or skill variety explain employee's mastery goal orientation? In other words, do such job characteristics provide employee motivation to develop his/herself? One of the aims of the present research is to discuss this question. Then, job characteristics are going to be examined.

2.2. JOB CHARACTERISTICS (JC)

As it is known, Hawthorne effect is a term in group psychology that is discovered by a known experiment conducted by Mayo and his colleagues between the years of 1927-1932 in Hawthorne, Western Electric Factory. The experiment put emphasis on the importance of observation and being perceived as an individual in group. Actually the aim of the research was to examine the relationship between worker productivity and light intensity. During the experiment it was first seen that productivity of both the groups in which the amount of light was increased and maintained stable, was increased. Later on, the amount of light was decreased in one of the groups and in the other one, it was kept stable. The productivity of the group in which the light was decreased, increased as well as in the control group that worked in high level of light. The psychologists searched for the reason of this situation and interviewed with the workers. The workers mentioned that they were pleased to be studied. This finding was then named as Hawthorne effect in industrial psychology.

According to this theory, workers should not be considered solely as "homoeconomicus", but emotional beings that need to be taken in consideration as individuals who provide benefit to their organizations. In this manner, they are expected to perform more effectively (http://tr.wikipedia.org, 01.10.2010).

The interviews with the workers let researchers to step in the relationship between work conditions and motivation. Thus, organizations began to adopt a humanistic approach towards employees. Oldham and Hackman (1980) studied on the influence of environmental conditions on employee motivation and set forth the theory of the "Job Characteristics Model" (JCM) which became the basis for many job enrichment strategies. The JCM posits that the way jobs are perceived, impact three particular psychological reactions to the job which are defined as critical psychological states. These are:

Experienced meaningfulness of the work – This is the extent to which people believe that their job is meaningful, and that their work is valued and appreciated.
Experienced responsibility for the outcomes of work – This is the extent to which people feel accountable for the results of their work, and for the outcomes they have produced.
Knowledge of the actual results of the work activity – This is the extent to which people know how well they are doing (Robbins, 2003, p. 476).

In the context of the present study, only two of the core dimensions, skill variety and autonomy are handled. So, the examination of these variables follows next.

2.2.1. Skill Variety

A technique to enrich an employee's work experience is to utilize employees with a wide range of skills so they can apply them to their daily work routine. A job has high skill variety if it requires a number of different skills and talents. Skill variety is one factor in the JCM that influences the experienced meaningfulness of work. A job that involves doing the same type of work can be boring. In contrast, a job that involves a variety of skills may alleviate boredom and foster greater meaning in our work. Greater skill variety is found to be associated with greater perceived meaningfulness of work because it allows employee to discover or gain more aspects of his/her competence in work . Many research indicate that most human behavior is concerned with attempts (e.g. manipulating the environment) to gain some measure of competence. This striving toward competence is an activity that results in a feeling of efficacy .

Oldham and Hackman (1980) state that the more a job is meaningful to employee, the greater will be employees job satisfaction. Delegating responsibility of a whole task to an employee instead of charging him/her with a small part of the task lets the employee use his skills and abilities; and it leads to performance productivity. In this regard, the linkage of skill variety and positive goal orientation can be predicted.

2.2.2. Autonomy

It is the degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling his/her work and in determining the procedures to be used in carrying it out (Oldham & Hackman, 1980). This JC gives rise to feeling of responsibility for employees. For instance a job in which an employee gives his/her own decisions instead of being what to do by his/her superiors, renders the employee responsible for all the results of his/her decisions (Oldham & Hackman).

In their article, Thompson and Prottas (2005) linked perceptions of control in various forms to employee well-being (broadly conceptualized to include positive attitudes and absence of physical and psychological symptoms) (Greenberger & Strasser, 1986). For example, in their JCM, Hackman and Oldham (1976) consider autonomy to be a major cause of job satisfaction and positive adjustment to work. Karesek (1979) states that if employees who perform complicated jobs, are not delegated any autonomy in their jobs; they perceive intensely job stress.

Hall and his colleagues (2006) found the mediating role of autonomy in the relationship between felt accountability, which refers to being observed in terms of work behavior, and emotional exhaustion.

According to this, autonomy at work is said to moderate the impact of job stressors on well-being. Correspondingly, Thompson and Prottas (2005) found that employees with higher levels of job autonomy were more likely to be satisfied with their job, family, and life in general; experienced more positive spill-over between job and home; were less likely to be thinking about looking for a new job; and were less likely to feel stressed or experience work-family conflict.

Furthermore; De Lange, De Witte and Notelears (2008) stated that job autonomy was positively related to work engagement. In other words, employees who are not given autonomy in work do not feel involved in their jobs; so, they tend to quit. In this context, Thompson and Prottas (2005) mention that autonomy in work provide individuals to gain control over other domains of their life.

Evidently, there is an association bet found ween autonomy and job satisfaction . Fung-Kam (1998) cites that autonomy is linked to job satisfaction especially on high-level educated employees (Ross & Reskin, 1992).

Autonomy is positively related to role breadth such that individuals with higher levels of autonomy have greater role breadth than those with lower levels of autonomy; because increased autonomy allows individuals greater flexibility in how they define their role. So, they have greater discretion in deciding how to perform the work.

Autonomy increases employees' ownership of problems but also recognition of a wider range of skills and knowledge as important for their roles. Increased control over the work environment motivates workers to try and master new tasks; and that is consistent with work design research that was demonstrated the motivational benefits of work autonomy. This suggests that when individuals are given autonomy, they become likely to integrate more tasks into the focal role (Parker, 1998; Parker, Wall, & Jackson, 1997).

The link between need of competence and autonomy is explained as the feelings of competence do not enhance intrinsic motivation unless accompanied by a sense of autonomy. Mitusch (2000) states that even though an employee is not rewarded for his/her achievement but given autonomy in his job; he/she maintains productivity high. On the basis of this statement, it is seen that in organizations which delegate autonomy to its employees, achievement motivation of employees is high.

2.2.3. Participative Decision Making (PDM)

The concept of PDM involves any power-sharing arrangement in which workplace influence is shared among individuals who are otherwise hierarchical unequal (Locke & Schweiger, 1979; Wagner & Gooding, 1987; as cited in Wagner III, 1994). Locke, Schweiger and Latham (1986) define PDM as the act of sharing decision making with coworkers or superiors. This style is different from the autocratic decision making which is characterized by leaders takes control of and responsibility for the final decision. Whereas PDM style lets employees to lead their own decision process (Locke et al., 1986). Black and Gregersen (1997) define six different dimensions of PDM: Rationale, structure, form, decision issues, degree of involvement and decision process.

The rationale for involving employees is the first of Black and Gregersen's (1997) dimensions and comprises two philosophical approaches.

