

## Auxiliary Elements to Overcome the Resistance to Change: An Empirical Study

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### ARTICLE INFO

### ABSTRACT

#### Keywords:

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**Purpose** – Self-efficacy and ego resilience are known as factors that positively affect employees' attitudes. It will be useful to determine appropriate attitudes to overcome the resistance to change, a fundamental problem in organizations. This article aims to examine the impact of self-efficacy on ego-resiliency, and impact of self-efficacy, and ego-resiliency on affective resistance and perceptual resistance and examine the mediating effect of self-efficacy affective resistance. In addition, the study aims to make suggestions following results.

**Design/methodology/approach** – Quantitative research method was used in this study. Methodologically the paper relies on the literature review and survey. The sample of the research consists of 500 university students. Data were gathered from 174 students who study at two universities, using a questionnaire, and analyzed with the program Jamovi. Reliability and validity tests were conducted. Also, correlation, regression analyzes were performed to data analyze.

**Findings** – The results revealed that self-efficacy has a positive impact on ego-resiliency. It was seen both self-efficacy and ego-resiliency have a negative impact on affective resistance. While self-efficacy hasn't a significant impact on perceptual resistance, emotional resistance has a significant and negative impact. Also, it is determined that self-efficacy and affective resistance have mediating effects in the relationship between ego-resiliency and perceptual resistance.

**Discussion** – Based on this study results, managers were recommended improving their employees' self-efficacy and ego-resilience and reducing their affective and perceptual resistance to show resistance to changes and accept them quickly.

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## 1. INTRODUCTION

It is a fact that change is inevitable in today's business world, where business life and practices are constantly changing, innovation is mandatory, and industry 4.0 technology dominates. Heraclitus of Ephesus (535-475 BC) said that "change is the only constant" (Reardon, 2017), and so change is significant for the organizations. It was necessary to examine the factors of self-efficacy and ego-resiliency, which are thought to be related to adopting change and resisting change (affective and perceptual).

Although it is vital for organizations, change is undesirable by about 62% of employees (Murphy, 2016). In this study, two dimensions of resistance to change, emotional resistance and perceptual resistance, are discussed. With the change, individuals resist, thinking that their current experiences and knowledge will no longer be inadequate or get extra workload (Murphy, 2016; Reardon, 2017). Affective resistance can be expressed as employees' anxiety and resistance to change due to the deterioration of the order they are accustomed to and the need to adapt to new conditions and people (Oreg, 2003: 683). Perceptual resistance develops with the concerns that individuals will not be able to perform adequately in a job due to their personal inadequacies that can be overcome by improving their self-efficacy. When individuals gain self-efficacy in a subject, they reflect it to other jobs by generalizing and overcome the problem (Bandura, 1977, p. 195). A strong perception of self-efficacy helps in accepting differences and adapting to change (Stajkovic & Luthans, 1998a; Stajkovic & Luthans, 1998b; Bandura, 2009; Çalık, Koşar, Kılınc & Er, 2013; Sasikala & Anthonyraj, 2015: 32; İnandı, Yeşil, Karatepe, & Uzun, 2015; Şahin & Demirel, 2018). Also, ego-resiliency is an essential factor in employees' durability in unexpected and undesired situations (Ferreira, Cardoso, & Braun, 2018). Ego-resiliency indicates the individuals' endurance and adaptation potential to continually changing environments and conditions (Block & Kremen, 1996; Letzring, Block, & Funder, 2005: 396; Farkas & Orosz, 2015; Taylor & Jones, 2020). Alessandri et al. (2016) suggested that ego resiliency needs adolescents to adapt

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themselves to social and emotional changes without having problems. Ego-resiliency is linked with social intelligence that it means a strong relationship with people, openness to novelty, social adaptability, and have a broad perspective (Block & Kremen, 1996). Also, cynicism, an organizational factor, substantially affects organizational change (Aslam, Ilyas, Imran, & Rahman, 2016). On the other hand, high ego-resiliency individuals have low neuroticism levels, fatigue, exhaustion (Miloni, Alessandri, Eisenberg, Castellani, Zuffianò, Vecchione, & Caprara, 2015). Previous studies examined the concepts of self-efficacy, ego-resiliency, and resistance to change about different factors. In addition to these, it needs to examine the employees' reasons in organizations to resist change and the factors that will help them adopt change. In this respect, as practitioners, business leaders at all levels need to know how to successfully manage employee resistance to change and the elements that will ensure cooperation in the change process. Therefore, more research is needed in the literature regarding the impact of self-efficacy and ego-resiliency factors on the concepts of resistance to change (affective resistance and perceptual resistance). The current study aimed to examine the impact of self-efficacy on ego-resiliency and self-efficacy and ego-resiliency on affective resistance and perceptual resistance.

## 2. CONCEPTUAL FRAME

### 2.1. *Self-efficacy*

Bandura (1997) defined self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to manage prospective situations" (p. 2). Self-efficacy guides and helps employees increase and develop their efficacy (Bandura, 1997: 2). Self-efficacy perception of people enables them to behave with self-confidence when needed to critical decisions, cope with obstacles, and use and seize the opportunities (Krueger & Dickson, 1993: 1236; Wood & Bandura, 1989). On the other hand, people low in self-efficacy avoid taking the managerial and personal risk (March & Shapira, 1987). Employees with high self-efficacy are more successful in generating new ideas and applications and adding new features to them by changing the usual methods. They also take more initiative to develop themselves in their professional lives and improve jobs (Ellis & Harper, 1975; Speirer & Frese, 1997; Whyte & Saks, 2007). According to G. Bernard Shaw, unrestrained persons who high in self-efficacy tries to change the world while restrained persons who low in self-efficacy play along with established order (Bandura, 2009: 184). Self-efficacy enhances work performance and other terminal behaviour in working life, for example, sales performance, research productivity, goal achievement, adaptability to advanced technology, and change situations (Bandura, 1997: 73).

### 2.2. *Ego-resiliency*

Firstly, Block and Block (1980) defined ego-resiliency as "the tendency to respond flexibly rather than rigidly to changing situational demands, particularly stressful situations" (p. 70). Later, Block and Kremen (1996) defined ego-resiliency as "a personality trait that refers to the ability to dynamically and appropriately self-regulate, allowing highly resilient people to adapt more quickly to changing circumstances." These definitions helped explain the issue by providing a broader understanding, perspective, and conceptual knowledge of ego-resiliency. According to Block and Block (2006: 318), ego resiliency displays a person's adaptation skills to different situations and indicates dynamic capability when change is inevitably necessary. Also, ego-resiliency means the individuals' enduring psychological construct to adapt to change and reflect on environmental stressors (Ong, Bergeman, Bisconti, & Wallace, 2006; Taylor & Jones, 2020).

