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**A Perspective regarding the Role of Higher Education in Developing Leadership Competencies**

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# A Perspective regarding the Role of Higher Education in Developing Leadership Competencies

## ABSTRACT

The present study aims to examine the effects of higher education on leadership competencies from the student's perspective. The model of the research is based on surveying. The data collection tool was prepared by using the 3M's Leadership Competency Model developed by Alldredge and Milan (2000). Twelve (12) Leadership competencies of the original scale were adapted to the questionnaire. In the questionnaire, to which extent their higher education, have impact on these leadership competencies was asked to the participants. As a measurement tool, a graded questionnaire of 5-point-Likert scale was used. The survey was conducted among students who got scholarship from National Education Ministry of Turkish Republic to have their higher education abroad. The participants have still been studying, or have already graduated from a higher education institution abroad. In this scholarship program, there are thousands of students studying in 511 different programs in 67 countries, most of them studied or has been studying in the USA and the UK (MEB: 2017). The participants of the questionnaire were contacted through various social media tools and they filled out the questionnaire online. The total number of the participants was determined as 300, and the survey has been terminated when the number was reached. In the study, it has been determined that the relation between the students' higher education program and the leadership training has an impact on the outcomes.

**Keywords**: leadership, development, competencies, higher education

## 1. Introduction

Leadership and leadership training has become an important topic both in the academic and business world in the recent years. Although there are some who defend the idea that leadership is limited to innate skills and it cannot be learned later, the general belief is that leadership training is extremely important. In the present scenario, a competent leader is defined as an expert with various qualifications and skills (Wadekar, 2007). The organizations must have enough number of qualified global managers especially to compete effectively in the global market. Also, to be able to follow the current and future developments in the globalization, the managers and leaders in the company must be competitive in the global market. In addition to this, to be able to employ skilled global managers efficiently, the companies should first focus on the right criteria for the recruitment process, and they should help to determine and develop the competencies that the global managers must have (Wu and Lee, 2007). The main purpose of developing leadership skills is to help an organization achieve its strategic goals. Because, while the business world is becoming more and more competitive, companies face many other challenges at the same time. Mergers, acquisitions and regular reorganizations can be cited as examples. Such situations create confusion and difficult problems that must be solved in corporate cultures. Leadership competencies of the managers can be tested at these times (Berke et al., 2008). For example, it is often claimed that many managers, who are quite successful in local operations, prominently fail in the international arena for a reason. There might be two reasons for that. First assumption might be that different competencies are needed in global businesses than those required in domestic operations. The other assumption is that global leaders improve their competencies to a higher (global) level (Jokinen, 2005).

Many scholars have prepared a list of Leadership Competencies in the literature on the development of leadership. In this study, 3M's Leadership Competency Model developed by

Alldredge and Nilan (2000) was used as the questionnaire scale. 3M Leadership Competencies are listed at Appendix-1.

The aspects of leadership are often discussed in terms of competencies. These competencies can be defined by the abbreviation KSA (Knowledge, Skills and Abilities). Leadership training is crucial both for training the leader candidates for the future and improving the competencies of the existing managers. Some aspects of leadership tend to be learned and others are less. Approximately $ 50 billion is spent annually for Leadership Development (Tubbs and Schulz, 2006).

Nowadays, the higher education is at the center of leadership training. For this reason, there are many higher education programs with various names at the universities and the colleges. Also, numerous higher education programs include a number of courses on leadership training (Astin and Astin, 2000). In this study, the effects of higher education on Leadership Competencies were examined from the perspective of the students. How much their education contributed to the leadership competencies given at questionnaire is asked to 300 higher education students. In particular, how the relation between the participants' education and leadership training effected the outcomes was focused on.

## 2. Higher Education & leadership competences

Astin & Astin (2000) suggest that higher education plays a significant role in developing leadership competency in graduates and thus it is being turned to as the most favourable source of potential change in the leadership climate. Additionally, research (Pascarella & Terenzini, 2005) suggests that students usually increase their leadership skills during their years in college and that growths in leadership development ultimately enrich their self-efficacy, civic engagement, character development, academic performance, and personal development (Benson & Saito, 2001 as cited in Avolio & Gardner ,2005). Avolio & Gardner,

(2005) make an interesting argument for leadership development based on the belief that "leaders are made, not born". People who seem to have natural leadership qualities have in most cases acquired them through a learning process, this leads us to a view that systematic and effective preparation of the school leader is more likely to produce successful competency leadership programmes than inadvertent experience. Watson (2003 as cited in Velasco 2014) assesses if leadership development should be customized to the needs of the learner, to the needs of the university or to the needs of the national system. Where there is a compulsory leadership qualification as in England, it is almost certain that national needs will have priority. "A national qualification requires a measure of consistency to reassure those recruiting leaders that all graduates have achieved at least threshold competence" (Bush, 2009).