The first is a democratic or humanistic perspective (democratic rationale) that believes employees should have the right to participate in decisions that affect them. The second approach is a more pragmatic perspective (pragmatic rationale) based on the belief that increased employee involvement and participation leads to increased productivity and profitability (Black & Gregersen, 1997). Depending upon this, in the study of Coach and French (1948) on a production plant, they found that the production was higher when the employees were given right to make decision for job redesign (as cited in Latham & Steele, 1983).

Second dimension refers to the structure of decision-making in terms of whether or not involvement is formal or informal. Formal participation occurs when the organization clearly identifies how employees will participate through policies or regulations. Informal participation is where there are no clear rules or guidelines, yet employees are given the opportunity to participate in decision-making. Some research mentions that organizations which find PDM as individuals‟ natural right tend to implement officially PDM (EDE, 1979; Strauss, 1982; as cited in Black & Gregersen, 1997).

The third dimension refers to the form PDM takes. Employees may be given the opportunity to be directly involved in the PDM process or may have a restricted role via formal representation (Cotton et al., 1988; Dachler & Wilpert, 1978). Research by Black and Gregersen (1997) found direct involvement was more likely to promote greater employee commitment, satisfaction and performance than indirect participation.

The fourth dimension of PDM refers to the level and type of decision making issues employees participate in (Cotton et al., 1988; Miller & Monge, 1986; Margulies & Black, 1987). These types of decisions could include task design, working conditions, strategic issues and capital investment. Relevant knowledge about an issue brings higher decision quality and efficiency; participants achieve value attainment, thereby raising performance and satisfaction (Davis, 1963; Derber, 1963; Maier, 1965; Vroom, 1973; as cited in Black & Gregersen, 1997).

The fifth dimension was the degree of involvement in decision-making (Blumberg, 1968; French, Key & Meyer, 1960; Obradovic, French & Rogers, 1960). The options for influencing decisions range along a continuum of responses, from having "no say" at one end of the scale, to having "control" at the other end of the scale. Not surprisingly, the highest level of satisfaction and performance can be expected to be present in the upper range of the continuum, where employees have greater control over the outcome (Black & Gregersen).

Lastly, the sixth dimension is the process of decision-making where employees have the option to participate at five different levels. These five levels are: (1) identification of problems, (2) solution-generating, (3) selection of specific solutions, (4) planning and implementation the solution and (5) evaluation of the result (Black &

Gregersen, 1997). So far, the definition of PDM from different perspectives is discussed. It is now recommended to look over the studies that made PDM widespread in organizations.

In the present study, PDM is defined as expressing and supporting democratically ideas about the issues such as work share, goal setting, problem solving. In literature it is stated that the implementation of PDM techniques make employees‟ self-esteem high; so, their jobs satisfy them and thus, they feel committed to their organizations (DeLancer Julnes, 2001).

Locke and Schweiger (1979) point to some factors that can influence positively PDM, such as having the same level of knowledge on the decision issue as the others do, being adequately motivated to participate in decision making, awareness of the risk of groupthink and possible intra-group conflicts, having democratic leaders and having adequate time to participate in decision making.

In the Goal Setting Theory, Locke (1968) proposes that PDM leads employees to feel more responsible for the goal; thus, they exert a high level of effort to achieve it. The most significant contribution of PDM is that employees determine and accept the challenging goals. This shows that employee participation is a strong motivator (cited in Robbins, 2003, p.166). Similarly, McGregor (1960) offers PDM, delegation of responsibility and challenging goals for employee motivation.

In his research, Gardell (1977) found that some JC such as autonomy and skill variety lead employees to participate in decision making. In the meta analysis of Spector (1986), it was determined that PDM and autonomy were positively associated with job satisfaction, organizational and job involvement, performance and intrinsic motivation; and negatively associated with physical health symptoms, stress and turnover intention. Although these two variables have similar relationships with other variables; autonomy is related to absenteeism, whereas PDM has no significant relationship with it.

If employees are given right to participate in decision making and perform autonomously tasks that require various skills, do they tend to use their cognitive abilities more efficiently to achieve goals? The present study also handles the concept of critical thinking. It is aimed to find whether critical thinking mediate the explanation of the environmental factors such as skill variety, autonomy and PDM for motivation process or not.

2.3. Critical Thinking (CT)

2.3.1. Definition

To understand better the content of CT, the meanings of "critic" and "thinking" should be explained. Then, the definition of the concept, CT which is handled in this research is going to be presented. Lastly, the relationship of CT with organizational variables will be discussed.

The definition of thinking in the dictionary is stated as

"1. (Wide meaning) As Aristotle defines, it is an attribute that distinct human being from animal: Act of mind independent from observation, sensation and creation; faculty of comparison, distinction, comprehension of connections and concepts.

Regarding critic,
1. (General meaning)" the judgment of the merits and faults of the work or actions of one individual by another"
2. (In Philosophy) "the act of making judgments; analysis of qualities and evaluation of comparative worth (knowledge criticism)"

Are these definitions similar to the ones in CT literature? To answer this question, it is appropriate to examine the literature.

Enis (996) defines CT as "a process of making logical decision about what to believe and to proceed". Facione (2007) also puts emphasis on the Enis's definition.

CT is a process that requires several abilities. These abilities are directly proportional with the quality of the outcome of this process.
They are abilities of "
(1) Distinction between the proven reality and the assertions,
(2) Testing the reliability of the sources,
(3) Selecting proves among unrelated information,
(4) Awareness of prejudgment, cognitive faults
(5) Inconsistent statements,
(6) Effective interrogation,
(7) Effective oral and written communication and
(8) meta-cognition where an individual is aware of own thoughts.

Ennis (2002) ultimately propose that a critical thinker exhibits the following characteristics:
Is open-minded and mindful of alternatives:

- Tries to be well-informed
- Judges well the credibility of sources
- Identifies conclusions, reasons, and assumptions

- Judges well the quality of an argument, including the acceptability of its reasons, assumptions, and evidence.
- Can well develop and defend a reasonable position
- Asks appropriate clarifying questions
- Formulates plausible hypotheses; plans experiments well
- Defines terms in a way appropriate for the context
- Draws conclusions when warranted, but with caution
- Integrates all items in this list when deciding what to believe or do.

2.3.2. Research on Critical Thinking in Organizational Setting

Organizations in 21st century prefer to recruit employees that can think critically and participate in decision making. A nonfunctional thinking system causes individual to lose time and energy; thus it brings nothing but unproductiveness to both employees and organizations. Organizations exist in a business environment full of contradictories. In such environment, they require more effective leaders and to have such leaders, they have to lead employees towards CT (Novelli Jr. & Taylor, 1993). Ricketts and Rudd (2002) developed a leadership training program in which CT is a characteristic of effective leadership. Today, organizations need innovation and change to stand still. For that reason, they need employees who are open to lifelong learning. Such employees show tendency to CT. Jackson (2008) emphasizes that today organizations look for autonomy and CT as criteria of recruitment.