### 2.3. *Resistance to Change*

Change refers to employees' giving up existing work styles, enacting new patterns, and operating the business with new ways and techniques that yield more productivity (Zander, 1950; Mintzberg & Waters, 1985; Ford, Ford & D'Amelio, 2008: 363). Organizational change manifests itself in different ways, qualities, and situations over time in organizations (Van de Ven & Poole, 1995: 148). Change is vital for organizations. However, employees resist change, sometimes explicitly or implicitly, thinking that there will be difficulties. Also, they see change as threatening (Schalk, Campbell, & Freese, 1998; Bovey & Hede, 2001; Robbins, Judge, & Breward, 2018: 329; Ansoff, Kipley, Lewis, Helm-Stevens, & Ansoff, 2019: 477). Employees who resist change are those who question management about change (Grama & Todericiu, 2016). According to Ansoff (1990), resistance to change causes retardation and leads to more organizational change expenses. In the case of resistance to change, management's way of dealing with resistance determines the success or failure of change (Pardo del

Val & Martínez Fuentes, 2003). Managers examine resistance to change and use it as a source of information to make change more affective (Piderit, 2000). Piderit (2000) defined the resistance to change as "represented by the set of responses to change that is negative along all three dimensions" (p. 783). Piderit (2000) determined three (negative) attitudes resist to change called affective, behavioural, and cognitive components (Smollan, 2006; Oreg, 2006: 76).

**2.3.1. Affective Resistance.** Affective resistance refers to the individual's feelings about change (Ferreira et al., 2018: 105). Eagly and Chaiken (1998) defined affective attitude as "the feelings, moods, emotions, and sympathetic nervous system activity that people have experienced about an attitude object and subsequently associated with it" (p. 271). According to Zembylas (2019: 2), affective resistance to change is against change in the context of human agency and social structure. Employees show affective resistance to change because of losing control on affairs, lack of psychological resilience, having to learn new knowledge and skills (Pakdel, 2016; Touchaie & Hashim, 2018), need for security, keep on habits, fear of unknown, selective information processing (Robbins et al., 2018: 330), lack of psychological resilience, anxiety about unable to cope with change, and concern that the workload will increase using and decision support systems (Elgohary & Abdelazyz, 2020: 4).

**2.3.2. Perceptual Resistance.** Perceptual resistance to change is defined in this study as the resistance shown due to the perception that the organization will disrupt, confusion, low productivity, unnecessary costs, and the necessity to acquire new knowledge and skills in the process of change. According to Can (2008), the perception of individuals affects their behaviour. People may have misperceptions while evaluating events, and they have an image of the environment in their minds. Depending on these perceptions, they create negative or positive expectations, take an attitude and act accordingly. Employees' misperception of change will cause them to be a beginner in their career, unnecessary expenses for buy new equipment, and disorder in the workplace. Employees may also perceive job insecurity, anxiety, and depression triggered by resistance to change in the workplace. Change is perceived as a challenge and problem by employees due to an atmosphere of uncertainty if it is not planned well (Conner, 1993; Ally, Agbolade, & Adunni, 2016). These perceptions lead to perceptual resistance to change.

### 3. HYPOTHESES DEVELOPMENT

Hypotheses were developed related to self-efficacy, ego-resiliency, affective resistance, and perceptual resistance to determine the factors that impact break the resistance to change.

#### 3.1. *The Impact of Self-efficacy on Ego-resiliency*

Self-efficacy is the belief and power perception that individuals will accomplish a task that develops based on their achievements by overcoming difficult tasks (Stajkovic & Luthans, 1998a: 242; Stajkovic & Luthans, 1998b: 69-70). Ego-resiliency means that individuals can adapt to different situations and control their behavior (Block & Block, 2006: 318). A study on 450 older adolescents in Italy (Miloni et al., 2015) concluded that self-efficacy has a significant and positive effect on ego-resiliency. Moon (2016) conducted empirical research on 145 nurses in South Korea, and she found a significant and positive relationship between ego-resiliency and professional self-concept. Also, she found that there was a significant and positive relationship between self-efficacy and professional self-concept. However, there was not a significant direct relationship between self-efficacy and ego-resiliency. Another research was conducted on 225 social services employees in Spain, and researchers determined that resilience has a mediator role between self-efficacy and well-being (Djoulova et al., 2020). The first hypothesis of this research was developed to test whether self-efficacy has an impact on ego-resiliency.

H1: Self-efficacy has a significant and positive impact on ego-resiliency.

#### 3.2. *The Impact of Self-efficacy on Affective Resistance*

Individuals' self-efficacy perception affects their performance in overcoming the new practices and difficulties they encounter for the first time (Bandura, 1977: 194). Change is vital in organizations. Accordingly, members of the organization's attitude towards change are also of great importance (Giauque, 2015: 71; Grama & Todericiu, 2016: 52-53). Besides, with a successful change process, it can meet the market's future demands and compete effectively with its competitors (Ulrich, 1998; Çetinkaya, Niavand, & Rashid, 2019). Affective resistance is the reaction or emotional response that individuals have initially shown in an emotional context

to changes that may benefit them in the long term. The source of this resistance is the difficulties, stress, or adaptation problems that individuals have experienced due to change before (Oreg, 2003: 683). Oreg, Bayazit, and Vakola et al. (2008: 943), surveyed 4,201 undergraduate students from 17 countries. Their research results showed that emotional reaction to change (affective resistance) is negatively associated with openness. Openness means proactively and voluntarily try in innovation, change, also free and autonomous thoughts, and behaviours (Oreg et al., 2008: 937). Previous research revealed that openness to change is positively related to self-efficacy (Sousa, Coelho, & Guillamon-Saorin, 2012; Sánchez-Cardona, Rodriguez-Montalbán, & Acevedo-Soto, 2012; Barni, Danioni, & Benevene, 2019). In this respect, may be an indirect relationship between self-efficacy and affective resistance. Sasikala and Anthonyraj (2015: 32) studied 77 employees working in manufacturing sectors, and they concluded that there is a significant and negative correlation between self-efficacy and resistance to change. The similar way, the researches were conducted and examined on 1100 teachers working for public and private schools in various cities (Manisa, Ankara, and Mersin) in Turkey (Çalık et al., 2013; İnandı, Yeşil, Karatepe, & Uzun, 2015; Şahin & Demirel, 2018). Results of their research showed that there is not a significant relationship between self-efficacy and resistance to change. Besides, different from other research, İnandı et al. (2015) examined gender, and they revealed that women indicated more affective resistance to change from men. To test whether self-efficacy has a significant impact on affective resistance to change, the following hypothesis was developed:

H2: Self-efficacy has a significant and negative impact on affective resistance to change.