Velasco, (2014) suggests that rising education levels especially university education, essentially improve skills, an element which is important for economic growth. Simultaneously, educational growth is believed to be an important policy tool when attempting to reduce economic inequality because increased earnings is usually connected with increased education. However, to achieve the best results, universities are expected to have the proper

## 2.2 Leadership competencies

Geoghegan and Dulewicz (2008) made an experimental study with 52 project managers and project sponsors from a financial services company in the United Kingdom to examine if there was a statistically significant relationship between a project manager's leadership competencies and project success. The article focuses on the correlation between two factors (usability, presentation of the project) and project leadership. As a result, eight separate

leadership dimensions were found to be statistically significantly related to performance, so the hypothesis of "increased capability in leadership dimensions can lead to increased success in project management "was supported.

Chin et al. (2001) focused on the great need for global leadership competencies in the business world. By comparing Chinese and American cultures, they explained how cultural differences have an influence on the leadership competencies. Then, they identified the difficulties that the individuals face in developing leadership competencies because of cultural differences and they have introduced a new model to improve people at global leadership level.

Curtis and Vries (2011) examined the role and impact of education and training on nursing leadership in their study. The high need for leaders with high leadership competencies in various health institutions and hospitals was emphasized first in the research. Then, it was shown that the higher education programs integrated with leadership training had a positive effect on nurses' leadership skills and practices. In the questionnaire, that the nurses who attended leadership training studies performed better was determined by both the management of the institution and the patients and patients' relatives. At the end of the research it is suggested that the health institutions should continue to develop and support leadership training. It is also suggested that they should seek ways to maintain and improve leadership development in practice.

Sherman et al. (2007) conducted an experimental study with 120 participants of nurse managers to establish a nursing leadership competency model. As a result of the study, a new nurse manager leadership competency model was developed with 6 items and that the requirement for developing leadership competencies of the new generation nurses was

verified officially. It was also emphasized that the leadership skills of nurse managers are directly proportional to the quality of the health services in the institution.

Tubbs and Schulz (2006) tried to explain which of the leadership competencies of an individual can be developed and which get fixed at a relatively early stage. 50 leadership competencies were identified in the study and these were classified. The purpose of the classification is to determine the competencies to be focused on the leadership training. This article defines the Global Leadership Competency Model as a taxonomy of Global Leadership Competencies and Meta competencies. As a result, it has been suggested that the leadership development efforts should be focused on the outermost circle of the model. Figure 1 shows taxonomy of leadership competencies and meta-competencies.

In their report, Astin and Astin (2000) examined the leadership concept and leadership training in the USA from a critical point of view and they placed the leadership training in higher education in the center of these concepts. Particularly in the first part of the report, mistakes in leadership training in higher education were expressed and recommendations were made to improve this training. According to the report, it is not sufficient just to focus on the curriculum to improve leadership training in higher education. It was also emphasized that the students, faculty members, student affair employees, institutes, and the other managers should be covered in the work.

Alldredge and Milan (2000) developed an executive-level global competency model in their work. A global team of top executives and professionals in the company contributed to the study. The competency model that was developed as a result of the study consists of 12 competencies. These competencies are Ethics and Integrity, Intellectual Capacity, Maturity and Judgement, Customer Orientation, Developing People, Inspiring Others, Business Health

and Results, Global Perspective, Vision and Strategy, Nurturing Innovation, Building Alliances, and Organizational Agility.