In the USA, the O*NET program is used as the nation's primary source of occupational information. This program mentions in its website (http://online.onetcenter.org, 2009) that CT is the primary indicator of performance especially for health personnel (hospital managers, nurses, etc), engineers, teachers and lawyers. In his research, Mariani (1994) put also emphasis on CT as a strong predictor of performance. Similarly, Park and Kim (2009) found in their research that the clinical competencies of nurses were related to their level of CT. In other research, it was found that CT contributed to therapeutic communication with patients by facilitating empathy (Deal, 2003). There was also contribution of CT found to performance in textile production by facilitating the perception of esthetical values in creation of textile products (Fiore, Kadolph & Ogle, 2005). In a study in The US Air Force, it is found that CT training contributed positively to offensive counter air operation (Fischer, Spiker & Riedel, 2009).

Kudisch and Hoffman (2002) determined that the scores gained in assessment center –especially in leaderless group discussion, in basket and case studies- were positively related to CT level. In other assessment center study, Ejiogu and his coworkers (2006) found that, problem solving, decision making and technical expertise were the evaluation topics that mostly associated to CT level.

2.4. The Relationship among Job Characteristics, Critical Thinking and Achievement Goal Orientations

As it was mentioned in the beginning, the present study aims to determine the mediating effect of CT on the relationship between JC (Skill variety, autonomy and PDM) and AGO. In literature, there is no empirical research found about the relationship among mastery, performance-prove and performance-avoid goal orientations; and JC. Yet, there are some findings that may help making prediction about this relationship.

By many studies (Latham, Winters & Locke, 1994; Locke, 1968; McGregor, 1960; Spector, 1986) it is stated that jobs which required skill variety and organizations in which employees can use their competences autonomously and participate in decision making, increase the motivation level of employees.

The idea of introducing these characteristics to job that lead an employee to fulfill his/her potentials is based on Herzberg's two-factor theory (motivation-hygiene theory). Herzberg and his colleagues based the theory on the notion that the presence of one sets of JC or incentives (intrinsic factors) lead to worker satisfaction at work (e.g. achievement, recognition, work itself, responsibility, advancement and growth) (cited in Eren, 2004). What considerable in the theory is that concepts such as skill variety and autonomy are related to self-fulfillment? Thus, it is thought that employees, who have such JC, may lead to develop their competencies.

Skill variety, autonomy and PDM call forth not only taking physical role in work, but also mental role and taking on responsibilities for the results of the decisions. Individuals, who perform tasks that require various skills, are delegated responsibility about the plan and method of the task and have a say in decisions concerning the organization; orient towards achievement goals. Such an employee tend to prove his/her competencies (performance prove goal orientation) and develop his/her competencies at the same time (mastery goal orientation).

The findings that lead to associate JC and AGO are discussed above. Next, the findings about CT that lead to predict its mediating role in the research are presented.

CT is a purposeful reflective judgment concerning what to believe or what to do. Depending on this, the effect of CT can be observed in PDM process. It can be assumed that the positive effect of PDM on motivation, comes from CT; because PDM triggers CT and hereby, employees are motivated.

It is seen that employees who involve in PDM process, understand better the goals of the organization, obtain more information about the organization and generate ideas for decision. Briefly, such employees show enthusiasm for learning and development. Other than that, these employees tend more to practice CT. Papa M.J and his colleagues state that CT is an important practice for making right decisions in group.

There has been found a positive linkage between autonomy and PDM (Dearden, 1972, p.70; as cited in Cuypers, 2004). Dearden states that autonomy drives individual to think and take action. Hereby, individuals can think deeply and take own decisions (cited in Cuypers)
So far, the relationship between CT and some JCs is discussed. Then it is aimed to examine whether the findings indicate the effect of CT on motivation or not.

On the basis of empiric research about the relationship between motivation and creative thinking, it can be predicted that CT might explain individual's motivation. Bailin and Siegel state that Critical Thinking and Creative Thinking are two concepts related to each other. CT also involves problem solving. Creativity refers to the phenomenon whereby a person creates something new which has some kind of value. Creative thinking is an important variable for problem solving as well as CT. Janssen and Van Yperen propose that AGO is related to creative performance. Individuals, who set mastery goals, are more likely creative.

The study of Hirst, Knippenberg and Zhou which handled creativity in group showed that when groups that adopted performance goal orientation were encouraged to learning, group members exhibited high level of creativity.
Gustin put emphasis on high level of CT and creative thinking for hotel managers to sustain achievement. He handled CT and Critical Thinking together in CT training for hotel personnel.
Solving a problem which you confronted for the first time, requires CT and creative thinking. Since the content of creative thinking is close to the content of CT; it can be said that CT is related to AGO as well.

Research has shown that when students were put through CT training, they were more intrinsically motivated to learning (Points III, 2003). Garcia and Pintrich (1992) found the relationship between intrinsic motivation and CT. CT was also associated with high level of self-efficacy (Roberts & Dyer, 2005); because self efficacy refers the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations and intrinsic motivation refers to being open to self-development. In this case, it can be said that CT is an important factor in battling challenges.

In the light these findings in literature, the research model is presented in a schematic form below with the hypothesis.

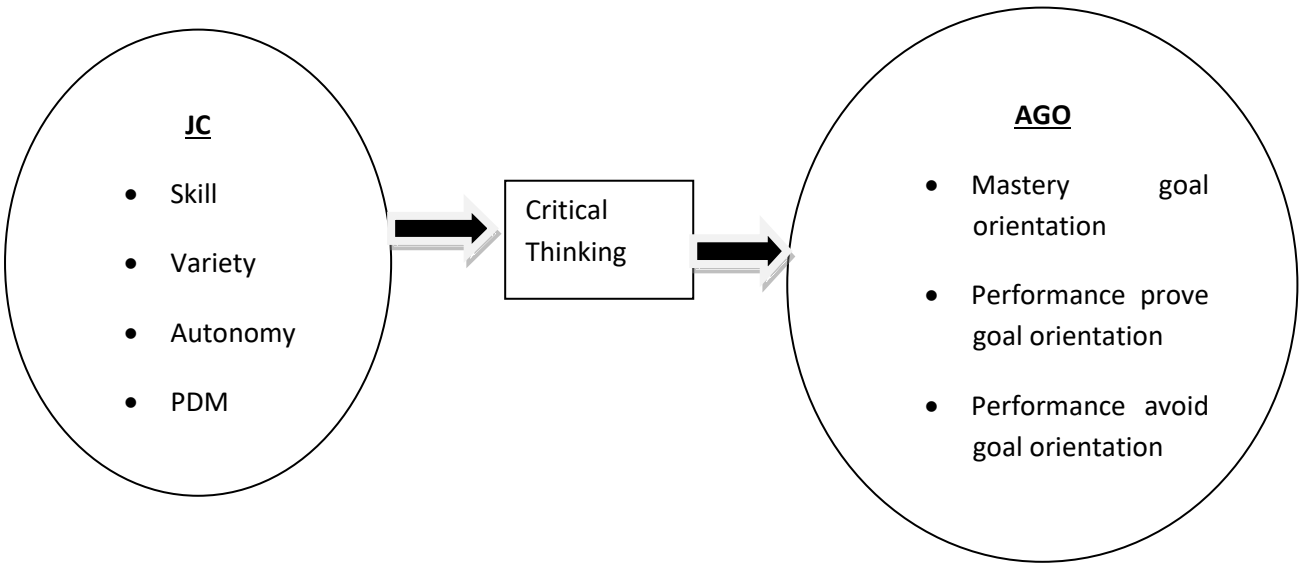

Figure 1: Research Model H1: Critical thinking mediates the relationship between job characteristics (skill variety, autonomy and participative decision making) and achievement goal orientations.