### ***3.3. The Impact of Self-efficacy on Perceptual Resistance***

Perception is when individuals form an opinion upon interpreting their senses, data, or observations about something/somebody or situation they focus on using their experience. Resistance to change stems from the fact that employees do not believe in the necessity of change, thinks that change will harm them and the organization, and have negative feelings about change (Piderit, 2000: 787-788). According to Rafferty and Jimmieson (2017: 251), employees' perceptions of change impact their well-being determine their perceptual resistance. Self-efficacy is not only a motivational argument but also has a potential impact for facilitating health-related behavior change (Williams, & Rhodes, 2016: 117). Before computers, typewriters were being used at workplaces. When the computers began to be used in organizational activities, some officers resisted replacing the typewriter they were used to do. This was their perception that they would not be able to use the computer, although they were using the typewriter very well (Erel, 2000: 28). In the Hill, Smith, & Mann (1987) study, 133 women university students explored a significant relationship between self-efficacy and the use of different electronic devices. This result revealed that the individuals' efficacy beliefs are important in the adoption to change and innovation. In their study with 133 university students, Hill, Smith, and Mann (1987) explored a significant relationship between self-efficacy and the use of different electronic devices. Previous studies also concluded that self-efficacy impacts employees' resistance attitude and behavioral reactions (Compeau, Higgins, & Huff, 1999; Minsky & Marin, 1999; Hunton & Beeler, 1997). These results revealed that individuals' beliefs in their efficacy are important in their adopting change and innovation. However, there is not enough research on whether self-efficacy has an impact on perceptual resistance to change. To fill this gap, the current study was conducted, and the following hypothesis offered:

H3: Self-efficacy has a significant and negative impact on perceptual resistance to change.

### ***3.4. The Impact of Ego-resiliency on Affective Resistance***

According to Block (2002: 123), ego-resiliency indicates adaptively change and flexibility characteristic of a person. Ego-flexibility refers to individuals' capacity to adapt to the change required by the condition and saturate the internal reaction that may occur (Block, 2002: 108). Also, ego-resiliency leads to empathy and makes it easy to adapt to change (Block & Block, 1980). Affective resistance can be seen as the barely perceptible reaction that operates between and under both individual and collective struggles (Hynes, 2013: 573). Zembylas (2019: 8) argued that affective resistance allows us to understand individuals' resistances corresponding to their emotional capacities at a more uncertain social level. Research was conducted with 1473 participants in Hungary. The research results showed that an individual's adaptation capability to different conditions helps individuals solve their problems and accomplish the tasks (Farkas & Orosz, 2015). It can be interpreted as individuals who are compatible with the change in their environment. In other words, individuals with high ego-resiliency are more successful than individuals who are not compatible with the

change in their environment. Ferreira, Cardoso, and Braun (2017) surveyed 323 employees and determined that ego-resiliency was a mediating role on the impact of organizational support on affective resistance against imposed change. This result also means that there is a significant relationship between ego-resiliency and affective resistance. It needs to examine whether ego-resiliency has an impact on affective resistance. Thus, it is asserted the following:

H4: Ego-resiliency has a significant and negative impact on affective resistance to change.

### ***3.5. The Impact of Ego-resiliency on Perceptual Resistance***

Ego-resiliency refers to the meta dimension of the dynamic capacity required for the person to change the level of control in a context in responding to the demands and possibilities that arise according to the situation (Letzring et al., 2005: 396). As individuals' ego-resiliency level increases, their capacity to adapt to changing conditions increases, and as it decreases, they experience problems in terms of developing solutions (Block & Kremen, 1996; Fletcher & Sarkar, 2013; Cicchetti, 2010). Perceptual resistance refers to the individual's resistance by interpreting the different situations and changes that he/she assess via their subconscious mind and personality and thought that would be exposed to the unwanted consequences for him/her. Hurley, Sargeant, Duffy, et al. (2008) conducted an experimental study on 6 physicians and 7 nurses working for two hospitals in Canada. Their study results showed that participants' adoption of inhalers and holding chambers were negatively affected by the perception of increasing their workload and costs. However, any specific study on the impact of ego-resiliency on perceptual resistance was not found in the literature. As negative situation increases, individuals exhibit perceptual resistance behaviours. We thus predict the following:

H5: Ego-resiliency has a significant and negative impact on perceptual resistance to change.

### ***3.6. The Impact of Affective Resistance on Perceptual Resistance***

Affection/emotion and perception are close concepts. Emotions affect the perception of an individual (Zadra & Clore, 2011: 1). Previous research concluded that there was a significant relationship between affective resistance and perceptual resistance. Rafferty and Jimmieson's (2017: 261) study results showed that affective resistance has a mediating role in the relationship between employees' subjective perceptions of change and insomnia and psychological well-being. Reibstein, Lovelock, and Dobson (1980: 374) investigated the relationship between perceptions, affect, and behaviour. Results of their study revealed that perceptions were influenced indirectly by affection. According to Erwin and Garman (2010) and Sorre (2016), employees adopt change emotionally when they participate in decisions about change and break emotional resilience when informed about the change. No research has been found in the literature on the direct effect of emotional resistance on perceptual resistance. Based on the above research results, the following hypothesis has been constructed.

H6: Affective resistance has a significant and positive impact on perceptual resistance to change.

