**Authentic Leadership and Its Impact on Organizational Intelligence: Model for Measuring Direct and Indirect Impact with Mediating Role of Organizational Culture**

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**Abstract**

In the contemporary age organizations are facing rapidly changing working dynamics, cut throat competition, unpredictable macro-environmental changes and dramatic cultural and social environments. Under these circumstances the application of classical rules of management can not only result into a competitive disadvantage but may also likely become a threat to put organizations at the verge of collapse. Such phenomenon forces organizations to adopt new organizational practices and approaches such as Organizational Intelligence (OI). The volatile nature of business plateau has given rise to investigation of comprehensive models of Organizational Intelligence (OI). This research paper aims to analyze the direct and indirect effect of authentic leadership on organizational intelligence with the mediating role of Organizational Culture. Karl Albrecht (2003), Walumbwa et.all (2009) and Daniel Denison (1997) valid scales are used to measure Organizational Intelligence, Authentic Leadership and Organizational Culture respectively. The data has been collected from 106 employees working in the telecom sector of Pakistan. Smart PLS is used for factor analysis, path model analysis and multivariate analysis between the variables. The findings of the research show that Authentic Leadership has a direct, positive but weak influence on Organizational Intelligence however, it has an indirect, positive and strong influence on Organizational Intelligence. The findings of the study conclude that practicing Authentic Leadership occasionally weakly influence an organization to achieve Organizational Intelligence. On the other hand, adopting Authentic Leadership style harness an organizational culture of pellucidity which activates the organizations to become intelligent organizations.

**Keywords**: Organizational Intelligence, Authentic Leadership, Organizational Culture, Factor Analysis, Path Model.

### 1. Introduction

Organizational Intelligence has been given serious devotion because of its role in sustainable excellence in the business milieu, long term learning environment and committed workforce. Organizational Intelligence is the ability of organizations to make sense of complex situations and act effectively in relevance to the events and signals stimulating from the environment. It also includes the ability to develop, share and use knowledge relevant to its business purpose (Halal 2006). The business scenario is vividly changing and has become so complex with exponential influx of uncertainties that only the organizations that are engaged in organizational intelligence are considered as a pivot for sustainability in the longer run (Thannhuber, Bruntsch and Tseng 2017). Hence the need of the hour is to emphasize on organizational intelligence which is believed to be served as a prescription for sustainable existence and for meeting environmental change shocks (Haviland 2017).

The phenomenon of organizational intelligence is not restricted to one element of the organization only. It is the collective measure of intelligence of all components of the organization (Frappaolo 2015). In the 21st century with eminent changing and evolving business practices, organizations concentrating on their social capital are able to sustain (M. J. Thannhuber 2017). The social capital of organizations is constituted of relationships among teams and networks that are collaborating with each other for the effective functioning of the organization. This skill set is distributed among the leaders and their subordinates (Rondeau 2017). Thus, researchers enforce the idea of organizational intelligence to be viewed in reflection of social element of the organization. Processing of information in the best interest of the organizational intelligence during critical times pays attention towards the influential role of Leadership (Akgün, Byrne and Keskin 2010). Authentic leadership style influence work engagement of employees within organizational setups. This work engagement gives rise to enhanced productivity beneficial for both individual and organization (KIM 2014).

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Corporate sectors which are more inclined towards profitability are getting aware of its benefits are converging their attention towards the recognition and implementation of Organizational Intelligence within their setups (Azam, Salimi and Sharif 2016).

In reflection of this, organizational intelligence is a paramount attribute, which calls for conducting research in the respective area to understand its key determinants. There is a need to identify the main determinants that help ventures to achieve organizational intelligence (Frappaolo 2015). Therefore, the present study is designed to conduct research in the area of organizational intelligence with reference to social construct of an organization in the telecom sector of Pakistan. Rondeau & Wagar (2017) defines the social capital of an organization as a leader and employee networking and their association with other organizational elements for the effectiveness of the organization.