3. METHOD

3.1. THE SAMPLE

For this research, the data were gathered from a total of 296 employees, who work in health, security, education and public sectors; in Marrakech, Rabat and Casablanca. The sample consists of 164 (57.7%) male and 120 (65.8%) female employees. 12 participants have not indicated their gender. The age of the sample ranges between 18 and 69 (age=34.1). 21 participants have not indicated their age. In terms of their education level, 1.7% of the participants (N=5) had postgraduate degree, 29.9% (N=86) had bachelor's degree, 26.7% (N=77) were vocational school graduates, 28.1% (N=81) were high school graduates, 6.99% (N=20) were secondary school graduates and 6.6% (N=19) were elementary school graduates. 2.7% of the sample (N=8) have not indicated their educational level. The mean of work tenure which ranges between 1 month and 38 years was 6.69years. For this question, 20 participants have not given an answer.

Lastly, in terms of their occupation, 31.4% of the participants (N=93) were civil servants, 17.6% (N=52) were workers, 13.2% (N=39) were lecturers, 10.5% (N=31) were sales clerks, another 10.5% (N=31) were medical personnel, 3.7% (N=11) were managers, 2.7% (N=8) were security staff and 1.4% (N=4) were accountants. 27 participants have not indicated their occupation.

3.2. THE RESEARCH INSTRUMENTS

In the present study, 3 scales were used to measure the variables: Job characteristics, critical thinking and achievement goal scale. All the items in the questionnaires were responded on a 6-point scale, response alternatives ranging from 1

To 6 [(1) = Never, (2) = Rarely, (3) = Sometimes, (4) = Often, (5) = Quite often, (6) = Always).

3.2.1. Achievement Goal Orientations Scale (AGOS)

This variable was measured with a 16-item scale. To form this scale, the items of the AGOS, which was developed by Vandewalle (1997) and Elliot (1999) and that is used widely in the literature, were made used of. The scale consists of 3 factors as “mastery goal orientation” (6 items), “performance-prove goal orientation” (5 items) and “performance-avoid goal orientation” (5 items). Elliot (1999) has actually created this scale to use it in school environment. Therefore, the items are reformed according to work environment. But some of the items were taken out of the scale because they were completely addressing courses taken in class. Vandewalle’s (1997) items which were in fact developed due to work environment but seem more appropriate to school environment; and those similar to Elliot’s (1999) items were not used in the framework of this research.

Mastery goal orientation: This factor consists of 6 items such as “I often look for opportunities to develop new skills and knowledge”, “I prefer to work in situations that require a high level of ability on a task.”

Performance-prove goal orientation: Some of the 5 items that form this factor are “I am concerned with showing that I can perform better than my coworkers”, “I enjoy it when others at work are aware of how well I am doing.” Performance-avoid goal orientation: This factor consists of 5 items. For example, “I prefer to avoid situations at work where i might perform poorly.”, “I am concerned about taking on a task at work if my performance would reveal that I had low ability.””

3.2.2. Critical Thinking Scale (CTS)

In the literature it is seen that Watson-Glaser Critical Thinking Appraisal (1980), Cornell Critical Thinking Test (Ennis, Millman & Tomko, 2005), The Ennis-Weir Critical Thinking Essay Test (1985), California Critical Thinking Disposition Inventory (Facione, Facione & Giancarlo, 1998) was preferred to use, because it was the most convenient to the meaning of critical thinking that is aimed to be measured in this research.

The scale was compared with the Watson-Glaser Critical Thinking Appraisal (1980) in order to see whether it was concurrently valid or not. The correlation between the scales was found to be 0.695). Besides it has also performed a factor analysis in order to determine the factors of the variable and to test the construct validity. As a result, it was found that the variable was consisting of 10 subscales with a coefficient alpha of 0.93.

Subscale #1: Putting thoughts in order (e.g. "I have difficulty with expressing my thoughts by the correct words and sentences.", "I have difficulty with defending my opinions.")

Subscale #2: Interrogating knowledge (e.g. "While I am reading a news, I interrogate its reality at the same time.", "When I watch the news, I think about its reality.")

Subscale #3: Awareness of feelings, thoughts and values (e.g. "I am aware of what I feel", "When I work on something, I can catch my own mistakes".)

Subscale #4: Problem solving (e.g. "I am especially willing to learn challenging subjects.", "Challenges and obstacles can never intimidate me.")

Subscale #5: Open mildness and tolerance (e.g. "I like listening to different ideas.", "It is important for me to be open to different views.")

Subscale #6: Empathy (Flexibility in thinking) (e.g. "I have difficulty with correcting my wrong thoughts.", "I have difficulty with putting myself in someone else's place to understand him/her.") Subscale #7: Self-development (e.g. "I make research about the things that I wonder about.", "When I make a research, I try to use many sources.")

Subscale #8: Openness to criticism (e.g. "When I make a mistake, I cannot accept it easily.", "It is so hard for me to apologize when I make a mistake.")

Subscale #9: Attention to details in ideas (e.g. "When I answer a question, I do not think very carefully.", "I am not very careful with the details.") Subscale #10: Rational thinking (e.g. "No matter how hard it is for me, I try to think rationally on situations.", "I usually behave in the direction of rational decisions.")

3.2.3. Job Characteristics Scale (JCS)

3.2.3.1. Skill variety

This dimension is measured by Olham and Hackman‟s (1980) 3-item scale with 2 new items added. Their internal consistency analysis has revealed coefficient alpha of 0.71. An example of the items is “The job requires met o use a number of complex and high-level skills” The two items that are added to the scale to increase its reliability and to express comprehensively the concept of the variable are “I use my knowledge to perform my job.” and “My job requires me to gain new skills.”

3.2.3.2. Autonomy

To measure autonomy, 5-item scale of which the internal consistency has been found to be 0.85 was used. “I decide about what tasks I perform during the day.” and “I decide when to start and complete my tasks.” are some examples of the items. “Responsibility”, which the concept of autonomy contains, is more comprehensive. Because of this, one item from the autonomy scale of Hackman and Oldham (1980), which is “The job denies me any chance to use my personal initiative or judgment in carrying out the work”, was added to the scale.

3.2.3.3. Participative decision making

It is measured by the 8-item scale of Veldhoven and Meijman (1994). But two items in this scale which are “Do you have a significant say in decision-making at work?” and “Do you participate in decision making with regard to work related issues?” were thought to have similar meanings; so the first item was taken out of the scale. In the analysis of Veldhoven and Meijman, the internal consistency has been found to be 0.82. Some of the items are “I participate in decision-making with regard to work-related issues.” and “I directly influence decision making in my department.”

