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The Role of Workforce Diversity in Improving Organizational Innovation; A Case Study on Ethio Telecom

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Abstract

The composition of an organization's human resources is important in that it is closely associated with the achievement of its goals. This study sought to find out the impact of workforce diversity on improving organizational innovation with reference to the telecommunication industry. The study employed descriptive research design used quantitative approach. A survey was personally administrated to a sample of employees (***n=248***) at head office level. The finding of this study showed that gender, age and education background are positively linked with organization organizational innovation by high level of significance. Thus, the workforce diversity dimensions were considered as major determinant factors that affects organizational innovation. The implication is that ethio telecom has excellent age, gender and educational diversity composition and it needs to be managed properly to get the full advantage of the diversity. Additionally, the company needs to avail different skill maximization trainings to increase existing innovation capacity of the employees. Finally, based on the findings, the researchers forwarded recommendation and future research directions.

Keywords: Diversity, Gender, Age, Educational background, Organizational innovation, Ethio Telecom

Introduction

Globalization, fierce market competition, and rapid technological changes exert enormous pressure on contemporary firms to innovate (Greenhalgh et al., 2007). Thus, 'in today's economy, firms are challenged to continuously offer a portfolio of innovative products and services' (Talke, Salomo, & Rost, 2010). The composition of an organization's human resources is important in that it is closely associated with the achievement of its goals. Recently, our understanding of what constitutes an optimal human resource composition has been changing. Such a composition can vary not only in terms of its external dimensions, such as employee gender, age, and ethnicity, but also according to its internal dimensions like employee values, attitudes, knowledge, and personality. These various dimensions have been studied under the title of diversity (Herring, 2009; Sommers, 2006; Roh & koo, 2019).

In the literature, workforce diversity has been approached in a variety of ways. For example Hewlett, Marshall & Sherbin (2013) classified workforce diversity inherent or acquired. According to Hewlett and colleagues, "inherent" characteristics are those intrinsic to individuals (gender, age, and race, for example) whereas "acquired" characteristics consist of those obtained after birth, including level of education or occupation. Many companies increasingly recognize the importance of leveraging the characteristics and abilities of all their employees through work-teams to optimize organizational competitiveness (Sun et al. 2017). Thus, endeavors to integrate different age, gender

and race groups will likely succeed if implemented with a deeper understanding of the effects of consequent demographic diversity (DD) on the performance of affected teams.

Some prominent scholars (see: McMahon, 2011) have promoted workforce diversity as a catalyst for improvements in firms. Diversity in business helps in pooling the best talent, reduces the gap between increasingly diverse customer bases, unleashes creativity, promotes innovation and thereby enhances the competitiveness of the organization. Workforce diversity is a key factor for innovation and effective organizational performance. The diverse workforce from different countries around the globe supplies pool of employees with a wide range of diverse skills, knowledge and abilities that consequently affect the innovation and organizational performance (Khan, et.al. 2020). Previous research (for example: Ozbilgin, 2008; Sanyang & Othman 2019; Lage, Estifania, justino & kariny, 2020) suggests that there can be a positive relationship between diversity and innovation in a business context.

Despite the widely acknowledged value of diversity in overcoming adaptive challenges and the substantial body of empirical literature on this matter (Talke et al., 2010). Meta-analytic reviews have suggested that the effects of diversity on work unit performance are not yet fully understood, and empirical findings are mixed (Bell, et al., 2011; Horwitz & Horwitz, 2007; Hulsheger, Anderson, & Salgado, 2009).

Much of the theoretical and empirical research on diversity since the 1990s has been particularly spearheaded in a developed countries context which is unsurprising given the country's multiethnic population (Herring, 2009; Sommers, 2006). In contrast to this range of research on diversity in developed countries, developing countries context, particularly in African context has not yet initiated such widespread theoretical debates or engaged in su cient empirical research in public organizations.

In Ethiopian context, recently, there are changes in the human resource composition of Ethiopian public organizations. According to the World Bank (2019), the Ethiopian female population amounted to 49.97% of the total population. Nevertheless, the representation of female have come about with the steady decrease in the number of female employees and the increased presence of diverse age groups in the public workforce. Due to this, the government has recently done in moving the retiring age from 55 to 60. Thus, such changes have urged interest in diversity in Ethiopian Telecom Company particularly in relation to its effects on innovation in public organizations. Besides, as per the researchers' knowledge so far, there is no empirical studies and published article on the study area.

Regarding the research setting, Ethio-telecom is a public sector owned and managed by the government, which is one of the biggest public company contributing to the Ethiopian GDP following Ethiopian Airlines. Ethio-telecom as high- tech industry characterized by a strong focus on technology, invention, involvement of a high percentage of IT professionals and engineers, intensive global competition, short-cycle knowledge, and technology-oriented product markets. And taking all these points, the effects of working force diversity on firm innovation at ethio telecom may be influenced by a distinct composition. According to Ethiopian central statistical agency report (CSA, 2018), of the total employed work force in Ethiopia, only 0.01% are working in the high-tech industry where a very small percentage of women workforce are engaged in (e.g., 0.056% on Wired & wireless telecommunications activities,0.016%, computer programming activities). Moreover, the average ages of workers in most industries fall within the 45–54 age group whereas the majority of labor personnel in high-tech industries is distributed in the 35–44 age group. The implication of the report indicates that young male workers dominating high-tech industries, which in return may create an engineering- and technology-centered culture that is frequently dominated by young male workers, and this culture highlights dysfunctional social categorization/stereotypical reactions. With

the increasing richness of diversity in the world and in the workforce, we need to expand our outlook and use creative strategies to be successful. Every organization needs to realize the full potential of all employees and help to achieve its goals. Hence, this study examined the role of workforce diversity in improving organizational innovation at ethio telecom,

The overall objective of the study was to examine the effect of workforce diversity on innovation with reference to ethio telecom. Even though, the relationship between diversity and innovation are complex and multidimensional, this study focused to examine the role of work force diversity in terms of gender, age and education background contribute for the improvement of innovation in case of Ethio telecom. The reason behind selection of the above variables were due to ethio telecom selection criteria for recruiting which is bounded with age, gender and education background like fresh and highly scored students. This article is organized in to introduction, literature review, methods, results and dissuasion, conclusion, recommendation and future research directions.