### ***3.7. The Mediative Relationship of Self-efficacy and Affective Resistance between Ego-resiliency and Perceptual Resistance***

The relationships between self-efficacy, ego-resiliency, affective resistance, and perceptual resistance were scrutinized and hypothesized based on literature. Hence, they were not writing again here. At the same time, it is necessary to examine the mediative contribution of self-efficacy and affective resistance to the relationship between ego-resiliency and perceptual resistance. Alessandri, De Longis, Eisenberg, and Hobfoll (2020) researched 173 sophomore students, and research findings revealed that ego resiliency was a significant moderator between daily hassles and emotional inertia. Also, the results showed that ego-resiliency makes flexible and then neutralized the daily stress. Although scanning, any study could not found regarding the mediating effect of self-efficacy and affective resistance between ego-resiliency and perceptual resistance in the literature. Therefore, the following hypotheses were suggested to test the mediating effect mentioned above and fill this literature gap.

H7: Self-efficacy significantly mediates the relationship between ego-resiliency and perceptual resistance to change.

H8: Affective resistance significantly mediates the relationship between ego-resiliency and perceptual resistance to change.

## 4. METHOD

### 4.1. Procedure and Participants

The survey questionnaires consisted of demographic questions, measures assessing participants' perceptions of self-efficacy, ego-resiliency, and the resistance to change. The ethicalness of the research was approved with the decision of Artvin Coruh University Ethics Committee. This study sample consists of 200 students studying in business and technical departments in two universities in Turkey, and they were also selected for entrepreneurship program activities. An award-winning contest was held to select the best entrepreneur project within the scope of the activity. Student groups participating in these activities competed with the entrepreneurial projects they prepared. The researcher was on duty as a jury member in this competition. After the competition, students were invited to complete the questionnaire and objective of the study was explained to them. In a survey, 174 students (64 males and 110 females) participated voluntarily, and a total of 174 useable questionnaires were gathered, and the response rate was 87%. The participants ranged in age from 18 to 25 years ( $M=22.04$ ;  $SD=3.80$ ). The gathered data were analysed with *jamovi* (Version 1.2) statistics software (The Jamovi Project, 2020).

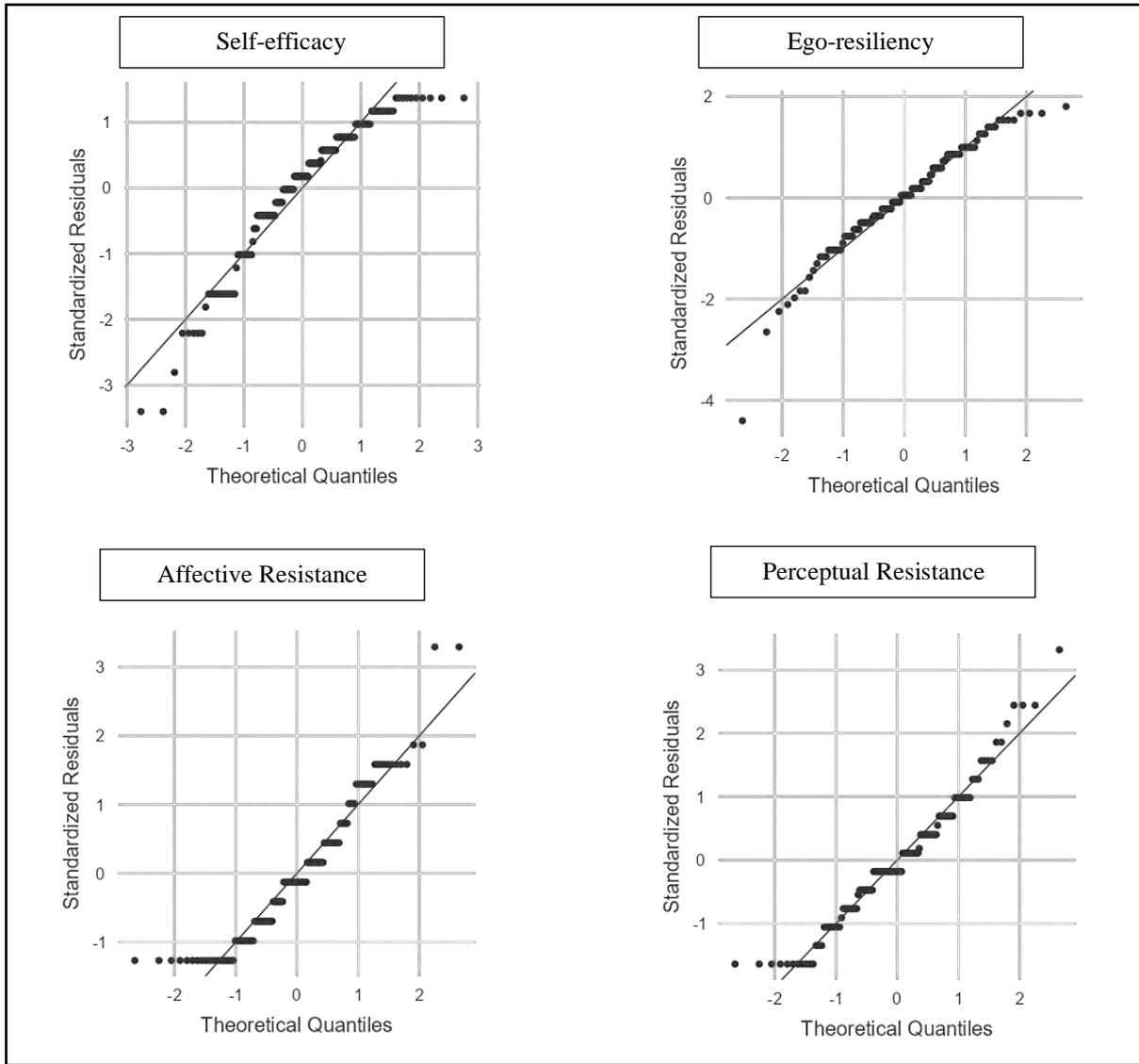
### 4.2. Measurement

The measurement items adapted from the previous related studies and five-point Likert scale, ranging from 1 to 5, were used for all the measures (1 = strongly disagree- 5 = strongly agree). This study used a self-efficacy scale to measure the self-efficacy perception of participants. The self-efficacy scale was developed by Luthans, Youssef, & Avolio (2007) as a dimension of the psychological capital scale and contained six items. Ego-Resiliency Scale, developed by Block and Kremen (1996), is the other scale used to measure ego-resiliency with fourteen items. In the current study, the Resistance to Change (RTC) scale was used to measure the individuals' natural tendency to resist the change. Although the RTC was three-dimensional in the original scale (Oreg, 2006), two dimensions were used in this study. The first scale is the affective resistance to change scale, developed (2006) related to the affective reaction's dimension to change. The affective resistance scale was modified from the original RTC scale. It was used as an affective resistance dimension and contained five items (Oreg, 2006). Secondly, the perceptual resistance scale is developed for this study by the researcher. This scale was used to measure the perceptual resistance of participants to change and contains five items. They are; "I think the employees will be like a newbie again and the efficiency will decrease due to the change," "I think things will hinder during the pieces of training given for adaptation to change.", "Purchasing new machinery and equipment because of change is an unnecessary expense for the organization," "I think the change will confuse the workplace," "I do not think it is right to oblige an unwelcome innovation"