## 3. Methodology

The research method is based on a survey. The questionnaire consists of two parts. In the first part, the participants were asked about their demographic characteristics (age, gender, level of education, country of education, and the relation of their education program with leadership training). The questions in the second part were prepared by using 3M's Leadership Competency Model's scale developed by Alldredge and Nilan, (2000). A total of 12 Leadership Competencies were identified and the participants were asked how their higher education effected these leadership competencies. A graded questionnaire of 5-point Likert scale was used as a measurement tool. The options of the scale and their points and boundaries are determined as Strongly Disagree (1 point), Disagree (2 points), Undecided (3 points), Agree (4 points), and Strongly Agree (5 points). The survey was conducted among students who got scholarship from National Education Ministry of Turkish Republic to have their higher education abroad, who have still been studying, or have already graduated from a higher education institution abroad. In this scholarship program, there are thousands of students studying in 511 different programs in 67 countries, most of them studied or has been studying in the USA and the UK (MEB: 2017). The participants of the questionnaire were contacted through various social media tools and they filled out the questionnaire online. The total number of the participants was determined as 300, and the survey has been terminated when the number was reached. The 19 participants' questionnaires were removed from the data set for various reasons (missing data, extreme values, incorrect data, and inconsistency between responses) and a total of 281 questionnaires were evaluated. The results were analyzed by using IBM SPSS 20. Statistics Data Editor.

## 4. Analysis

The total number of valid questionnaires is 281. The number of women is 139 (49.5%) and the number of males is 142 (50.5%). 82.6% of the students who answered the questionnaire are between 25-30 years of age. When we look at the participants' education level, 200 students are at masters' level, and 81 of them are PhD students. 120 students study in the United Kingdom, 106 in the United States and 55 in the other countries.

Before beginning the analysis, the validity and reliability of the scale was examined within the scope of this research. Item-total correlation analysis and factor analysis were applied for construct validity of the measurement tool. The alpha coefficient is considered for the reliability. The item-total correlation values for the construct validity of the scale were examined. The item total correlation coefficient is expected to be at least .20 (Sipahi et al., 2000). Because there is no item below alpha value of .20, all the items are maintained in the scale. Table 1 shows Item-Total Correlation results. Before the factor analysis, the Kaiser-Meyer-Olkin (KMO) value was calculated as .813 to consider if the data are appropriate for the factor analysis. In order to be able to apply factor analysis on the data, the minimum KMO value must be .60 (Sipahi et al., 2000). The KMO value of .813 observed in this case indicates that the data are suitable for factor analysis. On the other hand, the result of Barlett test for factor analysis of 12 items was calculated as (p <0.001). The results of KMO and Barlett tests revealed that factor analysis could be applied on these data. Table 2 shows KMO and Bartlett's Test results. When deciding on an item to be included in the scale, the criteria was .30 or higher for the factor load value (Buyukozturk, 2002). In this case, all the items in the scale are included in the questionnaire.

A normal distribution test was conducted to determine the method by which the results would be analyzed. According to Tabachnick and Fidell (2013), if the values of Skewness and

Kurtosis are between -1.5 and +1.5, the existing data can be accepted as normally distributed. As a result, the Skewness value was -0.347 and the Kurtosis value was 0.033, and the data were accepted to be normally distributed. Table 3 shows the results of normality analysis. For this reason, the independent-samples T test was used for the variables of two groups and the One-Way Anova test was used for variables of more than two groups.

In the analysis applied, the education programs of the students were analyzed according to 5 different variables (gender, age, level of education, country of education, and the relation of the education program with leadership training) and the effects of these variables on the outcome were examined. In order to be able to interpret the research's results about Developing Leadership Competencies in general, mean values of 12 questions in the second part of the questionnaire were calculated, they were sorted under the title of Mean of the Competencies Scores and analyzes were made according to these values. Then, the same analysis was repeated for each of the Developing Leadership Competencies.

*Hypothesis 1*

$H_0$= Participants have no effect on the results of Developing Leadership Competencies according to the "gender" variable.

$H_1$= Participants have a significant effect on the results of Developing Leadership Competencies according to the "gender" variable.

Since the gender variable includes two groups, male and female, independent-samples T test was used for the analysis. According to the test results, it was determined that there was no significant effect of participants at the level of .05 on the mean of the Competencies scores according to gender variable. For this reason, the $H_0$ hypothesis was accepted and the $H_1$ hypothesis was rejected. Likewise, when this test was applied separately for each of the

Developing Leadership competencies, no significant difference at the level of .05 was determined.

*Hypothesis 2*

$H_0$= Participants have no effect on the results of Developing Leadership Competencies according to the "age" variable.

$H_1$= Participants have a significant effect on the results of Developing Leadership Competencies according to the "age" variable.