Literature Review, Hypothesis Development and Conceptual Framework

Definition of Constructs

Organizational Innovation is one of the dependent variable that is studied in the management research literature. Different scholars' defined organizational innovation in different ways. For this study, organizational innovation is the collection of individuals who are interdependent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social systems (for example, business unit or corporation), and who manage their relationships across organizational boundaries (Sun et al. 2017). Organizations seek ways to build innovation and creativity within their workforce and processes (Rock & Grant, 2016).

Innovation is considered a driving force of competitiveness on a wide variety of levels. Early research on innovation by Schumpeter (1947) identified what he called the 'recombinant search' as a crucial element of innovative activities. According to Schumpeter, innovations primarily occur through a creative recombination of unutilized, existing knowledge. If the essence of innovative activities is a 'recombinant search,' diversity is the most important driving force behind innovation because the presence of diverse perspectives in an organization enhances the possibility of conducting a successful recombinant search. Indeed, the existing literature provides a clear link between an organization's capacity for innovation and its level of diversity (Ostergaard et al., 2011; Page, 2007). Page (2007) shows that groups with members who have diverse backgrounds usually perform better at creative problem- solving tasks compared to groups with members who have similar backgrounds

Diversity focus on the group aspect, defined as an aggregate team-level construct that represents differences among members of an interdependent work group with respect to a selected, specific personal attribute (Josh and Roh ,2009). Age diversity is defined as the extent to which the age of all group members differ within a group (Pesch, Bouncken, & Kraus, 2015). Age diversity is essential for organizations to successfully integrate youth into teams comprising. Age diversity is defined as the extent to which the age of all group members differ within a group (Pesch, Bouncken, and Kraus 2015). According to the theory of social categorization, members of a given age group tend to share similar experiences and regard themselves as an 'in-group,' as a result showing favoritism to those of a similar age. Previous studies have found that persons of different ages show different behaviors, which can cause conflicts and misunderstandings (Pesch, Bouncken, & Kraus, 2015). Pesch, Bouncken, and Kraus (2015) further note that team members of different ages might also bring diverse experiences and expertise into the innovation process which can increase the innovation performance.

Gender diversity is measured by the proportion of males and females (gender distribution) in a team (Velinov and Malý 2016). Gender diversity is measured by the proportion of males and females (gender distribution) in a team (Velinov &Malý 2016). A balanced number of males and females are considered diverse whereas teams which are dominated by one gender are considered gender-homogeneous. Gender was not a subject of debate in Ethiopia in the period when male employees constituted the majority within organizations. But this issue has become a concern in light of the increase in the number of female employees in public organizations.

Knowledge diversity is one of the most important dimensions of deep-level diversity. It signifies the extent to which organization members have diverse knowledge and information related to their jobs (Currie & White, 2012). Organizational and individual knowledge are the intangible assets that entail a large segment of the internalized and externalized organizational value chain (Mudambi & Puck, 2016). The value chain requires one to employ the knowledge resident in the workers of the organization, to enable the decisions, culture, and unique characteristics of workers (Maruta, 2014; Pontikes & Barnett, 2017; Wartzman, 2014).

Regarding knowledge diversity, it is one of the most important dimensions of deep-level diversity. It signifies the extent to which organization members have diverse knowledge and information related to their jobs. Recently, public organizations have faced more complicated and varied issues due to internal and external socioeconomic changes. Thus, they require employees who possess interdisciplinary knowledge in several fields. The presence of diverse knowledge may also lend itself to the evolution of new and innovative perspectives (Currie & White, 2012). In the existing literature, knowledge diversity is the most important factor underpinning innovation. Teams composed of members who possess diverse knowledge and technical expertise enhance the teams' innovative problem-solving capacities by increasing the quality of decision-making through the sharing of diverse information (Mitchell & Boyle, 2015; Mitchell, Parker, & Giles, 2011). It is important that work force diversity, its dimensions, innovation, teams, other relevant concepts and consequent relationships as defined within the literature are understood to provide the basis for conducting this study.

Theoretical Perspectives

Opposing theoretical perspectives on diversity

Related literature offers varying theoretical perspectives that render both the negative and positive effects of diversity on innovation highly plausible. Innovation literature has endorsed the value of variation and heterogeneity in engendering innovation based on the potential informational benefit from the no overlapping backgrounds of constituting members (Swann, Polzer, Seyle, & Ko, 2004); we refer to this informational benefit from the positive side of diversity as 'process gain' in this study. This view reflects the decision-making perspective and information elaboration theory or synergy perspective of diversity (Dwertmann, Nishii, & Van Knippenberg, 2016). Likewise, knowledge management literature suggests that integrating diverse knowledge and reconfiguring ideas from various sources are critical steps toward innovation (De Luca & Atuahene-Gima, 2007). Strategy research from a resource-based view has highlighted the significance of sourcing heterogeneous resources in creating distinctive firm capabilities to achieve competitive advantages (Ray, Barney, & Muhanna, 2004).

However, the major theoretical underpinnings of diversity literature also emphasize the potential detriments of diversity. Self-categorization theory suggests that people categorize themselves into various social groups in which they share self-identity with in-group members (Horwitz & Horwitz, 2007; Jackson, Joshi, & Erhardt, 2003).

Demographic diversity tends to generate subgroups and invigorates a dis- criminatory climate in organizations driven by in-group favoritism and stereotyping among subgroups, thereby im-

peding collaborative efforts among diverse members (Kunze et al., 2011, 2013). Similarly, the social chasm that results from status diversity and disparity may also create an institutional barrier that reduces the willingness of employees to collaborate for the development of innovative solutions (Van der Vegt, Van de Vliert, & Huang, 2005). In this sense, the potential informational benefit of diversity can be compromised by the 'process loss' resulting from the potential negative side of diversity, such as dysfunctional intergroup tension due to the discrimination climate and difficulty of sharing task related ideas and collaboration among members (Choi, Sung, & Zhang, 2017).