## 5. DATA ANALYSIS

### 5.1. Normality, reliability, and validity tests

The Shapiro-Wilk test and the output of a normal Q-Q Plot were used in this data to determine normality graphically. The Shapiro-Wilk test results (Statistic = .991;  $p= .687$ ) and standard Q-Q plots of all scales showed that the data were normally distributed. The standard Q-Q plots of scales are given in Figure 1 (Field, 2009).



**Figure 1.** Normal Q-Q plots of scales.

According to Sekaran (2003: 294), the number of samples calculated on a 95% confidence level and 5% acceptable error, 132 participants are sufficient samples for a population of 200 people. As stated above, the sample size of this study (174) is more than enough. The research scales' reliability was measured with Cronbach's Alpha values, widely used in the literature. Two items with Cronbach's alpha values below 0.70 were removed from the two scales (1 item from ego-resiliency and 1 item from affective resistance to change scales). Later, Cronbach's Alpha values of the scales consist of values above 70, which Nunally (1978) defined as acceptable.

Factor Analysis was used in the validity analysis of the study. Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity were applied to determine whether the adequacy of sampling and appropriateness of data for factor analysis. The acceptable KMO value should be between .50 and 1.0 for appropriateness. KMO values are in the .90s, marvellous; in the .80s, meritorious; in the .70s, it is seen as a middling level (Kaiser, 1974: 35; Field, 2009: 647). KMO values are in this study determined between .73 and .91. Regarding KMO coefficients, it was determined that the scales were well compatible, and the factor loads of the variables were above .40, which is considered quite well. Factor loading of items should be over .40 for acceptable (Field, 2009: 638), and all the item loadings of the study are more significant than the .40 level. The results of the reliability and validity tests are shown in Tables 1 and 2.

**Table 1.** Reliability, Kaiser-Meyer-Olkin (KMO), and Bartlett's Test of Sphericity Results.

Factor	Item Number	Cronbach's Alpha	KMO-MSA	Bartlett's Test of Sphericity			% of Variance	Eigenvalue
				$\chi^2$	df	<i>p</i>		
Self-efficacy	6	0.730	0.909	364	15	<.001	58.3	3.4965
Ego-resiliency	13	0.829	0.837	435	78	<.001	29.5	3.8287
Affective resistance	4	0.824	0.793	171	6	<.001	54.2	2.1685
Perceptual resistance	5	0.724	0.728	118	10	<.001	36.1	1.8058

**Note:** KMO-MSA: KMO Measure of Sampling Adequacy

**Table 2.** Factor loadings.

Items	Factor Loadings							
	Self-efficacy		Ego-resiliency		Affective resistance		Perceptual resistance	
	Factor Loading	Uniq.	Factor Loading	Uniq.	Factor Loading	Uniq.	Factor Loading	Uniq.
1	0.780	0.392	0.513	0.737	0.753	0.432	0.610	0.628
2	0.736	0.458	0.487	0.762	0.727	0.472	0.730	0.467
3	0.767	0.412	0.677	0.542	0.755	0.430	0.612	0.625
4	0.767	0.412	0.536	0.712	0.709	0.497	0.576	0.669
5	0.735	0.459	0.363	0.868			0.441	0.805
6	0.793	0.371	0.568	0.677				
7			0.526	0.723				
8			0.638	0.593				
9			0.522	0.728				
10			0.555	0.692				
11			0.613	0.624				
12			0.559	0.688				
13			0.419	0.825				

**Note:** Uniq.: Uniqueness

## 5.2. Correlation analysis

Correlation analysis was conducted using R software (R Core Team, 2019) to test whether there is a significant relationship between self-efficacy, ego-resiliency, affective resistance, and perceptual resistance as the factors assessed in the study. As a result of the correlation analysis, it was determined that there was a significant and positive relationship between the variables of the research, self-efficacy, and ego-resiliency ( $r = .562$ ;  $p < .001$ ) and between affective resistance and perceptual resistance ( $r = .516$ ;  $p < .001$ ). Simultaneously, both self-efficacy and ego-resiliency are significantly and negatively correlated with affective resistance and perceptual resistance. The correlation analysis results of the study variables, their mean values, and standard deviations are given in Table 3.

**Table 3.** Correlation Matrix

Variables	Mean	Std. Dev.	Self-efficacy	Ego-resiliency	Affective resistance	Perceptual resistance
Self-efficacy	4.11	0.730	—			
Ego-resiliency	3.83	0.560	0.562***	—		
Affective resistance	2.24	0.752	-0.377***	-0.382***	—	
Perceptual resistance	2.11	0.877	-0.351***	-0.307***	0.516***	—

**Note:** \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ;  $N=180$

### 5.3. Regression analysis

Regression analysis predicts a dependent variable from several predictor (independent) variables (Field, 2009). Therefore, multiple regression and simple linear regression analyses were conducted at three stages with R to determine whether independent variables have a significant impact on the dependent variables (Fox & Weisberg, 2018). It was determined that the confidence intervals were acceptable and 95% level. Durbin-Watson values were acceptable level (between =1.50 and 2.50) and the results showed that there was no autocorrelation in the research model. The results of regression models fit measures, omnibus ANOVA tests, and coefficients were showed in Tables. Firstly, a simple linear regression analyses was conducted to test the impact of self-efficacy on ego-resiliency. Both VIF and tolerance values were 1,00. The results are indicated that self-efficacy has significant and positive impact on the ego-resiliency ( $\beta = 0.427$ ;  $p < 0.01$ ;  $R^2=0.315$ ). According to this result, first hypothesis of the research (H1) is accepted. The results of first regression test were showed in Table 4.