3.3. THE PROCEDURE

The questionnaires were worked up into a survey form in mini-booklets and personally distributed to the participants by convenience sampling method. The first page of the survey contained the purpose of the research including an explanation that the answers of the participants would only be used to gather data for the research. Following that, the questionnaires "JCS", "CTS", "AGOS" and the demographic questions were respectively presented in the booklet. The participants returned their surveys in two days. Although the questionnaires were given out to 450 participants; only 350 replies were received. 54 of them were incomplete. Ignoring the missing data, 296 (65.8%) responses were finally left to be analyzed.

3.4. THE DATA ANALYSIS

Results of this study were evaluated using the Statistical Package for the Social Sciences (SPSS) version 16.0 for Windows. For the internal consistency of the scales, reliability analysis was performed and coefficient alphas were taken into consideration. For the factor structure of achievement goal scale, factor analysis was performed with principal components model and factor loadings were taken into consideration. Bivariate Correlations were conducted for analyzing the relation between the variables. Multiple Regression analysis was used to test the hypothesis. Finally, categorical demographic variables were tested by One-way ANOVA and independent samples test.

4. FINDINGS

In this part, findings of the study are given in three sections. The first section represents the internal consistency of the scales and the factor analysis of the AGOS. In the second section, relations between the variables and the hypothesis tests are presented. Lastly, demographic comparisons among the variables were made by difference tests in the third section.

4.1. Reliability Analyses

In the present study, reliability analysis for the scale of each five variable was performed (Table 1). In the reliability analysis for the 5-item scale of skill variety, it was seen that the second item reduced internal consistency of the scale; so the item was removed. The reliability analysis in the second iteration revealed Alpha value of 0.74. Skill variety was computed as the sum of four items for the following analyses.

The Cronbach's Alpha values were determined as 0.84 and 0.87 for the 6-item scale of autonomy and 7-item scale of participative decision making respectively. The internal consistencies of the 16-item scale of achievement goal and 55- item scale of CT were found to be 0.81 and 0.91 respectively. As it was mentioned in the method, the CTS had 10 subscales. Nevertheless, the amount of the subjects was less than the product of the number of items and response alternatives. So, factor analysis could not be conducted for this scale and critical thinking was taken in account as a mean score of 55 items in the following analyses.

Table1. Internal Consistencies of the Variables

Variables	Cronbach Alpha
1.Skill Variety	.74
2.Autonomy	.84
3.Participative decision making	.87
4.Achievement goal	.81
5.Critical Thinking	.91

4.1.1. Factorial Structure of Achievement Goal

Exploratory factor analysis was conducted with the principal component analysis (PCA) and varimax rotation on the factorial structure of the scales. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy test and Bartlett's Test of Sphericity were done to see whether the data for this variable was convenient for conducting factor analysis or not. For KMO, 0.5 was taken in consideration as minimum acceptance value. The minimum value of factor loading for items was also considered as 0.5.

It was seen that KMO value was 0.87 and Bartlett's Test of Sphericity was significant

(1622.66; p< .001); indicated that the data was adequate and appropriate to conduct factor analysis. At the end of the factor analysis, it was found that the variable was divided into three meaningful factors, which is consistent with literature.

Table 2 depicts the three factors with items and factor loadings. All the factors have Eigenvalues over 1.00. Explained variance by mastery goal orientation is 20.6%; by performance-prove goal orientation, it is 18.67% and by performance-avoid goal orientation, it is 15.68% variance of the scale. In total, they explain 54.95% of the variance. This result means that these factors can measure AGO.

Table2. Factorial Structure of AGO

Factors	Items	Factor Loading	Factor Variance
Mastery Goal Orientation	4. I am willing to select a challenging work assignment that i can learn a lot from	.769	20.60
	3. I prefer to work in situations that require a high level of ability on a task	.736	
	2. For me, development of my work ability is important enough to take risks.	.735	
	6. I often look for opportunities to develop new skills and knowledge	.687	
	1. I enjoy challenging and exciting tasks because I gain new skills.	.665	
	5. I want to learn as much as possible from my job	.531	
Performance-prove Goal Orientation	9. I enjoy it when others at work are aware of how well i am doing	.790	18.67
	10. I prefer to work on projects where I prove my ability to others	.698	
	7. It is important to me to do better than my peers.	.686	
	11. When I am compared to my peers, I try to exhibit my skills that make me become more of an issue.	.681	

	8. I am concerned with showing that i can perform better than my coworkers	.679	
Performance-avoid Goal Orientation	14. I often think to myself, "What if I perform badly this task?	.819	15.68
	15. I prefer to avoid situations at work where i might perform poorly	.750	
	13. I am concerned about taking on a task at work if my performance would reveal that i had low ability	.733	
	16. I worry about the possibility of getting a bad grade in for this task?	.600	
	12. The worry about poor performance is one of the main factors that influence my behaviors at work.	.553	
		Total Variance Explained	54.95
		KMO	0.87
		Barlett's Test of Sphericity	1622.66
		df	120
		Siig	.000

The Cronbach alpha for the mastery goal orientation which has 6 items, is 0.83; for the performance-prove goal orientation which has 5 items, it is 0.82 and for the performance-avoid goal orientation which has 5 items, it is 0.74. So, it can be said that the AGOS that is used in the present study is quite reliable.

4.2. CORRELATION ANALYSES

To examine the relationships between JC, CT and AGO, bivariate correlation analysis was conducted. In this analysis, Pearson Product Moment Correlation Method was used. The means, standard deviations and correlation coefficients related to all the factors are depicted in Table 3. As it is seen in the table, all the three independent variables have weak but significant positive relationship with the two factors of the dependent variable. The relationship of skill variety with mastery goal orientation ($r = 0.24$, $p<.01$) is stronger than the one with performance-prove goal orientation ($r = 0.17$, $p<.01$). Similarly, the relationship of PDM with mastery goal orientation ($r = 0.27$, $p< .01$) is stronger than the one with performance-prove goal orientation ($r =0.22$, $p<.01$). Autonomy has much weaker relationship with these two variables (with mastery goal orientation $r = 0.24$, $p<.01$; with performance-prove goal orientation $r = 0.13$, $p<.01$). None of the independent variables has significant relationship with the dependent variable. All of the three independent variables have significant relationship with the mediator (CT). The strongest relationship of CT is found with PDM ($r = 0.29$, $p<.01$), then with autonomy ($r = 0.23$, $p<.01$) and lastly with skill variety ($r= 0.13$, $p<.05$). CT is found to be significantly related with all the factors of achievement goal. Its relationship with mastery goal orientation is strong and positive ($r = 0.60$, $p<.01$); with performanceprove goal orientation, it is moderate and positive ($r = 0.43$, $p< .01$) and with performance-avoid goal orientation, it is weak and negative ($r = -0.20$, $p< .01$).