Contingency theory perspective on firm-level diversity

Existing studies have theorized and empirically substantiated the benefits and drawbacks of diversity (Dwertmann et al., 2016; Hulsheger et al.,2009). However, meta-analytic studies have frequently identified a non-significant or negligible direct relationship between diversity and performance (Horwitz & Horwitz, 2007; Jackson et al., 2003). Accordingly, diversity researchers have claimed that examining the main effects of diversity is unproductive, and they have called for the consideration of the boundary conditions of diversity effects (Ely & Thomas, 2001; McKay & Avery, 2015; Richard et al., 2007).

With the repeated calls for considering situational factors to reconcile cumulatively inconsistent findings, contingency theory has emerged as a promising alternative framework for diversity that complements the pre-vailing theoretical views, such as self-categorization and information processing or synergy perspectives (Dwertmann et al., 2016; Guillaume, et.al, 2017; Joshi & Roh, 2009). In the development of contingency theory, organization theorists have long attempted to identify a match between the characteristics of the organization and those of its environment for high firm performance. Contingency theory claims that the optimal course of managerial action depends on internal and external situations (Donaldson, 2001).

Empirical Review

In the nexus between workforce diversity and organizational innovation, there is scarcity of empirical literatures especially in the developing countries like Ethiopia. In this section, some important empirical studies are reviewed and presented here.

In 2015, Mushtaq and colleagues studied workforce diversity as a source of innovation in context of telecom sector in Pakistan. The study explores the impact of gender, age and education background on innovation in Pakistani telecom sector which is well-known to employ highly diversified workforce. The targeted population for the study was 30 employees in all levels of management from the 2 telecommunication companies (15 employees from Zong and 15 employees from Mobilink) in (southern Punjab, D.G.Khan) Pakistan. Data was collected through self-administered questionnaire. In the study, non-probability technique was used in selecting the sample. The findings of the study indicated that only two variables, gender and educational background were significant in explaining the variance in employee performance when different workforce work together while surprisingly, age diversity does not. It was recommended among others that organizations should view diversity as part of their key strategy rather than a business expense will benefit far greater.

In Nigeria, a study by Isiaka &Ibitomi (2019) was conducted on the nexus between workforce diversity and product innovation in the manufacturing sector. Sample of 301 drawn from the population and data collected through self-administered questionnaire. From the findings of the study, they were concluded that employees with diverse educational background create opportunities for greater innovation and more creative solutions to problems because educational background diversity brings in new skills, knowledge, information and unique perceptive to the organization and enhances effective problem solving and decision making processes.

In the same vein, Ozgen, Nijkamp and Poot (2011) examined the impact of cultural diversity on innovation, evidence from Dutch firm-level Data. The study constructed and analyzed a unique link employer-employee micro-data set of 4582 firms based on survey and administrative data obtained from statistics in Netherlands. The study excluded firms in the hospitality and other industries that employed low-skilled migrants. It was found out that firms in which foreigners account for a relatively large share of employment are somewhat less innovative. However, there is strong evidence that firms that employ a more diverse foreign workforce are more innovative particularly in terms of product innovations.

Yang and Konrad (2011) researched the effect of work place diversity and employee involvement on organizational innovation. Using a sample of 182 large Canadian organizations. The study found a three – way interaction between level of employee involvement, high variation in involvement and racio-ethnic diversity on innovation. The study explains that in organizations with high levels of employee involvement high variation in involvement was associated with higher involvement levels among racio-ethnic minorities, resulting in a stronger association between diversity and innovation.

A Study was made by García-Martínez and colleagues (2017) found a positive association between workforce educational diversity and both radical and incremental innovation. Along these lines, Bolli et al. (2018) found that vertical educational diversity increases the extensive margin of R&D and new product innovation. Some scholars have also reported that gender-heterogeneous groups tend to exhibit increased conflict, low cohesion and increased turnover (Martinez, Zouaghi, & Marco 2017). On the other hand, Ruiz-Jiménez and del Mar Fuentes-Fuentes (2016) concluded that gender diversity in top management teams seems to encourage a work climate that stimulates the development of new ideas, exchange of knowledge, communication, and trust, while also favoring execution of more processes and Existing literature offers inconsistent results regarding the relationship between gender diversity and performance out comes routines, and the use of resources that are more effective in achieving innovation in products and processes.

In the central Asia, a study was conducted by Anastasia Lipovka and collagues (2021) on the role of innovators and their genders in managing innovations in organizations and aims at identifying women and men managers' innovation capability. The quantitative research method was utilized among 224 respondents from Kazakhstani private organizations functioning in extraction, construction, production, energy, service, trade, and education industries. Subordinates assessed their supervisors' (first-line, middle-level, and top managers) innovation capability: stance on innovations, support of subordinates for innovative ideas and activity, and adopting innovation. The findings show that women managers 'have better-adopting innovations compared to men managers. Women and men managers demonstrate an equally positive attitude towards innovations in organizations but the former outperform the latter in adopting innovations and encouraging employees to innovate.

As it is indicated in the empirical reviews, most of the studies were conducted in developing and Asian countries. Secondly, some studies only focused on education, age or gender instead of the combined effect of the three diversity variables to effect organizational innovation. Thirdly, there are no empirical and published studies in the Ethiopian context.

Conceptual Model and Hypothesis Development

Conceptual Framework

Based on many research three variable of workforce diversity is very important in affecting organization innovation so the researcher came out with a framework as stated below. The study consists independent variables of gender, age and educational background and the dependent variable of organization innovation. These relationships are represented in the figure below.

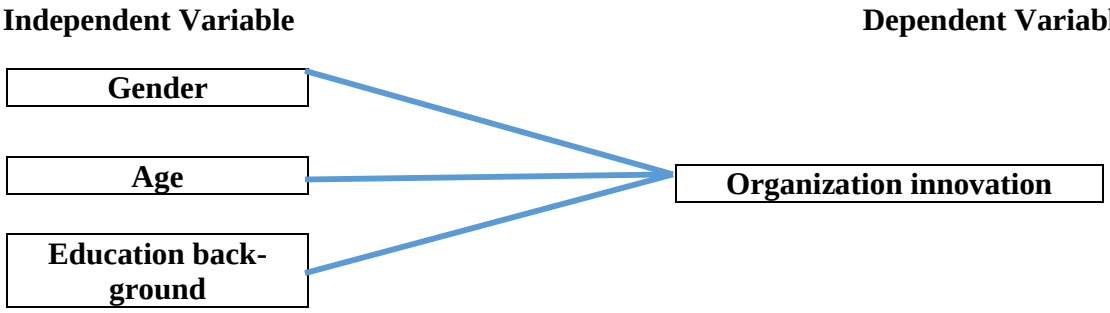

Figure 1. Conceptual Framework

Hypothesis Development

Based on the research objective and the proposed conceptual framework, the following hypotheses were formulated:

H1: There is a significant relationship between gender diversity and organization innovation.