Since the age variable includes four groups as 25(-), 25-30, 31-35 and 35(+), One-Way Anova test was used for the analysis. According to the One-Way Anova test results, it was determined that generally there was no significant effect of participants at the level of .05 on the mean of the Competencies scores according to age variable and the $H_0$ hypothesis was accepted and the $H_1$ hypothesis was rejected. On the other hand, when this test was applied separately for each of the Developing Leadership competencies, a significant difference was observed between the groups for the 6th Leadership Competency (INSPIRING OTHERS). To determine the difference between the groups, Tukey HSD and Scheffe tests were applied and according to the results it was determined that there was a generally significant difference at the level of .05 between the group of 35 (+) and the groups of 31-35 and 25-30. Table 4 shows the results of the Tukey HSD and Scheffe tests for age variable.

For the 6th question in the second part of the questionnaire, the mean value of the answers given by the students in the age group of 35 (+) is (= 2.750), the mean value of the answers given by the students in the age group of 31-35 is (= 4.000) and the mean value of the answers given by the students in the age group of 25-30 is (=3,681).

*Hypothesis 3*

$H_0=$ Participants have no effect on the results of Developing Leadership Competencies according to the "level of education" variable.

$H_1=$ Participants have a significant effect on the results of Developing Leadership Competencies according to the "level of education" variable.

Since the level of education variable includes two groups, Master's and PhD, independent-samples T test was used for the analysis. According to the test results, it was determined that there was no significant effect of participants on the mean of the Competencies scores according to level of education variable at the level of .05 and the $H_0$ hypothesis was accepted and the $H_1$ hypothesis was rejected. Likewise, when this test was applied separately for each of the Developing Leadership competencies, no significant difference at the level of .05 was determined.

**Hypothesis 4**

$H_0=$ Participants have no effect on the results of Developing Leadership Competencies according to the "country of education" variable.

$H_1=$ Participants have a significant effect on the results of Developing Leadership Competencies according to the "country of education" variable.

Since the country of education variable includes three groups as the USA, the United Kingdom and the others, One-Way Anova test was used for the analysis. According to the One-Way Anova test results, it was determined that generally there was no significant effect of participants on the mean of the Competencies scores according to country of education variable at the level of .05 and the $H_0$ hypothesis was accepted and the $H_1$ hypothesis was rejected. However, when this test was applied separately for each of the Developing Leadership competencies, a significant difference was observed between the groups for the 2nd Leadership Competency (INTELLECTUAL CAPACITY) and 11th Leadership

Competency (BUILDING ALLIANCES). To determine the difference between the groups, Scheffe test was applied. According to the results of 2nd question, a generally significant difference was determined at the level of .05 between the groups of USA and OTHER COUNTRIES. For this question of the second part of the questionnaire, the mean value of the answers given by the students studying in the USA is (=4.0189) and the mean value of the answers given by the students studying in other countries is (=4.4364).

Then, according to the results of the 11th Leadership Competency (BUILDING ALLIANCES), Scheffe test was applied to analyze the differences between the groups by the country of education variable. According to the results, a generally significant difference was determined at the level of .05 between the groups of USA and OTHER COUNTRIES. For the 11th question, the mean value of the answers given by the students studying in the USA is (=3.7736), and the mean value of the answers given by the students studying in other countries is (=3.7273). Table 5 shows the results of the Scheffe test for the country of education variable.

*Hypothesis 5*

$H_0$= Participants have no effect on the results of Developing Leadership Competencies according to the "the relation of the education program with leadership training" variable.

$H_1$= Participants have a significant effect on the results of Developing Leadership Competencies according to the "the relation of the education program with leadership training" variable.

The relation of the education program with leadership training variable includes three groups as "My education is directly a leadership/management program", "My education is not directly a leadership/management program but it contains several modules", and "My education do not have any relation with leadership/management education program". Since

then One-Way Anova test was used for the analysis. According to the One-Way Anova test results, a generally significant difference in the mean of the Competencies scores was determined according to the relation of the participants' program with leadership training variable at the level of .05 and the $H_0$ hypothesis was rejected and the $H_1$ hypothesis was accepted. Likewise, when this test was applied separately for each of the Developing Leadership competencies, since p value of inter-group comparison is (= .140), no significant difference was determined at the level of .05 for the 5th Leadership Competency (DEVELOPING PEOPLE). However, since the p values for all the other Leadership Competencies are less than .05, a statistically significant difference between the groups was determined. Table 6 shows the results of the One-Way Anova test for Hypothesis 5. Then, Tukey HSD and Scheffe tests were applied to examine the level of difference between the groups for these 11 Leadership Competencies.