It is seen that JC are all related with each others. The strongest relationship is between PDM and autonomy ($r =0.66$, $p< .01$). There is also a considerable relationship between PDM and skill variety ($r = 0.39$, $p< .01$). Skill variety has a significant relationship with autonomy ($r= 0.20$, $p<.01$). None of these relationships exceeded the value of 0.70, thus there is not a multi-collinearity problem regarding the variable.

Lastly, it is found that some factors of dependent variable are significantly related. The correlation coefficient ($r = 0.59$, $p< .01$) imply a high level-positive relationship between mastery and performance-prove goal orientation. Whereas there is no significant relationship between mastery and performance-avoid goal orientation.

Table3: Means, Standard Deviations and Correlations For All Study Variables

Variables	1	2	3	4	5	6	7	M	SD
1.Skill variety	...	.20**	.39**	.13*	.24**	.17**	.014	3,73	1,22
2.Autonomy		…	.66**	.23**	.14**	.13**	-.01	4,06	1,24
3.Participative decision making			…	29**	.27**	22**	-.06	3,84	1,29
4.Critical thinking				…	.60**	.43**	-.20**	4,46	.568
5.Masterygoal orientation					…	.59**	-.03	4,53	1,00
6. Performance-prove goal orientation						…	.20**	4,72	1,06
7. Performance-avoid goal orientation							…	3,04	1,17

* p < .05, ** p < .01

Table 3 also presents the means, standard deviations of the variables. The means of skill variety, autonomy and PDM and are found as 3.73, 4.06 and 3.08 over 6. So, it can be said that the participants were a little bit more autonomous than the average and they were performing a little more challenging tasks than the middle level-challenging ones. The rate of participants‟ participation in decision making was low. However, it is considered as close to moderate. The mean of participants‟ CT is 4.46. This proves that they usually used critical thinking process. In terms of AGO, the participants implied more tendency to performance-prove goal orientation (Mean= 4.72) than mastery goal orientation (Mean= 4.53). Finally, their performance-avoid goal orientation is moderate (Mean= 3.04).

4.3. REGRESSION ANALYSES

In the first step, the mediator was regressed on the independent variable; in the second step, the dependent variable was regressed on the independent variable and in the final step, the dependent variable was regressed on both the independent and the mediator variables. According to the three-step approach, if the independent variable influenced the mediator in the first equation and the dependent variable in the second equation; and if the mediator influenced the dependent variable in the third equation while the influence of the independent variable on the dependent variable was either diminished (partial mediation) or completely disappeared (full mediation), then the mediation was evident.

In Table 4 (column 1) the contribution of the factors of the independent variable to the mediator was examined for the first model. The analysis result demonstrates that only PDM can statistically explain CT (β=0.24; P <.01). In the second model, the contribution of the factors of the JC to achievement goal was tested (Table 4; columns 2, 3 and 4). The regression shows that skill variety and PDM have significant influence on mastery goal orientation [(βskill variety =0.16, βmastery goal orientation =0.23; p <.01), (Table 4, column 2)]. PDM has also an influence on performance-prove goal orientation [(β=0.19; p <.05), (Table 4, column 3)]. Autonomy is found to have no significant influence on the factors of the dependent variable. PDM and skill variety have either no influence on performance-avoid goal orientation (Table 4, column 4).

Table 4: Multiple Regression Analysis: Step 1 and 2

	Moderator	Factors of dependent variable		
	Step1	**Step2**	**Step2**	**Step2**
	Critical Thinking	**Mastery**	**Prove**	**Avoid**
	Beta	**Beta**	**Beta**	**Beta**
Skill Variety	.02	.16**	.10	.05
Autonomy	.07	-0.4	-0.1	.06
Participative decision making	.24**	.23**	.19*	-.11
R	.30	.31	.24	.08
R^2	.09	.09	.06	.01
Adj R^2	.08	.09	.05	-.003
F	9,412**	10,152***	5,822**	.657

In the present analysis, the variables which were found to have significant explanation in the previous models were included in regression in the last model. As it is seen in Table 4, only PDM explains the variables in the first two steps. In the third step, both independent (PDM) and mediating (CT) variables were entered as independent variables to examine whether they explain the dependent variables or not (mastery and performance-prove goal orientations), (Table 5, column 1 and 2).

Table 5: Multiple Regression Analysis: Step 3

	Factors of dependent variable	
	Step3	**Step3**
	Mastery	**Prove**
	Beta	Beta
Participative decision making	.10*	.10
Critical thinking	.57***	.40***
R	.61	.44
R^2	.37	.19
Adj R^2	.37	.19
F	86,650***	35,001***
*p<.05; **p< .01; ***p< .001		

The explanation of PDM for mastery goal orientation in the second step (β=0.23; p< .01; Table 4, column 2) is seen to be still significant but also diminished (β=0.10; p< .05; Table 5, column 1) in the third step, in which CT is also included in regression. CT is found to explain strongly mastery goal orientation (β= 0.57; p<.001; Table 5, column 1). This result proves that critical thinking partially mediates the relationship between PDM and mastery goal orientation.

While the explanation of CT for performance-prove orientation is significant in the second step (β= 0.19; p< .05; Table 4, column 3); in the third step where CT is included in regression, it is seen that its explanation for performance-prove orientation lessens and becomes insignificant (β=0.10; p> .05; Table 5, column 2). Therewithal, CT is found to predict significantly performance-prove orientation (β= 0.4; p< .001; Table 5, column2).

In the light of these findings, it can be said that CT fully mediates the relationship between PDM and performance-prove orientation. Since there was no variable found to predict significantly performance-avoid orientation, it was not included in the last step of regression (Table 4).

The hypothesis of the present study proposed the mediation of CT in the relationship of each independent variable (skill variety, autonomy and PDM) with AGO. Overall, the results of 3-step regression analysis demonstrate that, CT mediates only the relationship between PDM and, mastery and performance-prove orientations. In this regard, the hypothesis is said to be partially supported.

4.4. The Relationships of Age and Work Tenure with Critical Thinking, Job Characteristics and Achievement Goal Orientations

In this part, CT, JC and AGO values are firstly examined in terms of relationship with age and work tenure. As it is seen in Table 6, the relationship of work tenure with CT and AGO are not found to be significant. As to age, it is found related with skill variety ($r = 0.20$, $p < .001$) and CT ($r = .14$, $p < .05$).

Table6. The Relationships of Age and Work Tenure with CT, JC and AGO

Variables	Age	Work tenure
Skill variety	,20**	,02
Autonomy	,11	,02
Participative decision making	,11	,04
Critical thinking	,14*	,01
Mastery goal orientation	,11	,01
Performance-prove goal orientation	-0,9	-0,9
Performance-avoid goal orientation	-0,4	-0,1
*** p < .05, ** p < .01**		

4.5 Difference Tests for Gender, Education and Occupation

In this part, difference tests are conducted to see the differences of variables among gender, education and occupation groups.