The piece of literature that is thin is the application of the behaviorist approach towards achieving Organizational Intelligence. To bridge the gap and to provide a real time case application from Pakistan, this paper aims to investigate the role of Authentic Leadership on Organizational Intelligence with and without the mediating role of Organizational Culture in the telecom sector of Pakistan.

The findings gathered from the study will set Implications for leaders and strategist from other sectors whose organizations are facing similar turbulent business environment for their operations. Furthermore, the results inferred by applying OI model focusing on authentic leadership practices and Organizational Culture interventions may be considered to set managerial implications as a roadmap for achieving organizational intelligence by organizations.

## 2.  Review of Literature

Businesses and Corporations are working in an unprecedented and ever evolving working landscape. In such dynamically volatile environment, there are many factors which need to be combined and well-coordinated together to achieve success in the pragmatic business paradigm (Malekzadeh, Kazemi, et al. 2016). In such circumstances the application of traditional directions of management practices are not only absolute rather can result into a competitive disadvantage. These circumstances forces organizations to adopt new organizational practices and approaches such as Organizational Intelligence (OI) (Boyer and Lewis 2002). Organizations must revisit their traditional approaches and models for growth and survival. They must pursue contemporary models to cultivate sustainable operations (Sum, Kow and Chen 2004). The volatile nature of business plateau has given rise to investigation of comprehensive models of Organizational Intelligence (OI) (Malekzadeh, Kazemi, et al. 2016).

Organizational Intelligence has been defined as the capability of an organization to learn and manage the knowledge and apply it for effective decision making, adapting to changes in business environment (Halal 2006). In comparison to that of the human intelligence, Organizational Intelligence is defined as the ability to adapt to changing environments and situations and the capability to decide based on the knowledge available on critical circumstances (Weber and Diderler 1996). The ability of the organization to gather information about the nature of an organization linked to the environment and to understand and transform information into knowledge and solutions that are valued by the environment is Organizational Intelligence (Azam, Salimi and Sharif 2016). The capacity of an organization to use all their mental abilities and focus on the ability to achieve the organization's mission is perceived as Organizational Intelligence (Albrecht 2002).

Organizational Intelligence is related to the capacity of organizations to compute stability either generated internally or gained externally to meet survival challenges (McMaster 1996). The main approaches that are used under Organizational Intelligences are behaviorist, Cognitive and adaptive approach (Melser 2004). The behaviorist approach refers to setting behaviour suited to the organizational interests and goals that the organization should achieve based on a given set of inputs (Zara 2004). The Behaviorist approach is the function of 7 cognitive sub- systems: Strategic vision, Appetite for change, Heart, Shared fate, Performance Pressures, Alignment and Knowledge deployment (Albrecht 2002).

Organizational Intelligence affects managerial and employee behaviour and on the other hand it shapes organizational resources and rules. The way the information is processed that is gathered, shared

and manipulated is related to the significant aspect of Organizational Intelligence (Malekzadeh, Kazemi, et al. 2016).Processing of information in the best interest of the Organization Intelligence during critical times pays attention towards the influential role of Leadership (Akgün, Byrne and Keskin 2010). Authentic leadership style influence work engagement of employees within organizational setups. This work engagement gives rise to enhanced productivity beneficial for both individual and organization (KIM 2014).

Authentic leadership is defined as a pattern of leader behaviour that draws upon and promotes both positive psychological capacities with in employees and a positive ethical climate within an organization, to foster greater self-awareness, an internalized moral perspective, balanced processing of information, and relational transparency on the part of leaders working with followers, fostering positive self-development (Walumbwa, et al. 2008). Leaders spark the intrinsic motivation of employees, thereby stimulating their extra-role performance (Kroon, Woerkom and Menting 2017).

The unique set of values that encompasses the social and psychological environment of an organization is its organizational culture. Culture is elementary for both in the successful implementation of organizational change and secondly amplifying the contribution of human resource in business ventures. It is indeed a crucial management competency of contemporary times as the right set of organizational culture is an essential requirement for success within an organization. The challenging task faced by leaders and managers is to identify their prevailing culture within their organizations, determine the best suitable culture parallel to their vision, goals and objectives and finally successful implementation of that culture in the organization of achieving organizational success (Yaghoubi and Haghi 2010).