## 5. Results and Suggestions

In the study, to which extent their higher education, have impact on the 12 leadership competencies was asked to the participants through a questionnaire. The results were analyzed according to 5 different variables (gender, age, level of education, country of education, and the relation of the education program with leadership training). Generally, no significant difference was determined between the first 4 variables and the results of leadership competency development. However, it was determined that the 5th variable (the relation of the education program with leadership training) had an effect on the development of leadership competency in the level of 0.05. Then Tukey HSD and Scheffe tests were applied to examine the level of difference between the groups. According to the results, it was determined that there was a statistically significant difference between the Group 1 (My education is directly a leadership/management program), Group 2 (My education is not

directly a leadership/management program but it contains several modules) and Group 3 (My education do not have any relation with leadership/management education program).

According to these results, it is verified that higher education plays an important role in shaping the quality of leadership in the modern world (Astin and Astin, 2000). Considering the need for leaders in the modern world, it can be suggested that the leadership programs in higher education should be increased in educational institutions. During the recruitment for the management positions and promotion process in the companies, whether the candidates have leadership training should be a criterion to be considered seriously.

## 6. Conclusion

Leadership and leadership training has been a topic that was focused on both by the academic and business world in recent years. For the companies, almost in every industry in the globalized world, the need for leaders with the competencies required for global expansion and operations is increasing constantly. Approximately $50 billion per year is spent on Leadership Development (Tubbs and Schulz, 2006). The main purpose of developing leadership skills is to help an organization achieve its strategic goals (Wadekar 2007). There are numerous studies that show the importance of leadership development for organizational success. The way to be followed for leadership development is to focus on correctly identified leadership competencies (Berke et al., 2008).  In the literature on leadership development, many scholars and companies have prepared a number of lists of Leadership Competencies adapted to the field of activity (Tubbs and Schulz, 2006). Because, without a competency model, it would be very difficult to harmonize individual leadership behavior with organizational strategy and also to ensure the organizational consistency. Also, this model should be reviewed and updated periodically according to the challenges and the

experience gained. This may be due to the changes in the policies of the company or keeping up with the requirements of the era. (Berke et al., 2008).

Higher education plays an important role in developing the quality of the leadership in the modern world. Numerous students study various leadership programs at the universities and the colleges or courses on leadership are included in their education programs. (Astin and Astin, 2000). In this study, the effects of higher education on Leadership Competencies was researched from the student's perspective. How much their education contributed to the leadership competencies given at questionnaire is asked to 300 higher education students. In particular, how the relation between the participants' education and leadership training effected the outcomes was focused on. As a result, it was determined that the participants have a significant effect on Developing Leadership Competencies results according to the relation of their education program with leadership training variable. According to the results of the Tukey HSD and Scheffe tests applied for examining the level of difference between the groups, it was revealed that there was a statistically significant difference at the level of .05 between the students who directly studied and the ones who did not study leadership program or the students who just took one or more courses related to leadership training. As stated before, this study was prepared by examining from the perspective of higher education students. This study offers the opportunity to compare the results to the future studies that can be made from different perspectives.

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**Appendix-1.** 3M Leadership Competencies (Alldredge and Nilan, 2000, p. 139)

- *ETHICS AND INTEGRITY*

Exhibits uncompromising integrity and commitment to 3M's corporate values, human resource principles, and business conduct policies. Builds trust and instills self-confidence through mutually respectful, ongoing communication.

- *INTELLECTUAL CAPACITY*

Assimilates and synthesizes information rapidly, recognizes the complexity in issues, challenges assumptions, and faces up to reality. Capable of handling multiple, complex, and paradoxical situations. Communicates clearly, concisely, and with appropriate simplicity.

- *MATURITY AND JUDGMENT*

Demonstrates resiliency and sound judgment in dealing with business and corporate challenges. Recognizes when a decision must be made and acts in a considered and timely manner. Deals effectively with ambiguity and learns from success and failure**.**

- *CUSTOMER ORIENTATION*

Works constantly to provide superior value to the 3M customer, making each interaction a positive one.

- *DEVELOPING PEOPLE*

Selects and retains an excellent workforce within an environment that values diversity and respects individuality. Promotes continuous learning and the development of self and others to achieve maximum potential. Gives and seeks open and authentic feedback.