H2: There is a significant relationship between age diversity and organization innovation.

H3: There is a significant relationship between educational background and organization innovation.

Methodology

In this study, descriptive research design using quantitative approach was employed to examine the role of workforce diversity on improving organizational innovation. The target population of the study were employees of the ethio-telecom. The sampling technique in this study was stratified random sampling. Henceforth, stratified random sampling technique was served as the basis for selecting samples from the target population by dividing the employees with gender. Both genders (Male and Female) also have equal probability to include in the sample size. The sample size determination was done based on Solvin's sample size formula. Based on the sample size formula, the participants was assumed to be representative to the total population with 95% confidence level. The Solvin sample size formula is stated as follows;

$$n = \frac{N}{(1+Ne2)}$$

$$n1 = \frac{N1(n)}{N}$$

$$n2 = \frac{N2(n)}{N}$$

Where,

N is the population size, n is the sample size,

N1 is total Population of Female; n1 is sample size of female,

N2 is total population of Male; n2 is sample size of male,

In this study, the total population (N= 655) was six hundred fifty five. From this the total female employees **(**N1= 295) and male employees (N2= 360) are stated below with e= 5% (0.05)

$$n = \frac{N}{(1+Ne^2)} \qquad n = \frac{655}{(1+655(0.052))} \qquad n = \frac{655}{2.638} \qquad n = 248$$

n1=N1(n) n1= 295(248) n1= 73,160 n1= 112
N 655 655
n2= N2(n) n2= 360(248) n2= 89,280 n2= 136
N 655 655

The sample size of the study was 248 and samples were calculated from the total population proportionally as it is indicated in the table below. Samples are selected based on simple random sampling techniques.

Table 1. Sample size

Stratum	Population size	Proportion	Sample size
Female	295	.45	112
Male	360	.55	136

Standard questionnaires were adopted from previous empirical studies for both the independent and dependent variable. To measure gender diversity, the questionnaire was adopted from Joseph R. & Chinnatambis (2015) with nine (9) items; for age diversity, the questionnaire was adopted from Abbas, Qaisar, Hameed & Abdul (2010) with five (5) items; for education background, the questionnaire was adopted from Giles (2008) with eight (8) items; whereas for organizational innovation, the questionnaire was adopted from Scott and Bruce (1994) with seven (7) items.

To collect relevant data, the study employed both primary and secondary sources of data. The primary data collected using survey questionnaires with employees of ethio telecom based on personally administrated survey. Secondary data also collected from HRM office, publications, books, journal articles, and online materials from the web. The questionnaire was tested by Pilot test using Cronbach reliability coefficient testing. According to Zikmund et al., (2010), measurement scales with coefficient alpha score of 0.6 and 0.7 indicate fair reliability, a Cronbach's alpha score of .70 or higher and considered as adequate to determine reliability. An alpha coefficient of 0.7 was obtained. Thus, the data generation was reliable as it is displayed in the table below (see table 2).

In order to ensure the validity of the research instrument, the researchers gave the draft questionnaire to the experts and senior colleagues in the field to evaluate appropriateness of the items and to ensure that all the questions asked in the questionnaire fully exhaust all that are implied by the research questions, objectives and the formulated hypotheses. In addition, feedback from the pilot survey were another way of checking the appropriateness of the question.

Table 2. Reliability test of the measurement instrument

Constructs	Cronbach Alpha	No of items
Gender	.700	9
Age	.783	5
Education background	.761	8
Organization innovation	.853	7

Data analysis was carried out using the Statistical Package for Social Science (SPSS) version 26. The statistical analysis includes descriptive statistics (frequency, mean and standard deviations) that was used to analyze the perception of respondents towards the role of workforce diversity on improving organizational innovation measurement items used in the study while, inferential statistics (Pearson correlation, and factor analysis statistical techniques) was used to analyze the respondents' level of agreement or disagreement in the differences between the variables employed in the

study (Creswell, 2014) and to ensure internal consistency among the items included in each of the scales was estimated using a Cronbach's coefficient alpha.

Results

Response Rate

The essence of determining the response rate is to enquire whether it is sufficient enough to generalize the results to the target population (Mungai, 2015). Generally, 248 questionnaires were distributed to sample respondents of ethio telecom head office employees out of these 112 employees were females and 136 males. Therefore, out of the total 248 distributed questionnaires 236 questionnaires from (female 100, and male 136) were returned. Thus, as shown in table 3, the researcher attained a total response rate of 94.64% which believe to be encouraging.

Table 3. Response Rate

Category	Sample Size	Expected Response	Actual Response	Percentage
Female	112	112	100	89.28
Male	136	136	136	100.0
Total	**248**	**248**	**236**	**94.64**

Profile of Respondents

In the questionnaire survey, each respondent was asked three questions regarding their demographic profile. This part provides an analysis of the demographic information which includes gender, age, and educational level.

Table 4. Demographic Information of Respondents

Demographic Information		Frequency	Percent
Gender	Male	136	52.62
	Female	100	42.37
	Total	**236**	**94.99**
Age	20-29 years old	47	19.9
	30-39 years old	85	36.0
	40-49years old	87	36.9
	50-59years old	17	7.2
	Total	**236**	**100**
Education Level	2nd Degree and above	40	16.9
	Degree	130	55.1
	Diploma	61	25.8
	Below Diploma	5	2.1
	Total	**236**	**100.0**

As it is indicated above (see table 4), male respondents constituted 52.62%, while 42.37% were female. The data is showing that the male gender is noticeable when we compare with female gender. In terms of age, 19.9% age group are within 20-29, 36% and 36.9% are within the age group of 30-39 and 40 – 49 respectively remaining 7.2% of age group are within 50-59years old, cumulatively 92.8% are within the age group of 20-49. The implication is that a relatively high proportion

of the workforce is in their active productive years. With respect to educational level, 16.9% of the respondents have the background of 2nd Degree, while 55.1% of the respondents are Degree holders and the remaining 25.8% and 2.1% of the respondents have Diploma and Below Diploma holders respectively. Since ethio telecom is highly growing telecom sector employees working with good background in their education levels is essential. Cumulatively 72% of the employees have first degree and 2nd degree which shows how the company have well educated employees.