The behavioral aspects of Organizational intelligence that are associated with leadership style contribute towards immaculately leading the organizations in the volatile business plateau. Traditionally the corporate setups have induced practices to create transparent organizational culture interventions in their business operations and meeting the requirements of market systems (Klatt, Wise and Fish 2016). Review of the literature conclusively narrate that Organizational Intelligence is the gold standard to for today to meet the peculiar nature of volatility of business. Telecom sector of Pakistan is a technology centered sector and technological advancements are the most rapidly changing advancements of the 4th generation. Therefore, it is imperative to conduct a research on Organizational Intelligence considering the role of leadership and organizational elements. Based on the literature above the study postulated the following theoretical framework.

### 2.1    Structural Model
The structural model of the research is depicted as follows:

**Figure 1: Conceptual Framework**
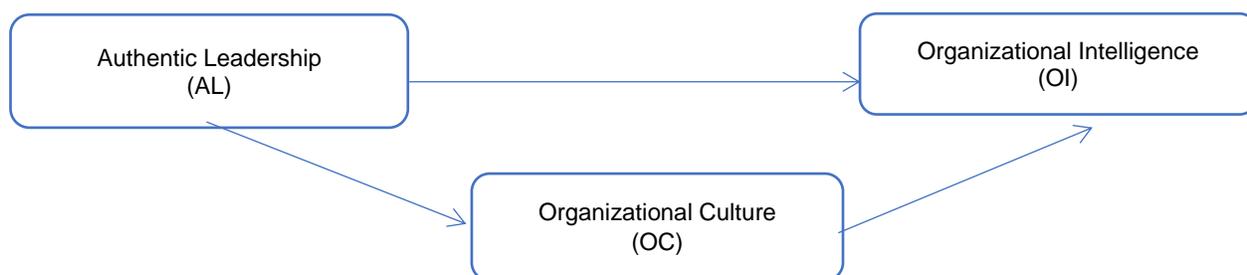


### 2.2    Measurement Model
Organizational intelligence, organizational culture and authentic leadership characteristics are measured by using valid scales. Respective names of the scales, observable dimensions and details are illustrated in the table below:

**Table 1: Instrument and Scales**

| No | Valid Questionnaire | Observable Variables and Items | Scale |
|----|---------------------|--------------------------------|-------|
| 1 | **Albrecht (2003)** Organizational Intelligence Questionnaire | Includes 49 times and 7 observable variables. | 5 Point Likert Scale |
| 2 | **Daniel Denison (1997)** Organizational Culture Questionnaire | Includes 12 items and 4 Observable variables | 5 Point Likert Scale |
| 3 | **Walumbwa et.all (2009)** Authentic Leadership Scale (ALS) Questionnaire | Includes 16 Items and 4 Observable variables | 5 Point Likert Scale |

Measurement model of the research with respect to theoretical framework and valid scales is depicted as follows:

**Figure 2: Measurement Model**
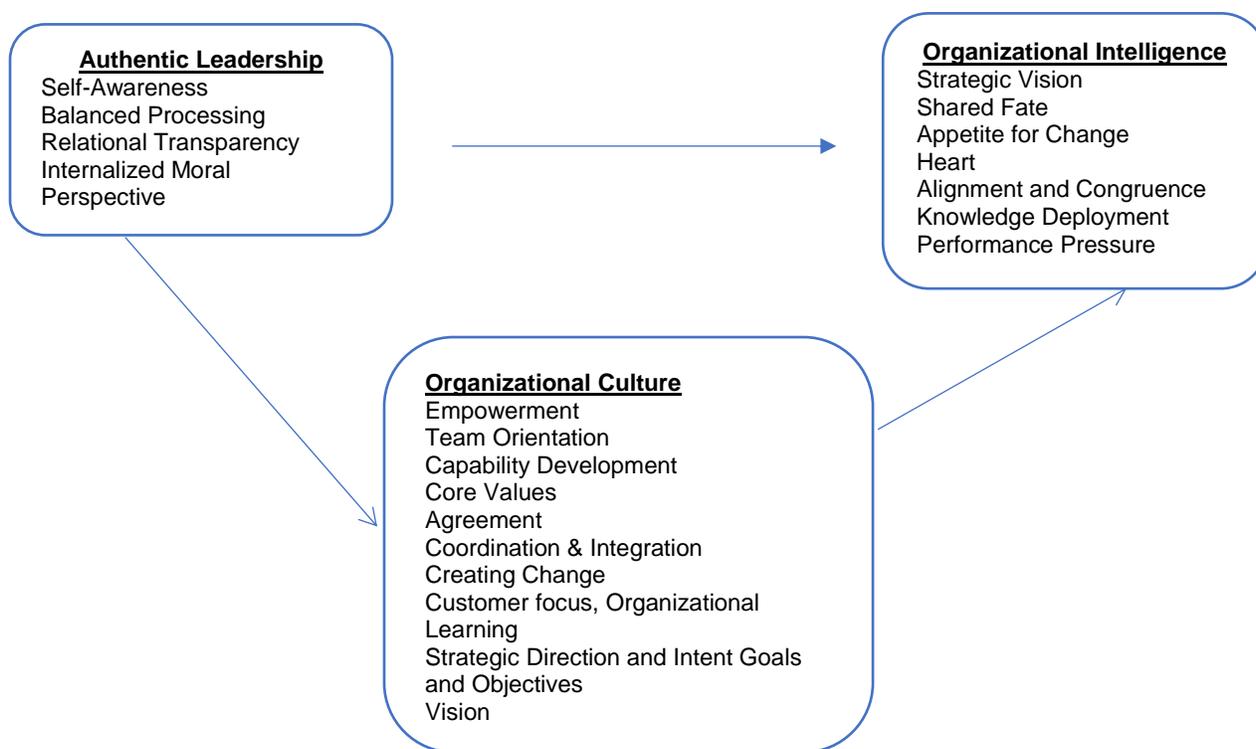


## 2.3 Hypotheses

Based on the theoretical framework above the research postulates the following hypotheses.
**H1:** Authentic Leadership has direct influence on Organizational Intelligence.
**H2:** Authentic Leadership has direct influence on Organizational Culture.
**H3:** Organizational Culture has direct influence on Organizational Intelligence.
**H4:** Authentic Leadership influences indirectly on Organizational Intelligence through Organizational Culture.

## 3. Research Methodology

This research design indicates the extent to which the dependent and independent variable fluctuates together. Similarly, the change in the dependent variable due to a mediating variable is also measured. The research is quantitative and descriptive where questionnaires are used as a research instrument. Organizational Intelligence is measured by using Karl Albrecht scale for measuring OI (2003). Authentic leadership is measured by using Authentic Leadership Measurement Scale by Walumbwa et. al

(2008) and Organizational Culture is measured by Denison Organizational Culture scale by Daniel Danison (1996).

List of cellular mobile operators is extracted from the official website of Pakistan telecom authority. All the four companies head offices are located in Islamabad capital territory. Convenient sampling is used for data collection. The sample size needs to be 10 times or more than the number of variables (Sekaran 2003). Keeping this standardization in focus 120 questionnaires were circulated among managers, middle management, staff members and leaders of the organization. 106 duly filled questionnaires were received back and the response rate is calculated to be 88%.

Direct and indirect paths of authentic leadership with organizational intelligence are measure by using Smart PLS. Smart PLS additionally supports other statistical analysis including confirmatory factor and regression analysis (Garson 2016). Hence, Smart PLS is used in this research for data analysis.