- *INSPIRING OTHERS*

Positively affects the behavior of others, motivating them to achieve personal satisfaction and high performance through a sense of purpose and spirit of cooperation. Leads by example.

- *BUSINESS HEALTH AND RESULTS*

Identifies and successfully generates product, market, and geographic growth opportunities, while consistently delivering positive short-term business results. Continually searches for ways to add value and position the organization for future success.

- *GLOBAL PERSPECTIVE*

Operates from an awareness of 3M's global markets, capabilities, and resources. Exerts global leadership and works respectfully in multicultural environments to 3M's advantage.

- *VISION AND STRATEGY*

Creates and communicates a customer-focused vision, corporately aligned and engaging all employees in pursuit of a common goal.

- *NURTURING INNOVATION*

Creates and sustains an environment that supports experimentation, rewards risk taking, reinforces curiosity, and challenges the status quo through freedom and openness without judgment. Influences the future to 3M's advantage.

- *BUILDING ALLIANCES*

Builds and leverages mutually beneficial relationships and networks, both internal and external, which generate multiple opportunities for 3M.

- *ORGANIZATIONAL AGILITY*

Knows, respects, and leverages 3M culture and assets. Leads integrated change within a business unit to achieve sustainable competitive advantage. Utilizes teams intentionally and appropriately.

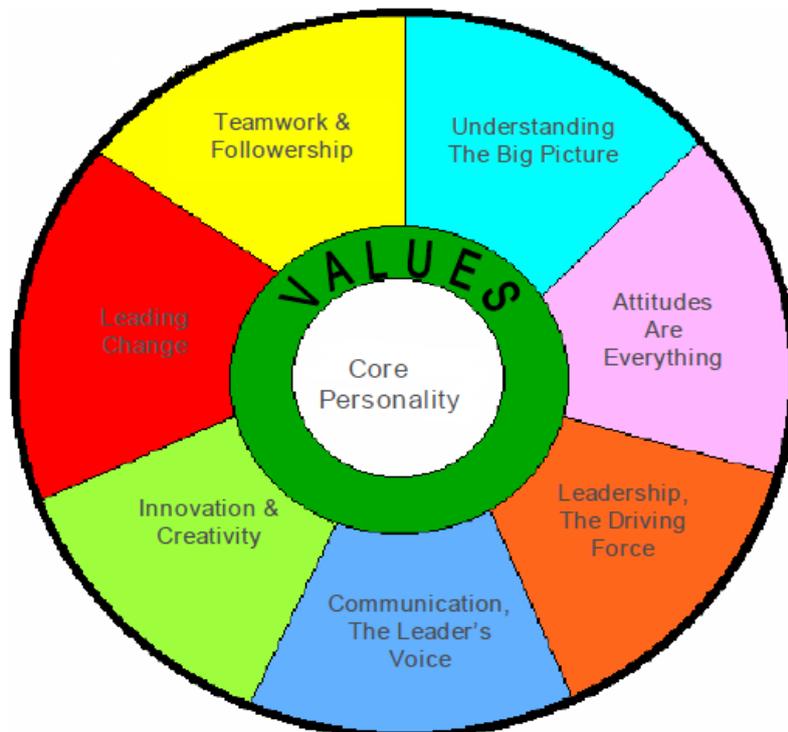**Figure 1**: taxonomy of leadership competencies and meta-competencies. (Tubbs and Schulz 2006)



**Table 1**: Item-Total Correlation results

|  | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Cronbach's Alpha if Item Deleted |
|---|---|---|---|---|---|
| ETHICS AND INTEGRITY | 41,3488 | 56,114 | ,587 | ,481 | ,877 |
| INTELLECTUAL CAPACITY | 40,9715 | 55,163 | ,557 | ,411 | ,878 |
| MATURITY AND JUDGMENT | 41,2811 | 54,089 | ,674 | ,634 | ,872 |
| CUSTOMER ORIENTATION | 41,8256 | 53,702 | ,482 | ,351 | ,883 |
| DEVELOPING PEOPLE | 41,1566 | 56,375 | ,499 | ,496 | ,880 |
| INSPIRING OTHERS | 41,4626 | 53,592 | ,646 | ,653 | ,873 |
| BUSINESS HEALTH AND RESULTS | 41,5160 | 50,808 | ,713 | ,609 | ,868 |
| GLOBAL PERSPECTIVE | 41,2705 | 55,462 | ,487 | ,480 | ,881 |
| VISION AND STRATEGY | 41,5836 | 51,958 | ,684 | ,680 | ,870 |
| NURTURING INNOVATION | 41,1032 | 53,700 | ,630 | ,508 | ,874 |
| BUILDING ALLIANCES | 41,6157 | 51,295 | ,569 | ,425 | ,879 |
| ORGANIZATIONAL AGILITY | 41,3132 | 54,873 | ,592 | ,472 | ,876 |