Descriptive Analysis

Measurement of central tendencies was used to discover the average scores for the five interval scaled constructs with 1 indicating ―Strongly Disagree (SD), 2 indicating ―Disagree (D), 3 indicating ―Neutral (N), 4 indicating ―Agree (A), and 5 indicating ―Strongly Agree (SA). All items or questions with a particular percentage, mean score and standard deviation were obtained from SPSS output. Thus, the statistical records of the respondent level of agreement with regard to attribute on each independent (gender, age and education background) and dependent variable (organizational innovation) with their responses were shown below (see table 5).

Gender

Table 5. Mean and SD of respondents with respect to Gender

Statements (Items)	SD	D	N	A	SA	Mean	SD
Employees are not discriminated during hiring and recruitment process on gender basis	6.8	19.1	22.9	42.8	8.5	3.27	1.08
Do you believe there is fair gender diversity on the company	8.5	16.5	22.0	36.0	16.9	3.36	1.20
Does ETHIO attract and hire women	8.1	24.6	8.9	37.7	20.8	3.38	1.28
Fair treatment is given to employees in different position whether male or female.	3.8	16.5	22.0	38.1	19.5	3.53	1.10
Do you believe female employees contributed to the success of the organization?	5.5	19.5	16.9	39.4	18.6	3.46	1.16
Gender diverse team showed better problem solving and decision making skills than gender homogenies teams.	2.1	19.9	23.3	33.9	20.8	3.51	1.09
Does the company career development includes women	9.3	27.1	11.0	31.8	20.8	3.28	1.31
Training and development program is structured to meet the criteria/ requirement of both gender.	6.4	25.4	10.2	35.2	22.9	3.43	1.26
Gender diverse teams achieved target due to the good relationship and effective communication	5.9	24.2	10.6	33.9	25.4	3.49	1.27

The average number of respondents to the statement “Fair treatment is giving to employees in different position whether male or female” has the highest mean score ($\bar{x}$ =3.53), while “Employees are not discriminated during hiring and recruitment process on gender basis” has the lowest average or mean number of respondents ($\bar{x}$ = 3.27). The maximum variability of the respondents is occurred to the item “Does the company career development includes women (S = 1.31), while the

minimum variability of the respondents is occurred to the statement "Fair treatment is giving to employees' indifferent position whether male or female" (SD= 1.07).

Higher number of the respondents (51.3%) agree that there is no any discrimination by the company while hiring and recruitment process, though 25% of respondents disagreed with this statement. 52.9% of the respondents agreed that there is fair gender diversity on the company, whereas 25% of respondent disagreed. 58.5% of the respondents agreed that ETHIO attract and hire women and 32.7% of respondent disagreed. The maximum number of the respondents (57.6%) agreed with Fair treatment is given to employees in different position whether male or female but 20.3% disagreed with the statement. 58% of respondents agreed that female employees contributed to the success of the organization and 25% of respondents disagreed with this statement. The higher of the respondents 54.7% agreed with gender diverse team showed better problem solving and decision making skills than gender homogenous teams and 22% of respondents disagreed. 52.6% of respondents agreed that the company career development includes women and 36.4% of respondents disagreed. 58.1% of respondents agreed that training and development program is structured to meet the criteria/ requirement of both gender while 31.8% of respondents disagreed. Finally, 59.3% of the respondents agreed that gender diverse teams achieved target due to the good relationship and effective communication while 30% of respondents disagreed with this statement.

Age

Table 6. Mean and SD of respondents with respect to Age

Statements (Items)	SD	D	N	A	SA	Mean	SD
Ethio telecom provides equal opportunities for training and career development to all age group.	8.1	22.5	12.3	37.3	19.9	3.39	1.25
Ethio telecom encourages employees to work with employees of different age	7.2	20.8	9.3	37.3	25.0	3.52	1.27
At work, I experience bonding with people of different age group.	2.1	19.5	22.5	36.0	19.9	3.52	1.08
The age differences in work place do not create conflict.	5.1	23.3	10.6	34.7	26.3	3.54	1.25
Supervisors at different sections include all members at different ages in problem solving and decision making.	9.3	4.2	9.3	31.8	25.4	3.40	1.34

As it is displayed in the above table (see table 6), the highest average number of respondents ($\bar{x}$ = 3.538) are favored to the statement "Age difference in work place do not create conflict", while "ethio telecom provides equal opportunities for training and career development to all age group" has the lowest average number of respondents ($\bar{x}$ = 3.39). The maximum variability of the respondents is occurred to the items "Supervisors at different ages include all members at different ages in problem solving and decision making" with standard deviation (SD = 1.34), while the minimum variability of the respondents is occurred to the statement "At work, I experience bonding with people of different age group" having standard deviation (SD = 1.08).

With respect to equal employment opportunity question, most of the respondents (57.2%) agreed that the company provides equal opportunities for training and career development to all age group, while 30.6% of respondents disagreed with this statement. Higher number of the respondents 62.3% agreed that the company encourages employees to work with employees with different age group, but 28% of respondents disagreed. Similarly, the statement "At work, I experience bonding

with people of different age group" have the maximum number of the respondents (55.9%) but 21.6% of respondents disagreed with this statement. (61%) of respondents believed that age differences in work place do not create conflict but 28.4% of the respondents disagreed. Finally, 57.2% of the respondents agreed that supervisors at different section includes different age group on problem solving and decision making, while 34.5% of respondents disagreed with this statement.