## 4.    Results and Discussion

The results of the model analyzed to find out the relationships between the dependent, independent and mediating variable is discussed in this section of results and discussion. Reliability and validity analysis is conducted by using cross loadings, average variance and Cronbach alpha tests. Confirmatory factor analysis confirmed the distinctiveness of the variables of study. All variables are different from each other and do not measure the same factor, confirming discriminant validity. Direct and indirect effect of authentic leadership on organizational intelligence is measured by path coefficient tests, t- tests and significance value. Standardized root means square residual (SRMR) and Normal fit indices (NFI) are used to measure model fit of the study.
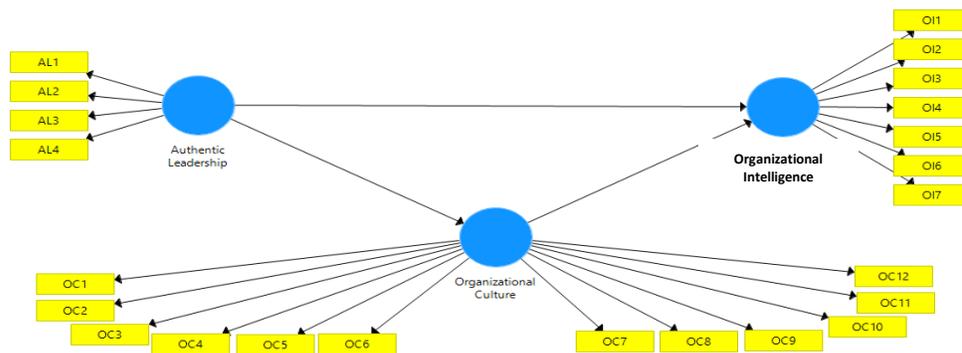
## Figure 3 : Study Model Depiction in Smart PLS



## Table 2: Model Reliability and Validity Analysis

| Model Composite Reliability and Average variance extracted | | | |
|---|---|---|---|
| Component | Cronbach Alpha | Composite Reliability | AVE |
| Authentic Leadership | 0.842 | 0.895 | 0.681 |
| Organizational Culture | 0.920 | 0.933 | 0.542 |
| Organizational Intelligence | 0.843 | 0.880 | 0.514 |

The Cronbach alpha values of the variables of the model are calculated to be 0.842 for Authentic Leadership, 0.920 for Organizational Culture and 0.843 for Organizational Intelligence. The standard benchmark for a good reliability is a value greater the 0.5 and less than 1.0. All the values lie within the threshold value and hence satisfactory. The values are strong and show strong internal consistency of the set of items as a group are closely related. The composite reliability results also indicate strong internal consistency. Average variance extracted is used for discriminant validity. Discriminant validity tells that the measures of the construct are not related and different from each other. The benchmark value for

acceptable results is less than 0.85. The average variance results of the study are calculated to be within the threshold value therefore satisfactory and acceptable.

The next test conducted on the data is Confirmatory Factor Analysis (CFA). The test is conducted to gauge that whether the indicators of the construct are consistent or not. CFA results of each variable/ factor is depicted as follows:

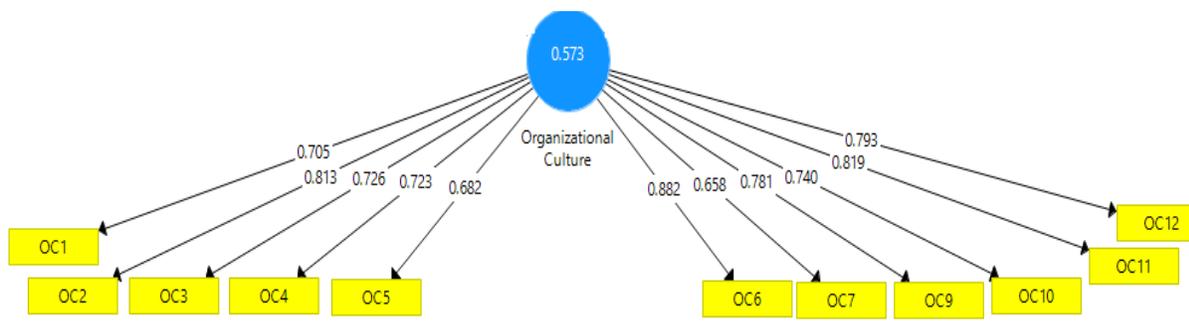**Figure 4: CFA Results Authentic Leadership**
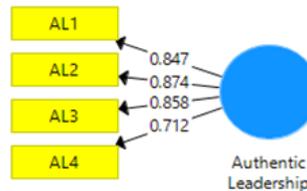