**Table 2**: KMO and Bartlett's Test results

| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | ,813 |
|---|---|---|
| Bartlett's Test of Sphericity | Approx. Chi-Square | 1560,432 |
|  | df | 66 |
|  | Sig. | ,000 |

**Table 3**: the results of normality analysis

|  |  |  | Statistic | Std. Error |
|---|---|---|---|---|
| mean of the Competencies scores | Mean | | 3,7608 | ,03962 |
|  | 95% Confidence Interval for Mean | Lower Bound | 3,6828 | |
|  |  | Upper Bound | 3,8388 | |
|  | 5% Trimmed Mean | | 3,7856 | |
|  | Median | | 3,7500 | |

| | | | |
|---|---|---:|---:|
| | Variance | ,441 | |
| | Std. Deviation | ,66423 | |
| | Minimum | 2,08 | |
| | Maximum | 5,00 | |
| | Range | 2,92 | |
| | Interquartile Range | ,75 | |
| | Skewness | -,347 | ,145 |
| | Kurtosis | ,033 | ,290 |

**Table 4**: the results of the Tukey HSD and Scheffe tests for age variable.

**Multiple Comparisons**

Dependent Variable: INSPIRING OTHERS

| | (I) What is your age? | (J) What is your age? | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval Lower Bound | Upper Bound |
|---|---|---|---|---|---|---|---|
| Tukey HSD | 25 (-) | 25-30 | -,01437 | ,27632 | 1,000 | -,7286 | ,6998 |
| | | 31-35 | -,33333 | ,32779 | ,740 | -1,1806 | ,5139 |
| | | 35 (+) | ,91667 | ,38104 | ,078 | -,0682 | 1,9015 |
| | 25-30 | 25 (-) | ,01437 | ,27632 | 1,000 | -,6998 | ,7286 |
| | | 31-35 | -,31897 | ,19647 | ,367 | -,8268 | ,1889 |
| | | 35 (+) | ,93103* | ,27632 | ,005 | ,2168 | 1,6452 |
| | 31-35 | 25 (-) | ,33333 | ,32779 | ,740 | -,5139 | 1,1806 |
| | | 25-30 | ,31897 | ,19647 | ,367 | -,1889 | ,8268 |
| | | 35 (+) | 1,25000* | ,32779 | ,001 | ,4028 | 2,0972 |
| | 35 (+) | 25 (-) | -,91667 | ,38104 | ,078 | -1,9015 | ,0682 |
| | | 25-30 | -,93103* | ,27632 | ,005 | -1,6452 | -,2168 |
| | | 31-35 | -1,25000* | ,32779 | ,001 | -2,0972 | -,4028 |
| Scheffe | 25 (-) | 25-30 | -,01437 | ,27632 | 1,000 | -,7916 | ,7628 |
| | | 31-35 | -,33333 | ,32779 | ,793 | -1,2553 | ,5886 |
| | | 35 (+) | ,91667 | ,38104 | ,125 | -,1551 | 1,9884 |
| | 25-30 | 25 (-) | ,01437 | ,27632 | 1,000 | -,7628 | ,7916 |
| | | 31-35 | -,31897 | ,19647 | ,453 | -,8716 | ,2337 |
| | | 35 (+) | ,93103* | ,27632 | ,011 | ,1538 | 1,7083 |
| | 31-35 | 25 (-) | ,33333 | ,32779 | ,793 | -,5886 | 1,2553 |
| | | 25-30 | ,31897 | ,19647 | ,453 | -,2337 | ,8716 |
| | | 35 (+) | 1,25000* | ,32779 | ,003 | ,3280 | 2,1720 |
| | 35 (+) | 25 (-) | -,91667 | ,38104 | ,125 | -1,9884 | ,1551 |
| | | 25-30 | -,93103* | ,27632 | ,011 | -1,7083 | -,1538 |
| | | 31-35 | -1,25000* | ,32779 | ,003 | -2,1720 | -,3280 |

*. The mean difference is significant at the 0.05 level.