Educational Background

Table 7. Mean and SD of respondents with reference to Educational Level

Statements (Items)	**SD**	**D**	**N**	**A**	**SA**	Mean	SD
The recruitment plan is based on the educational background.	7.2	28.0	9.3	33.1	22.5	3.36	1.30
ETHIO gives paid study leave to employees who want to advance their education	10.6	13.6	17.4	36.9	21.6	3.45	1.26
Opportunities for growth and advancement exist for employees who have low educational qualifications.	2.1	19.9	23.3	33.9	20.8	3.51	1.09
Educational background do not bring conflict among employees	9.3	27.1	11.0	31.8	20.8	3.28	1.31
As an employee of ETHIO, l experience lack of confidence due to my educational background.	6.4	25.4	10.2	35.2	22.9	3.43	1.26
ETHIO gives equal treatment when it comes to educational background.	5.9	24.2	10.6	33.9	25.4	3.49	1.27
All educational background considered during promotion	8.1	22.5	12.3	37.3	19.9	3.39	1.26
Ethio strive to develop specialty of employee based on their education background	4.7	17.4	13.6	32.2	32.2	3.70	1.22

Table 7 shows the mean and standard deviation of respondents with reference to educational backgrounds. As it is indicated in the above table, the highest average number of respondents ($\bar{x}$ =3.699) believed that ETHIO strive to develop specialty of employees based on their educational background, while the minimum number respondents in average ($\bar{x}$ =3.27) educational background do not bring conflict among employees. But, there is a greater variability on the respondents (SD = 1.31) educational background do not bring conflict among employees, while the minimum variability of the respondents existed to the statement "opportunities for growth and advancement exist for employees who have low educational qualifications" having standard deviation (SD = 1.09).

Regarding the question of recruitment plan of the company, the finding of the study shown that the recruitment plan of the institution is based on the educational background of applicants is favored by the maximum number of the respondents 55.6%, while 35.2% of the respondents are disagreed. Higher number of the respondents 58.5% agreed that the company provides paid study leave to employees who further their education and 24.2% disagreed to the statement. 54.7% of the respondents agreed and 22% of respondents disagreed that "opportunities for growth and advancement exist for employees who have lower qualification in education". 52.6% of respondents agreed on the statement that "educational background do not bring conflict among employee", while 37.4% of respondents disagreed with this statement. 31.8% of the respondents disagreed with statement "As

an employee of ETHIO, l experience lack of confidence due to my educational background", while 58.1% of respondents agreed. 59.3% of the respondents agreed that ETHIO gives equal treatment when it comes to the diversity of education background, while 30% of respondents disagreed with the statement. 57.2% of respondents agreed that all educational background considered during promotion, while 30.6% of respondents disagreed with this statement. 64.4% of respondents agreed on the statement "ETHIO strive to develop employees' specialty based on their education background", while 22.1% of respondents disagreed with this statement.

Organizational Innovation

Table 8. Organizational Innovation Mean and SD

Statement (Items)	SD	D	N	A	SA	Mean	SD
ETHIO staff members create new ideas to improve service quality.	2.1	19.5	22.5	36	19.9	3.64	1.13
Training given by the company to encourage to work better and to enhance innovation	5.1	23.3	10.6	34.7	26.3	3.54	1.23
Develops new technologies to set citizens' needs.	9.3	24.2	9.3	31.8	25.4	3.28	1.34
ETHIO staffs adapted changes and new technologies.	6.4	22	9.7	38.6	23.3	3.44	1.29
Employees tries to apply new ideas to work in a systematic way.	3.8	16.5	22	38.1	19.5	3.20	1.12
Employees are given a chance to apply their own methods of doing their work.	5.1	23.3	10.6	34.7	26.3	3.46	1.27
I am satisfied with deploying new methods and procedures in performing my work	5.9	24.2	10.6	33.9	25.4	3.43	1.28

As it is shown in table 8, the highest average number of respondents ($\bar{x}$=3.63) believed that Ethio staff members create new ideas to improve service quality, while the minimum number respondents in average ($\bar{x}$=3.20) employees try to apply new ideas to work in a systematic way. However, the results of the finding revealed that there is a greater variability on the respondents (SD = 1.34) develops new technologies to set citizen's needs, while the minimum variability of the respondents is existed to the statement "ETHIO staff members create new ideas to improve service quality" having standard deviation (SD = 1.13). For the statement "ETHIO staff members create new ideas to improve service quality" was favored by the maximum number of the respondents 55.9%, while 21.6% of respondents disagreed. Higher number of the respondents 61% agreed that training given by the company to encourage to work better and to enhance innovation, while 28.4%of respondents disagreed.

Similarly, for the statement "employees develop new technologies to set citizens 'needs" 57.2% of respondents agreed and 33.5% of respondents disagreed with this statements. 61.9% of respondents believe "ETHIO staffs adapted changes and new technologies" while, 28.4% of respondents disagreed with this statement. 57.6% of respondents agreed with the statement of "employees try to apply new ideas to work in a systematic way" and only 20.3% of respondents disagreed this statement. 61% of respondents believed that employees are given a chance to apply their own me-

thods of doing, while 28.4% of respondent disagreed with this statement. 59.3% of respondents agreed on the statement "I am satisfied with deploying new methods and procedures in performing my work", while 30.1% of respondents disagreed.

Correlation Analysis

A Pearson correlation measures the strength of the linear relationship between two variables. A linear relationship is one that can be captured by drawing a straight line on a scatter plot between the two variables of interest. The value of the correlation which ranges between -1.0 and 1.0 provides information both about the nature and the strength of the relationship. The sign of the correlation describes the direction of the relationship. A positive sign indicates that as one variable gets larger the other also tends to get larger, while a negative sign indicates that as one variable gets larger the other tends to get smaller. The magnitude of the correlation describes the strength of the relationship. The further that a correlation is from zero, the stronger the relationship is between the two variables. A zero correlation would indicate that the two variables aren't related to each other at all. Correlations only measure the strength of the linear relationship between the two variables. Thus, the strength and direction of relationship between variables was able to be analyzed by the researcher using Pearson correlation coefficient analysis. In addition, the researcher used it to measure whether there was a significant relationship between independent variables and dependent variable.

Table 9. Correlation Analysis between Study Variables

Study Constructs	**Organization Innovation**	**Education Background**	**Gender Diversity**	**Age Diversity**
Organization Innovation	1			
Education Background	.739**	1	1	
Gender Diversity	.710**	.892**		
Age Diversity	.709**	.839**	.776**	1
**. Correlation is significant at the 0.01 level (2-tailed).				