The Standard benchmark value acceptable for CFA ranges between 0.4 to 0.999. The indicator values of the factor of Authentic Leadership lies within the standard range and thus show strong and consistent results. The CFA results of Organizational Intelligence is depicted as follows:

**Figure 5: CFA Results Organizational Intelligence**
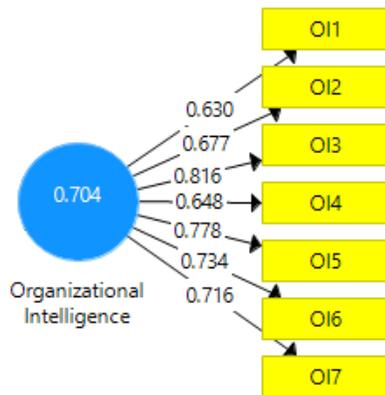


The Standard benchmark value acceptable for CFA ranges between 0.4 to 0.999. The indicator values of the factor of Organizational Intelligence lies within the standard range and hence show strong and consistent results. Similarly, the CFA results of Organizational Culture is depicted as follows,

**Figure 6: CFA Results Organizational Culture**

The Standard benchmark value acceptable for CFA ranges between 0.4 to 0.999. The indicator values of the factor of Organizational Culture lies within the standard range and hence show strong and consistent results. The holistic, one picture layout of the model of the study, the direct and indirect paths, Standard regression weights, Factor Loadings and percentage explained by explanatory variables is depicted in the figure below:

**Figure 7: Study Model CFA Results in Smart PLS**
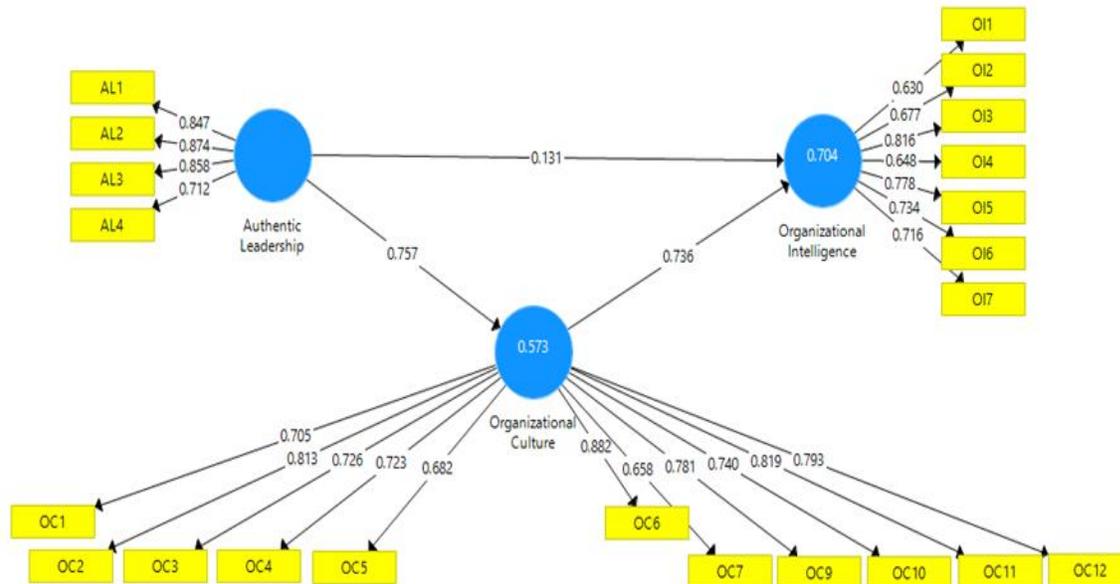


The cross loadings values of the variables and their dimensions is illustrated in the table below,