**Table 4.** First Regression Model Results

Dependent Variable: Self-efficacy								Overall Model Test			
Model	Estimate ( $\beta$ )	MS	SE	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	t	F	df1	df2	p
Intercept	2.077		0.2418	0.562	0.315	0.310	8.59				
Ego-resiliency	-0.427	0.0939	0.0580				7.37	54.4	1	118	<.001

**Note:** MS: Mean Square; SE: Standart Error

Second, a multiple regression was performed to determine whether self-efficacy and ego-resiliency has a significant impact on affective resistance. Collinearity test results of self-efficacy and ego-resiliency accurate that VIF values of both of variables were 1.46 and tolerance values were 0.685. These values indicated that there was not a multicollinearity problem (Hair et al., 2010). Self-efficacy and ego-resiliency have significant negative impact on the affective resistance ( $\beta = -0.281$  and  $\beta = -0.393$  respectively;  $p < 0.05$ ;  $R^2=0.185$ ). Based on the results, second (H2) and fourth (H4) hypotheses were accepted. The regression analysis results were showed in Table 5.

**Table 5.** Second Regression Model Results

Dependent Variable: Affective Resistance								Overall Model Test			
Model	Estimate ( $\beta$ )	MS	SE	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	t	F	df1	df2	p
Intercept	4.794		0.528	0.431	0.185	0.172	9.07		2	117	<.001
Self-efficacy	-0.281	3.515	0.120				2.49	5.49	1		0.021
Ego-resiliency	-0.393	3.970	0.158				2.34	6.20	1		0.014

**Note:** MS: Mean Square; SE: Standard Error

Finally, another multiple regression was conducted to determine whether self-efficacy, ego-resiliency, and affective resistance has a significant impact on the perceptual resistance. This analysis is a test that examined the impact of all independent variables on perceptual resistance collectively. Collinearity test results of ego-resiliency, self-efficacy, and affective resistance accurate that VIF values less than 4 (1.51, 1.50, and 1.22 respectively) and tolerance values over 0.2 (0.66, 0.67, and 0.82 respectively). Multilinear regression results showed that affective resistance has a significant positive impact on the perceptual resistance ( $\beta= 0.388$ ;  $p < 0.01$ ). However, self-efficacy ( $\beta= -0.169$ ;  $p > 0.05$ ), and ego-resiliency has no significant impact ( $\beta= -0.063$ ;  $p > 0.05$ ) on the perceptual resistance ( $R^2=0.314$ ).  $R^2$  value indicated that independent variables of the model explain 31.4 percent of variance in perceptual resistance. The regression results supported the research hypotheses H6. However, the third (H3) and fifth hypothesis of the study (H5) were rejected due to a lack of a significant relationship between self-efficacy, ego-resiliency, and perceptual resistance. The regression analysis results were presented in Table 6.

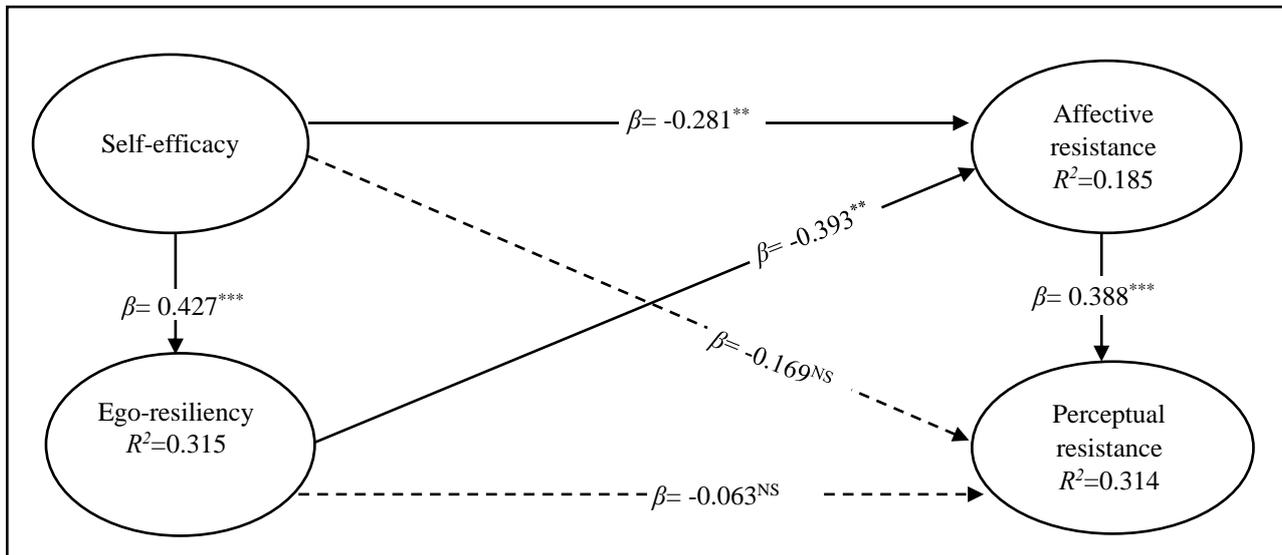
**Table 6.** Third (Final) Regression Model Results

Dependent Variable: Perceptual resistance								Overall Model Test			
Model	Estimate ( $\beta$ )	MS	SE	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	t	F	df1	df2	p
Intercept	2.3553		0.5590	0.560	0.314	0.296	4.214	16.9	3	111	<.001
Self-efficacy	-0.1690	1.1416	0.0999				-1.691	2.860	1		0.094
Ego-resiliency	-0.0630	0.0939	0.1299				-0.485	0.235	1		0.629
Affective resistance	0.3881	10.9788	0.0740				5.244	27.503	1		<.001

**Note:** MS: Mean Square; SE: Standard Error

The result of hypothesis testing and the research model is presented in Figure 1.

**Figure 1.** Research Model



**Note:** \*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; NS = Non-significant.

#### 5.4. Mediating Effect Analysis

Mediative analyses were performed by adopting the mediation procedure to test whether there is a mediating effect of self-efficacy and affective resistance in the relationship between ego-resiliency and perceptual resistance to change (Tingley, Yamamoto, Hirose, Keele, & Imai, 2014; Sales, 2016). R package was used to analyze via Jamovi (The jamovi Project, 2020; R Core Team, 2019; Revelle, 2019; Gallucci, 2019). Analysis results revealed that both self-efficacy and affective resistance mediate the relationship between ego-resiliency

and perceptual resistance to change. The mediating effect analysis results of mediator self-efficacy and its model are presented in Table 7 and Figure 2. At the same time, the results of affective resistance, the other mediator, and its model are presented in Table 8 and Figure 3.