Since the sample size of the education groups in terms of elementary and secondary school graduates, was not large enough to conduct parametric tests, these groups were categorized as one in the analyses. The same situation was realized for the groups of bachelor and master's degree. The sample size of some occupation groups (accountants, managers and security staff) were not large enough, so they were not included in the analyses. The differences of the variables due to gender, education and occupation were tested with independent samples "t" test and One-Way Anova test.

4.5.1. Gender

In order to see how JC, CT and AGO differ according to gender; independent samples "t" test was conducted. To conduct this difference test, it is firstly necessary to examine the Levene test and then test the significance of the p value. Consequently, the Levene test has a p value greater than 0.05 ($p>0.05$), meaning that the variance is equal between the groups of men and women. The t-test shows that only performance-prove goal orientation has significant variance according to gender ($p = .043 < .05$). Accordingly, female participants ($Mean_{women}=4.91$) are more performance-prove goal oriented than male participants ($Mean_{men}=4.65$). Since there is not any other significant difference found in terms of gender, the statistics about other variables are not presented.

4.5.2. Education

In order to test whether JC, CT and AGO show differences due to the education level or not, One-Way Anova test was conducted. To conduct this analysis, the variances of the variables should be homogeneously distributed. The Levene test was firstly conducted to test this condition. As a result, it is indicated in Table 7 that only the p value of performance-prove goal orientation is less than 0.05 (pskill variety=0.28, pautonomy=0.24, pPDM=0.46, pCT=0.38; pmastery=0.20, pavoid=0.06). So, all the variables except performance-prove goal orientation, are convenient to conduct One-Way Anova test.

Table7. Levene's Test for Equality of Variances

	Levene Statistic	P
Skill variety	1,273	,284*
Autonomy	1,400	,243*
PDM	,859	,463*
CT	1,026	,381*
Mastery	1,552	,201*
Avoid	2,530	,057*
Prove	5,628	,001
***P > .05**		

Among all the variables suited for the ANOVA testing, autonomy, PDM and CT values show a significant variance ($p<0.01$) for education. In order to understand which educational groups differ for these values, the Scheffe test was run.

Table 8: ANOVA Test for Education

		Df	Mean square	F	P
Autonomy	Between groups	3	7,218	4,840	,003**
	Within groups	284	1,491		
PDM	Between groups	3	5,705	3,522	0,16*
	Within groups	284	1,620		
CT	Between groups	3	1,508	4,967	,002**
	Within groups	284	,303		

***P < .05**

****P < .01**

Table9. The Descriptive(s) of Autonomy, PDM and CT for the Level of Education

Cc	Elementary & Secondary school (a)			High school (b)			Vocational school (c) Bachelor			Bachelors & postgraduate (d)		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Autonomy	39	3,57^{d**}	1,31	81	3,89d*	1,31	77	4,12	1,20	91	4,39^{ab}	1,11
PDM		3,31^{d*}	1,37		3,77	1,36		3,94	1,11		4,07^{a}	1,278
CT		4,28^{d**}	.59		4,38d*	.59		4,46	.55		4,64^{ab}	.49

*P < .05 **P < .01

**There is a significant variance among means indicated with different letters*

PDM: Participative Decision Making	N : Sample size
CT : Critical Thinking	M : Mean
	SD : Standard Deviation

The Scheffe test results show that participants who have bachelors or postgraduate degree have more autonomous work conditions than the participants who are secondary or high school graduates; and they also participate more in decision making at work than the ones who are elementary or secondary school graduates. There is also an increase in CT value for these participants (Table 9).

4.5.3. Occupation

To analyze the differences of JC, CT and AGO in terms of participants‟ occupations, One-Way Anova test was conducted. The Levene test presents that except for skill variety and autonomy, all the p values are greater than 0.05 (pPDM=0.08, pCT=0.17, pmastery=0.87, pprove=0.40; pavoid=0.23). So, all the variables except skill variety and autonomy are convenient to conduct One-Way Anova test (Table 10).

Table 10.Levene's Test for Equality of Variances

	Levene Statistic	P
Skill variety	2,81	,026
Autonomy	2,43	,048
PDM	2,10	,083*
CT	1,61	,172*
Mastery	,32	,867*
Prove	1,01	,403*
Avoid	1,40	,234*
***P > .05**		

The analyses show that the participants with different occupations exhibit differences in terms of PDM and CT (Table 11). In order to understand which occupational groups differ for these variables, the Scheffe test was run.

Table11. ANOVA Test for Occupation

		df	M Square	F	P
PDM	Between groups	4	7,17	4,68	0,001***
	Within groups	241	1,53		
CT	Between groups	4	.72	2,38	0,052*
	Within groups	241	.30		

***P < .05**

****P < .01**

*****P< .001**

Table 12.The Descriptive of PDM and CT for the Level of Occupation

	Civil servant(a			Sales clerk (b			Health personnel (c)			Lecturer (d)			Worker (e)		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD
PDM	93	3,56*	1,28	31	4,00	,91	31	3,99	1,21	39	4,39[ab] 4,07[a]	1,11 1,278	52	3,36*	1,44
CT		4,54	,53		4,25*	,65		4,49	,47		4,64[ab]	.49		4,40	,61

**There is a significant variance among means indicated with different letters*

PDM: Participative Decision Making

CT : Critical Thinking

N : Sample size

M : Mean

SD : Standard Deviation

The Scheffe test results show that PDM is mostly practiced by lecturers, civil servants and workers respectively. As to CT, it is mostly perceived by lecturers (Table 12).

CONCLUSION and DISCUSSION

In this section, all the findings that are acquired at the end of the research are discussed in terms of consistency with the research model and literature. As it is known, the research model is built on the mediating role of critical thinking (CT) in the relationship between job characteristics (JC) and achievement goal orientations (AGO). In terms of reliability, all the three factors of the achievement goal scale, which was formed by some items of Vandewalle (1997) and Elliott's (1999) scale, were found to be reliable enough to examine.

Participative decision making (PDM), which is the independent variable of the research was measured by Veldhoven and Meijman's (1994) scale. The reliability of the scale in the present study was found to be higher than the one in their study. Autonomy, which is another independent variable.The reliability of the scale was found to be adequate and consistent with findings. The last independent variable of the research, skill variety was aimed to be measured by a total of 5-item scale; that is formed by two items added to Hackman and Oldham's (1980) scale. The reliability analysis indicated that an item reduced internal consistency of the scale; so, the item was removed from the scale. Consequently, the reliability of the 4-item scale of skill variety was found to be higher than Hackman and Oldham's scale. The reliabilities of both the JC and the AGO scales were found to be satisfactorily high and consistent with the findings in literature.

So far, the reliability analyses of the scales that are used in the study are discussed. The factor analyses of the scales are handled next. Since the each of the scales that measure JC dimensions were developed distinctly by various researchers, there was no need to conduct a factor analyses for these dimensions. For CT, the factor analysis did not bring out meaningful factors. The reason for this might be the insufficiency of the sample size. So the variable was handled as a whole factor in the analyses. Vandewalle (1997) and Elliott (1999) have acquired three factors for AGO: Mastery, performance-prove and performance-avoid orientations. In the present study, the same factors were acquired.