The above table (see table 9) indicates the association between study variables. The result of the correlation analysis demonstrated that there exist positive correlation between the study constructs (age, gender, educational level and organizational innovation. Clearly among all the variables age and educational background have high positive correlation with organizational innovation variable as well as all the diversity predictors have positive correlation with organization innovation. The result shows the strength and significance at (Education Background r= 0.739, p< 0.01, Gender Diversity r=0.710, p<0.01 and Age Diversity r=0.709, p<0.01). The implication is that workforce diversity has a positive and significant association with organizational innovation.

Multiple Regression Analysis

Before going directly into the multiple regression analysis, this study has conducted and checked the multivariate assumptions (test for normality, multicollinearity, linearity) and it was found that there is no problem regarding the assumptions. Multiple linear regression analysis helps us to establish the mathematical model showing how the independent variables and dependent variable interrelated. The R value is the correlation coefficient between the dependent variable and the independent variables. Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable.

Analysis of Variance (ANOVA)

Analysis of variance in this study was used to determine whether the model was a good fit for the data. If the F is significant, it indicates that the model for all independent variables combined predicts significantly more variability in the dependent variable. The p-value associated with F value .000 which is lower than the alpha value 0.05. In addition, ANOVA table (see table 10) indicates that there was significant impact of the independent variables on the dependent variable and the model applied was significantly suitable to predict the dependent variable.

Table 10. Model Fitness

ANOVA						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	70.248	3	23.416	107.298	.000[b]
	Residual	50.630	232	.218		
	Total	120.877	235			
a. Dependent Variable: Organization Innovation						
b. Predictors: (Constant), Age Diversity, Gender Diversity, Education Background						

According to the model summary in the above table (see table 10), the value of correlation coefficient(R) for a set of independent variables (gender, age and education background) with the dependent variable (organization innovation) was 0.762. Therefore, there was a positive correlation between those independent variables and dependent variable. The value under a heading R square (0.581) measures how much of the variance in the dependent variable was explained by the predictors of independent variables. It is also demonstrated that the independent variables are strong predicators of organizational innovation which is indicated by square 0.581. This tells us that the independent variables estimate 58.1% of the variability of the dependent in the study.

Table 11. Model Summary

Model Summary			
Model	**R**	**R Square**	**Adjusted R Square**
1	.762[a]	.581	.576
a. Predictors: (Constant), Age Diversity, Gender Diversity, Education Background			
b. Dependent Variable: Organization Innovation			

Table 11 shows the multiple regression coefficient result. The Coefficient for the constant and independent variable (Gender, Age and Educational Background) helps to predict the dependent variable (Organizational Innovation) using independent variables. As shown in Table 12, all variables were significant in the regression model. These are Education Background, Gender Diversity and Age Diversity. Which confirmed by p-value less than is p=0.05 or below than the common alpha level of 0.05, which indicates that they statistically significant.

Based on the findings that gender diversity, age diversity, and educational diversity to a constant zero, innovation in ethio telecom would be at .477, at one percent change in age diversity would lead to increase innovation in ethio telecom by a variation of 0.316(31.6%) and same with the rest independent variables.

Table 12. Regression Coefficient Result

Coefficients								
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**Collinearity Statistics**	
		B	**Std. Error**	**Beta**			**Tolerance**	**VIF**
1	(Constant)	.477	.175		2.725	.007		
	Education Background	.326	.114	.316	2.874	.004	.150	6.678
	Gender Diversity	.245	.111	.210	2.218	.028	.201	4.967
	Age Diversity	.284	.080	.281	3.572	.000	.292	3.424
a. Dependent Variable: Organization Innovation								

The independent variables (combined effort of Gender, Age and Educational Level) estimate 58% of the variability of the dependent (Organizational Innovation) in the study. That is to mean Education Background, Gender Diversity and Age Diversity determines the organizational innovation by 32%, 21% and 28%. Based on the analysis the below model was developed. $Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \varepsilon$

Where,

- Y- Dependent Variable
- β0- Constant (Coefficient of Intercept)
- X1 … X3 - Independent Variables
- β1… β3- Regression Coefficient of Independent Variables
- ε - Random Error

For this study, the model was expressed as follows:

Y=.477+.316 (EB) +. 210 (GD) +. 281 (AD)+ ε

Where
Y _ Organizational Innovation
EB _ Education Background
GD _ Gender Diversity
AD _ Age Diversity

Hypothesis Testing

In this study, three hypotheses were formulated and tested. The proposed hypothesis and multiple regression results were presented here.

The first hypothesis proposed that there is positive and significant relationship between Gender Diversity and Organizational Innovation. The finding of the study revealed that there is a significant relationship (β =o.210 and p< 0.05) between gender diversity and organization innovation. Thus, hypothesis one is accepted.

The second hypothesis was proposed as there is a positive and significant relationship between age diversity and organization innovation. The multiple Regression Analysis result revealed

that there is a positive and significant relationship (β =o.281 and p< 0.05) between age diversity and organization innovation. So, hypothesis two is accepted.

Finally, the third hypothesis indicated that there is a significant relationship between educational background and organization innovation. The fining of the study established that there is a positive and significant relationship between age diversity educational background and organizational innovation. The finding of the study shown that there is a positive and statistically significant relationship (β =o.281 and p< 0.05) between educational background diversity and organization innovation. So, hypothesis three is accepted. The implication of the study revealed that workforce diversity has a positive and statistically significant effect on organizational innovation. The summary of the hypothesis testing is displayed in table 13 below.

Table 13. Summary of Hypothesis Testing

Hypothesis	Accepted/ Supported	Decision
There is a significant relationship between gender diversity and organization innovation	There was positive relationship and significant impact at p-value = 0.000 < 0.05	Supported
There is a significant relationship between age diversity and organization innovation	There was positive relationship and significant impact at p-value = 0.000 < 0.05	Supported
There is a significant relationship between educational background and organization innovation	There was positive relationship and significant impact at p-value = 0.000 < 0.05	Supported

Discussion

This part tries to discuss the impact of workforce diversity on improving organizational innovation in the telecommunication industry with reference to Ethio Telecom. The finding of the study demonstrated that workforce Diversity is a strong predictor of organizational innovation in the telecommunication research settings. Most employers' believed the key benefit from diverse workforce but the notion can be hard to prove or quantify especially when it comes to measuring how diversity affects a firm's ability to innovate. Nevertheless, new research provides compelling evidence that diversity unlocks innovation and drives market growth a finding that should intensify efforts to ensure that execute ranks both embody and embrace the power of differences. The discussion was made based on the specify objective of the study.