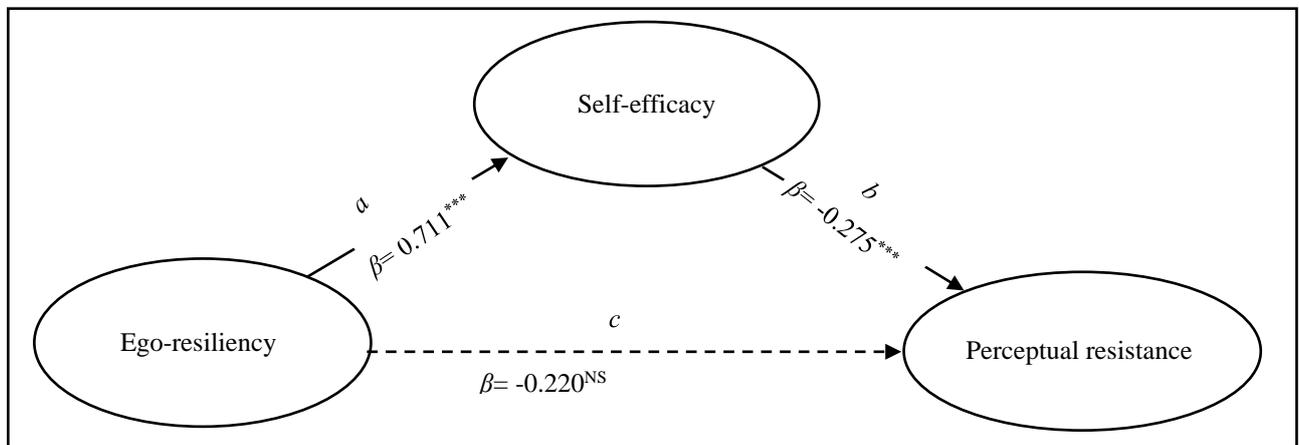
**Table 7.** Mediation Estimates (Ego-Resiliency/Self-Efficacy/Perceptual Resistance)

Effect	Label	Mediation Estimates	SE	95% Confidence Interval		Z	p	% Mediation
				Lower	Upper			
Indirect	a × b	-0.195	0.0812	-0.355	-0.0362	-2.41	0.016	47.1
Direct	c	-0.220	0.1388	-0.492	0.0523	-1.58	0.113	52.9
Total	c + a × b	-0.415	0.1191	-0.649	-0.1816	-3.49	<.001	100.0

**Note:** a: Ego-resiliency → Self-efficacy path

b: Self-efficacy → Perceptual resistance path

c: Ego-resiliency → Perceptual resistance path



**Note:** \*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.1$ .

**Figure 2.** Path estimates in the mediation effect model of self-efficacy

Although there was no significant direct relationship between ego-resiliency and perceptual resistance, self-efficacy has a significant indirect positive effect by mitigating the negative relationship between ego-resiliency and perceptual resistance ( $\beta = -0.195$ ;  $Z = -2.41$ ;  $p < 0.001$ ). Also, the percentages of the indirect effect of self-efficacy in the mediation model were 47.1%. Based on these results, it was confirmed that self-efficacy plays a role as a full mediator to explain the relationship between ego-resiliency and perceptual resistance. Also, test results supported the research hypothesis (H7). This negative effect refers that as self-efficacy increases, perceptual resistance to change decreases.

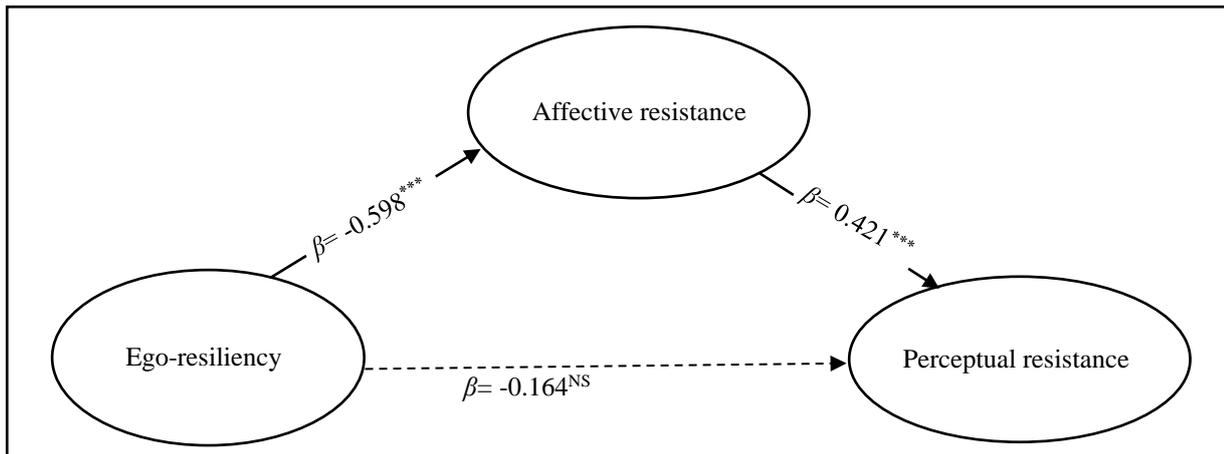
**Table 8.** Mediation Estimates (Ego-Resiliency/Affective Resistance/Perceptual Resistance)

Effect	Label	Mediating Estimate	SE	95% Confidence Interval		Z	p	% Mediation
				Lower	Upper			
Indirect	a × b	0.250	0.0715	-0.392	-0.1114	-3.52	<.001	60.6
Direct	c	-0.164	0.1133	-0.386	0.0582	-1.45	0.148	39.4
Total	c + a × b	0.086	0.1196	-0.650	-0.1810	-3.47	<.001	100.0

**Note:** a: Ego-resiliency → Affective resistance path

b: Affective resistance → Perceptual resistance path

c: Ego-resiliency → Perceptual resistance path



Note: \*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.1$ .