**Table 3: Cross Loadings**

| Variable | AL | OC | OI |
|---|---|---|---|
| Self – Awareness | 0.846 | 0.702 | 0.569 |
| Balanced Processing | 0.874 | 0.707 | 0.630 |
| Relational Transparency | 0.858 | 0.611 | 0.482 |
| Internalized Moral Perspective | 0.713 | 0.524 | 0.581 |
| Empowerment | 0.518 | 0.714 | 0.555 |
| Team Orientation | 0.688 | 0.811 | 0.721 |
| Capability Development | 0.475 | 0.712 | 0.671 |
| Core Values | 0.474 | 0.728 | 0.573 |
| Agreement | 0.572 | 0.672 | 0.507 |
| Coordination & Integration | 0.771 | 0.876 | 0.672 |
| Creating Change | 0.565 | 0.653 | 0.443 |
| Customer focus | 0.546 | 0.450 | 0.391 |
| Organizational Learning | 0.515 | 0.778 | 0.620 |
| Strategic Direction and Intent Goals and Objectives | 0.512 | 0.725 | 0.728 |
| Vision | 0.620 | 0.831 | 0.743 |
| Mission | 0.559 | 0.795 | 0.675 |
| Strategic Vision | 0.229 | 0.481 | 0.628 |
| Shared Fate | 0.418 | 0.461 | 0.677 |
| Appetite for Change | 0.515 | 0.651 | 0.815 |
| Heart | 0.319 | 0.516 | 0.647 |
| Alignment and Congruence | 0.554 | 0.648 | 0.778 |
| Knowledge Deployment | 0.469 | 0.543 | 0.735 |
| Performance Pressure | 0.738 | 0.778 | 0.717 |

Considering the table above the minimum distance between the load factors is more than 0.1. All the measured values lie within the standard acceptable values and the results show that the study parameters have good validity. The descriptive indicators of the data of the study including the average value of responses and the deviation from standard is discussed as follows, the values are also depicted in the form of a table below:

**Table 4: Descriptive Indicators of Study Variables**

| Variable | Average | Standard Deviation |
|---|---|---|
| Authentic Leadership | 3.33 | 0.978 |
| Organizational Culture | 3.83 | 0.850 |
| Organizational Intelligence | 3.37 | 0.830 |

The average of the responses of each variable is calculated separately to identify the mean and the standard deviation of the data responses. The acceptable standard threshold values of descriptive indicators are 0.0 for mean and less than 1.0 for standard deviation for a normal distribution. The calculated values of the study are within the acceptable range. The average of each variable is calculated to be closer to 3, meaning the mean is 0 and the standard deviation of each variable response is less than 1.0. These statistics concludes that the respondent's responses are closer to each other with minimum standard deviation.

The table 5. below shows the path coefficients and T- statistics of the study. These study paths are the linear regression weights that are used for examining the possible linkage between the variables of the study.

**Table 5: Path Coefficient**

| Variable | Path Coefficient | T Statistics |
|---|---|---|
| On Organizational Intelligence from: | | |
| Organizational Culture | 0.736 | 8.182 |
| Authentic Leadership | 0.131 | 2.241 |
| On Organizational Culture from: | | |
| Authentic Leadership | 0.757 | 12.940 |
| Indirect Impact of Organizational Intelligence through | | |
| Organizational Culture | 0.557 | 6.118 |

The t- statistics and coefficient values of the study relations are calculated to be significant. The table above shows a positive and direct influence of Authentic Leadership on Organizational intelligence with the positive and significant path coefficient value of 0.131. However, the value is weak. Similarly, positive and significant influence of Authentic Leadership on Organizational Intelligence is achieved via mediatory variable of Organizational Culture. The Path Coefficient value is calculated to be 0.557 that is positive, significant and a stronger value compared to the direct path value of 0.131. The analysis of the t- statistics and path coefficient depicts that Authentic Leadership has a direct influence on organizational Intelligence however, the relation is weak and Authentic Leadership has a stronger influence on Organizational Intelligence via indirect path of including a mediatory variable of Organizational Culture.