**Table 5**: the results of the Scheffe test for the country of education variable.

**Multiple Comparisons**

Scheffe

| Dependent Variable | (I) Where is the country you studied? | (J) Where is the country you studied? | Mean Difference (I-J) | Std. Error | Sig. |
|---|---|---|---|---|---|
| INTELLECTUAL CAPACITY | USA | the United Kingdom | -,13947 | ,12004 | ,510 |
| | | other | -,41750* | ,14966 | ,022 |
| | the United Kingdom | USA | ,13947 | ,12004 | ,510 |
| | | other | -,27803 | ,14665 | ,168 |
| | other | USA | ,41750* | ,14966 | ,022 |
| | | the United Kingdom | ,27803 | ,14665 | ,168 |
| BUILDING ALLIANCES | USA | the United Kingdom | ,30692 | ,17007 | ,198 |
| | | other | ,64631* | ,21202 | ,010 |
| | the United Kingdom | USA | -,30692 | ,17007 | ,198 |
| | | other | ,33939 | ,20776 | ,265 |
| | other | USA | -,64631* | ,21202 | ,010 |
| | | the United Kingdom | -,33939 | ,20776 | ,265 |

*. The mean difference is significant at the 0.05 level.

**Table 6**: the results of the One-Way Anova test for Hypothesis 5

**ANOVA**

| | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| ETHICS AND INTEGRITY | Between Groups | 19,674 | 2 | 9,837 | 18,467 | ,000 |
| | Within Groups | 148,084 | 278 | ,533 | | |
| | Total | 167,758 | 280 | | | |
| INTELLECTUAL CAPACITY | Between Groups | 26,292 | 2 | 13,146 | 17,784 | ,000 |
| | Within Groups | 205,502 | 278 | ,739 | | |
| | Total | 231,794 | 280 | | | |
| MATURITY AND JUDGMENT | Between Groups | 12,829 | 2 | 6,415 | 8,877 | ,000 |
| | Within Groups | 200,893 | 278 | ,723 | | |
| | Total | 213,722 | 280 | | | |
| CUSTOMER ORIENTATION | Between Groups | 93,454 | 2 | 46,727 | 42,982 | ,000 |
| | Within Groups | 302,225 | 278 | 1,087 | | |
| | Total | 395,680 | 280 | | | |
| DEVELOPING PEOPLE | Between Groups | 2,872 | 2 | 1,436 | 1,977 | ,140 |
| | Within Groups | 201,953 | 278 | ,726 | | |
| | Total | 204,826 | 280 | | | |
| INSPIRING OTHERS | Between Groups | 41,521 | 2 | 20,761 | 27,134 | ,000 |
| | Within Groups | 212,699 | 278 | ,765 | | |
| | Total | 254,221 | 280 | | | |
| BUSINESS HEALTH AND RESULTS | Between Groups | 59,579 | 2 | 29,789 | 28,081 | ,000 |
| | Within Groups | 294,912 | 278 | 1,061 | | |
| | Total | 354,491 | 280 | | | |
| GLOBAL PERSPECTIVE | Between Groups | 20,039 | 2 | 10,019 | 11,252 | ,000 |
| | Within Groups | 247,549 | 278 | ,890 | | |
| | Total | 267,587 | 280 | | | |
| VISION AND STRATEGY | Between Groups | 74,112 | 2 | 37,056 | 43,014 | ,000 |
| | Within Groups | 239,490 | 278 | ,861 | | |
| | Total | 313,601 | 280 | | | |
| NURTURING INNOVATION | Between Groups | 25,160 | 2 | 12,580 | 14,906 | ,000 |
| | Within Groups | 234,613 | 278 | ,844 | | |
| | Total | 259,772 | 280 | | | |
| BUILDING ALLIANCES | Between Groups | 103,295 | 2 | 51,647 | 39,350 | ,000 |
| | Within Groups | 364,883 | 278 | 1,313 | | |
| | Total | 468,178 | 280 | | | |
| ORGANIZATIONAL AGILITY | Between Groups | 17,009 | 2 | 8,505 | 11,436 | ,000 |
| | Within Groups | 206,735 | 278 | ,744 | | |
| | Total | 223,744 | 280 | | | |
| mean of the Competencies scores | Between Groups | 30,577 | 2 | 15,288 | 45,721 | ,000 |
| | Within Groups | 92,958 | 278 | ,334 | | |
| | Total | 123,535 | 280 | | | |