This research, determined the mediating effect of CT to the explanation of PDM for AGO. The mediating effect of CT on the relationship between PDM and performance-prove goal orientation is fully supported; whereas on the relationship between PDM and mastery goal orientation, it is partially supported. These findings indicate that providing JC that explain employees‟ CT, lead them to positive goal orientations. In terms bringing new findings about these variables to literature, this study is said to bear value. As it seems, the concept of CT has been studied in the domain of education so far. However, it is also a considerable subject in organizational studies. The findings of this study are consistent with the past research that got attention for the importance of CT in work life (Deal, 2003; Fiore et al., 2005; Fischer et al. 2009; Harvey, 1999; Jackson, 2008; Kudisch & Hoffman, 2002;

Mariani, 1994; Novelli Jr. & Taylor, 1993; Park & Kim, 2009; Ricketts & Rudd, 2002; Trent & Rose, 2006). These findings are believed to lead to efficient implementations in management.

Besides, the explanation of skill variety for mastery goal orientation was independently found from the one for CT. This finding shows that skill variety should be considered as an independent variable in the way of orienting employees towards mastery goals. According to the findings, skill variety was said to explain mastery goal orientation and PDM was said to explain CT. It is important to know that tasks that require various skills, delegating right to speak and creating discussions that require CT, bring employees to mastery goal orientation. Consequently, delegation of right to have a say in decision making leads an employee to motivate for achievement. It can also be said that the organizational environment in which PDM is practiced, gives rise to CT and creativity.

It was seen that autonomy did not explain employees‟ CT level and any AGO. In literature, PDM and autonomy were similarly defined (Alutto & Acito, 1974; Moore, 2000; Vroom, 1964). It was because the items of the scales used in the research were formed for only decision making situations. In fact, PDM and autonomy contain different conceptualizations. While autonomy represents the freedom of deciding how and when to perform tasks, PDM represents the freedom of deciding commonly on employee issues. Acquiring different results for PDM and autonomy in this research supports this distinction. In other words, this research set light to the points where these two variables distinct.

Performance-avoid orientation could be explained neither by the independent variables nor by the mediator. The reason for this may come from social desirability bias in answering the items.

In terms of demographic findings, the level of CT increased as the employees age got older. As it can be said, individuals CT increases as he/she gets matured and gains experience in life. So this finding is said to be consistent with literature. Besides, skill variety was found to be increased as age did. This can be explained with the awareness of various skills that are required for certain tasks as one gets older. The research acquired no significant finding about work tenure. Accordingly, experience is said to be not related with CT and AGO.

As to mean scores of the sample groups, the greatest means were found for CT, mastery and performance-prove goal orientations. The score for CT expresses the usage of CT process of the participants. It was seen that participants were more likely performance-prove goal oriented than mastery goal oriented. The possible reason of this finding is that employees perceive more competition in work environment than in education.

In terms of gender, it was seen that female participants were more performance prove oriented. Accordingly, female employees might perceive more competition than male employees. Other than these finding, there was no difference found between female and male groups.

The participants who had bachelors or over degree were found to participate more in decision making and had more autonomous work environment than the ones who were elementary and secondary school graduates. These participants were also found to work in a more autonomous environment than high school graduates. It proves that educational degree affects the characteristics of one's job. As the educational level of an individual increases, he/she has more qualified JC. Besides, the CT level was found to be highest for the university and post-graduates. These findings prove that education is positively related to CT and they are consistent with literature. But only vocational school graduates and other educational groups did not show any differences. Educational level did not either show differences for AGO.

Analyses showed that occupational groups differed in terms PDM and CT. Lecturers were the group which had the highest score on CT. Civil servants and workers follow that respectively. Lecturers encourage their students to participate in decision making in class environment and intensify their autonomy and CT process. Naturally, they are expected to work in an autonomous environment where PDM is practiced. CT level was seen different between lecturers and sales clerks. Lecturers were found to think more critically than sales clerks. It is because CT progress as the education level increases.

LIMITATIONS and RECOMMENDATIONS

The findings of this research depend totally on the responses of the participants. So, there could be social desirability bias in answering questions. Low scores on performance-avoid goal orientation may be explained by that. Besides, JC were not objectively measured but the perceptions of the participants were taken in account. Conducting research on participants who performed a job requiring various skills in an autonomous environment where PDM process was officially carried out, could might lead to acquire more reliable results.

In the analyses, CT could not be divided to sub-dimensions because of insufficiency of sample size. Examining CT under sub-dimensions could provide more reliable results. Lastly, conducting this research on different work domains can bring out different findings.

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Appendix : The Scale Items

PDM Items

I have the right to say a “word” in the decisions taken about my work.
I participate in the decision making process on business related issues.
I have the right to say what is part of my job, what is not.
I am directly involved in the decisions taken in my department.
I have a say in sharing things between me and my colleagues.
I can discuss business problems with my supervisor
I have the opportunity to evaluate various issues related to work with my supervisor

Autonomy Items

I decide which task I will perform during the day
I decide when to start and finish my missions
I decide in what order to do my tasks
It is my responsibility to solve the problems I encounter while performing my duties
I decide which method I will perform my duties

Skill Variety Items

My job allows me to use my various skills.
I use the knowledge I have while doing my job
My work requires creativity
My job requires me to acquire new skills.

CT Items

1. I like to introduce new theories to events.
2. It is very important to me to be open-minded against different worldviews.
3. I find difficult to ”put myself in their shoes” in order to better understand the people in front of me
4. I feel uncomfortable with criticism
5. I especially want to learn about difficult topics
6. It is difficult for me to be flexible in my thoughts
7. I also consider opinions that differ from my own
8. I find difficult to correct my own thoughts
9. I usually try to be aware of the latest news from many different sources (newspaper, TV Channel, radio etc...)
10. I believe immediately, without questioning the reliability of the information
11. I like to struggle and try to know how everything works

Mastery Goal Orientations items

I like challenging by performing new tasks where I will acquire new skills
I do not hesitate to take risks in order to improve my skills
I prefer to work in jobs where skills and superior talents are required
I like challenging tasks so I can learn rapidly
I would like to learn as much as possible in my job
I look for the ways to gain new knowledge and skills in my job

Performance Prove Goal Orientation Items

My performance must be higher than the others
I must do my job well compared to other employees
I like that my colleagues to be aware of how well I am doing my job

I prefer to work in the area that can show my skills
I try to show the skills that will make me stand out compared to my colleagues

Performance Avoid Goal Orientation Items

Worrying about poor performance is one of the main factors that affect my behavior at work
I avoid getting new missions that are inadequate for me
I worry about looking clumsy while I am doing a job
I stay away from jobs I will perform poorly
Testing my knowledge of my work disturbs me