Figure 3. Path estimates in the mediation effect model of affective resistance

In the final model, as in the previous model, the direct effect (c path) was negative and not statistically significant. The R package tested the mediator's contribution (affective resistance) to the relationship between ego-resiliency and perceptual resistance via jamovi (R Core Team, 2019; Revelle, 2019; Gallucci, 2019; The jamovi Project, 2020). The mediating test results revealed that affective resistance has a significant indirect negative effect ( $\beta = -0.164$ ;  $Z = -3.52$ ;  $p < 0.001$ ) and a full mediative effect on the relationship ego-resiliency and perceptual resistance. The effect of affective resistance as a mediator was 60.6% of the total effect. Based on these results, the eighth hypothesis of this study (H8) was accepted, and it was determined that as affective resistance increases, perceptual resistance also increases with its harmful effect.

## 6. DISCUSSION

The impact of self-efficacy on ego-resiliency, affective resistance, perceptual resistance, and ego-resiliency and affective resistance on perceptual resistance were explored in this study. The hypotheses were extracted from related literature and tested based on the data gathered from two universities in Türkiye. The results showed that self-efficacy has a significant and positive impact on ego-resiliency, and it has negative impact on affective resistance. On the other hand, self-efficacy hasn't a significant impact on perceptual resistance. Also, ego-resiliency has a significant and negative impact on affective resistance. At the same time, affective resistance positively impacts perceptual resistance. Thus H1, H2, H4, and H6 hypotheses were confirmed. However, there was no significant impact of ego-resiliency on perceptual resistance, and so H3 and H5 was rejected. The study results were discussed in four stages.

With the first hypothesis of the study, the impact of self-efficacy on ego-resiliency was tested, and the analysis result showed that it had a significant impact ( $\beta = 0.427$ ;  $p < 0.01$ ;  $R^2 = 0.315$ ). Both beta coefficient and  $R^2$  values were showed that this impact is essential. While this result supported the study conducted by Milioni et al. (2015), it did not support Moon's result (2016). The result of the analysis showed that as self-efficacy increased in individuals, the ego-resiliency also increased. Thus, it would be useful for employers to choose self-efficacy when recruiting and help employees develop their self-efficacy.

Self-efficacy ( $\beta = -0.281$ ) and ego-resiliency ( $\beta = -0.393$ ) has a significant and negative impact on affective resistance ( $p < 0.05$ ;  $R^2 = 0.185$ ). Çalık et al. (2013), although they did not find a significant relationship between self-efficacy and emotional resistance in their research, these results supported the theoretical arguments arguing the relationship between self-efficacy and affective resistance (Sasikala & Anthonyraj, 2015). This negative impact means that as self-efficacy and ego-resiliency increase, affective resistance will decrease. Differently from these, İnandı et al. (2015) determined that women show more affective resistance to change. On the other hand, some factors known as negative for organizations, cynicism, self-serving decisions, frustration, etc., increase the resistance to change (Yukl & Gardner, 2019: 325). These results indicate that employees' self-efficacy and ego-resiliency should be improved by considering women's affective resistance to decrease resistance to change.

In the third stage of the analysis, it was seen that while self-efficacy hasn't significant impact on perceptual resistance ( $\beta = -0.169$ ;  $p > 0.05$ ). However, affective resistance has a positive impact ( $\beta = 0.388$ ;  $p < 0.01$ ). Affective resistance positively affects perceptual resistance and explains 31.4 percent of perceptual resistance ( $R^2 = 0.314$ ). However, ego-resiliency hasn't a significant impact on perceptual resistance ( $\beta = -0.063$ ;  $p > 0.05$ ). The results regarding that there isn't a significant relationship between self-efficacy and perceptual resistance did not support the previous study (Hill et al., 1987). At the same time, affective resistance has a mediating role in the relationship between employees' subjective perceptions of change (Rafferty & Jimmieson, 2017: 261). The perception of un-solicited status develops a negative reaction to adopting new citations (Duffy et al., 2008). In brief, employees' resistance attitude is affected by self-efficacy, and then they shape their behavior whether they will show resistance to change (Compeau et al., 1999; Minsky & Marin, 1999; Hunton & Beeler, 1997). Since individuals gain self-efficacy by having a skill and doing their work very well over a long time, they resist change to fear losing these advantages. If the employees are considering the change, they do not put-up affective resistance and accept the change (Erwin & Garman, 2010; Sorre, 2016).

The mediative impacts of self-efficacy and affective resistance between ego-resiliency and perceptual resistance were discussed in the fourth stage. Although there was a study in the literature on the moderator impact of ego-resiliency between daily hassles and emotional inertia (Alessandri et al., 2020), there was no study examining the mediating impact of self-efficacy and affective resistance between ego-resiliency and perceptual resistance. Thus, this study is the first to examine the mediating effect of self-efficacy between ego-resiliency and perceptual resistance. The analysis results showed that there was not a significant direct relationship between ego-resiliency and perceptual resistance. However, self-efficacy and affective resistance have significant full mediative roles between ego-resiliency and perceptual resistance. This result revealed that employees' self-efficacy and emotional resistance create a positive impact on the relationship between self-resilience and perceptual resistance.

There is a limitation in the current study to be considered. This limitation is that participants in the current study come from two universities. This study's participation rate can be considered a relatively small sample size and maybe creates a handicap in generalizing the study results. Therefore, it is recommended to conduct studies with more participation, including other universities or sectors in the future.

## 7. CONCLUSION

The current study revealed that self-efficacy alone improved the ego-resiliency. The high self-confidence of the individuals not only increases their ego-resilience, but also enables them to show a more positive approach to change. At the same time, it was determined that individuals with high levels of self-efficacy and ego-resiliency reduced affective resistance to change. On the other hand, affective resistance increased perceptual resistance to change. These results emphasized the advantages of self-efficacy and ego-resilience to break affective resistance to change. In the relationship between ego-resilience and perceptual resistance, it was found that both self-efficacy and affective resistance have significant and negative mediating effects. Since the students, who are the participants of the research, will start working in the enterprises soon, their perceptions can be accepted as the perceptions of the employees. Accordingly, it was understood that individuals' self-efficacy and ego-resilience indirectly reduce perceptual resistance. The results suggest that the business administrators need to improve their employees' self-efficacy, ego-resiliency and break their resistance to change to create a favourable opinion toward change in the organization process, production, or/and the other activities. Managers also need to enable employees' participation in decisions. Employees who have little or no resistance to change show some personality traits additionally. These are openness to experience, fearlessness from the unknown, internal locus of control, willingness to learn and take risks, and flexibility in behaviour. Therefore, it is recommended to select people with appropriate personalities who easily accept and adapt to change to employ (Robbins et al., 2018: 331).

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