## 4.1 Model Fitness

The model fitness of the study is measured by using two tests Standardized Root Mean Square Residual (SRMR) and Normed Fit Index. SRMR give the average of discrepancies among the expected and the observed correlations of the study model fit criterion. The average discrepancies standard value must be less than 0.1. The next test conducted to check the goodness of fit in Smart PLS model is Normed Fit Index. NFI measures the fit between the observed and hypothesized model. The standard benchmark value for NFI is above 0.9. The structural model fitness measured by SRMR and NFI values are mentioned in the table below.

**Table 6: Structural Model Fitness**

|  | Estimated Model |
|---|---|
| SRMR | 0.077 |
| NFI | 0.916 |

The value for standardized root means square residual of the model is measured to be 0.077 which is within the standard value for SMRS and hence satisfactory. The Normed fit index value of the model is calculated to be 0.916 that is also within the standard value for NFI and hence satisfactory. The hypothesized and observed measures are observed to be in parallel to each other therefore the hypotheses of the model are acceptable.

**Table 7: Test Results of Study Hypotheses**

| Hypotheses | Path Coefficient | T statistics | Hypotheses |
|---|---|---|---|
| Authentic Leadership has direct influence on Organizational Intelligence | 0.131 | 2.241 | Confirmed |
| Authentic Leadership has direct influence on Organizational Culture | 0.757 | 12.940 | Confirmed |
| Organizational Culture has direct influence on Organizational Intelligence. | 0.736 | 8.182 | Confirmed |
| Authentic Leadership influences indirectly on Organizational Intelligence through Organizational Culture | 0.557 | 6.118 | Confirmed |

## 5.    Conclusion

Organizational Intelligence requires the former variables of Authentic Leadership and Organizational Culture that provides the grounds for such an organizational behaviour (Klein, Wallis and Cooke 2013), (Choudhary, Akhtar and Zaheer 2013), (Bakari, et al. 2017).  Authentic Leadership and Organizational Culture proved in this study as influencing variables.  On the basis of present research findings, Organizational Culture as a mediating variable has a strong influence on achieving Organizational Intelligence. Authentic Leadership does directly influence on achieving organizational intelligence however when the organizations continuously practices Authentic Leadership this creates an organizational culture of authenticity and transparency among leaders and employees and therefore gives more positive and strong results in fostering Organizational Intelligence.

Hence for organizations to achieve organizational intelligence, they need to inculcate a continuous practice of Authentic Leadership which brings an organizational culture of pellucidity which harnesses high levels of Organizational Intelligence. Authentic Leadership and Organizational Culture are the important prerequisites towards achieving Organizational Intelligence. The findings of the study also present that Organizational Intelligence can be achieved without incurring any financial remuneration. Practicing Authentic Leadership for Organizational Culture can serve as a cost-free prescription for organizations to achieve Intelligence in crucial rapidly changing markets and dynamic global competition.

The findings of the study conclude that Authentic Leadership, Organizational Culture and Organizational Intelligence are all positively related and emphasizing on each one of these variables helps organization to take lead from its competitors by beating the classical practices of management in the business milieu.

## 6.       Limitations and Future Research Directions

Despite the fact that this piece of study has practical implications in context of Pakistan, on the other hand has certain limitation as well. The scope of the study is limited to telecom sector of Pakistan. The data is collected at one point in time (cross- sectionally) that has a tendency to give misleading results. Therefore, it is   recommended for future researchers that a large sample size is used for investigating the role of authentic leadership on organizational intelligence and generalizability of results. Furthermore, it is

recommended for future researchers to analyze the role of authentic leadership on Organizational intelligence when organizational culture is used as a moderator rather than a mediator in same or in other industries for the generalization of results.

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