The descriptive analysis revealed that there is no any gender discrimination during hiring and recruitment on Ethio telecom and believe there is fair gender diversity on the company. It's also became apparent that ethio telecom attracted and hired women enormously also fair treatment is given to employees in different position for both gender. Besides, the findings shows female employees contributed to the success of the organization. Similarly, training and development programs structured to meet the criteria of both female and male which help to improve career development for women. This implies that there is good practices of workforce diversity in the Ethiopian Telecommunication Company.

The study reveals that staff members create new ideas to improve service quality and also the company helps and encourages the employee by giving trainings to work better and to enhance innovation. The staffs adapted changes and new technologies and 83.3% of respondents agreed employees try to apply new ideas to work in a systematic way because employees are given a chance to apply their own methods of doing. This privilege creates satisfaction on deploying new methods and

procedures in performing their own work.

The correlation analysis also revealed that each of the workforce diversity dimensions have a positive and significant association with organizational innovation. As it is indicated in table 4.7, the result of the correlation analysis demonstrated that there exist positive correlation between the study constructs (age, gender, educational level and organizational innovation. Specifically, Educational Background has a positive and significant association (r= 0.739, p< 0.01) with organizational innovation. Similarly, the result shows the strength and significance association between Gender Diversity (r=0.710, p<0.01) and organizational innovation. Finally, Age Diversity (r=0.709, p<0.01) has a positive and significant association with organizational innovation. Clearly among all the variables, age and educational background have high positive correlation with organizational innovation variable as well as all the diversity predictors have positive correlation with organization innovation. The implication is that workforce diversity has a positive and significant association with organizational innovation. This finding is supported by previous empirical studies (see: Yang and Konrad, 2011; García-Martínez and colleagues, 2017; Anastasia Lipovka and collagues, 2021).

The multiple regression analysis result shows that workforce diversity has a positive and statistically significant effect on organizational innovation. As it is displayed in table 4.11, gender diversity has a positive and significant effect (β =o.210 and p< 0.05) on organization innovation. This finding is in line with previous empirical results (see: Ruiz-Jiménez and Fuentes-Fuentes, 2016; Nijmegen, 2016; Martinez, Zouaghi, & Marco 2017). The study of Martinez, Zouaghi, & Marco (2017) reported that gender-heterogeneous groups tend to exhibit increased conflict, low cohesion and increased turnover. On the other hand, Ruiz-Jiménez and Fuentes-Fuentes (2016) concluded that gender diversity in top management teams seems to encourage a work climate that stimulates the development of new ideas, exchange of knowledge, communication, and trust, while also favoring execution of more processes and routines, and the use of resources that are more e ective in achieving innovation in products and processes. According to Nijmegen (2016) gender diversity and having female top manager have positive effect on firms' likelihood to innovate. In the case of ethio telecom based on the findings more than half of respondents agreed that female employees are contributing for the success of the company.

With regard to age diversity**,** the finding of the study are as per the expectation of the researchers. In this study, it was found that Age diversity has a significant and positive effect (β =o.21 and p< 0.05) on organizational innovation, which is in line with previous empirical studies. Previous studies have found that persons of di erent ages show di erent behaviors, which can cause conflicts and misunderstandings (Pesch, Bouncken, & Kraus, 2015). It was further argued by that Pesch, Bouncken, and Kraus (2015) team members of di erent ages might also bring diverse experiences and expertise into the innovation process which can increase the innovation performance. Based on respondents' perspective, ethio telecom staffs have experience of good bonding with different age group. The findings show that ethio telecom provides equal opportunities for training and career development to all age group and also encourages employees to work with different age group. The employees are highly bonded with each other and do not create any conflict with the age difference. Additionally, the management enables this bond with in employees due to the participating leadership style on tasks, decision making and problem solving to all age group. This implies different age group will not cause for conflict in the work place on this study.

Educational background was also considered as one of major determinant of organizational innovation in the telecom industry. Educational background has a positive and significant effect (β =o.316 and p< 0.05) on organizational innovation. This finding is in line with other previous studies (see: Mitchell & Boyle, 2015; Mitchell, Parker, & Giles, 2011). For example, some prominent scholars such as Mitchell & Boyle (2015) and Mitchell, Parker, & Giles (2011) pointed out that Teams

composed of members who possess diverse knowledge and technical expertise enhance the teams' innovative problem-solving capacities by increasing the quality of decision-making through the sharing of diverse information. This study shows that how much educational background has an effect on organizational innovation performance. The finding of the study revealed that recruitment plan is based on the educational background and gives employees paid study leave to advance their educational level and also growth and advancement exist for employees who have low educational qualifications. Ethio telecom gives equal treatment when it comes to diversity of educational background.

Conclusion

Based on the data collected it's evident that there is no any gender discrimination during hiring and recruitment on ethio telecom and believe there is fair gender diversity on the company. It's also became apparent that ethio telecom attracted and hired women enormously also fair treatment is given to employees in different position for both gender. The findings show female employees contributed to the success of the organization similarly, training and development programs structured to meet the criteria of both female and male which help to improve career development for women. For the other independent variable which is age diversity the findings show that ethio telecom provides equal opportunities for training and career development to all age group and also encourages employees to work with different age group. The employees are highly bonded with each other and do not create any conflict with the age difference. Additionally, the management enables this bond with in employees due to the participating leadership style on tasks, decision making and problem solving to all age group.

Educational background variable was considered as one of major determinant factors that affects organizational innovation. The findings revealed that recruitment plan is based on the educational background and gives employees paid study leave to advance their educational level and also growth and advancement exist for employees who have low educational qualifications. Ethio telecom gives equal treatment when it comes to diversity of educational background. The study reveals that staff members create new ideas to improve service quality and also the company helps and encourages the employee by giving trainings to work better and to enhance innovation. The staffs adapted changes and new technologies and 83.3% of respondents agreed employees try to apply new ideas to work in a systematic way because employees are given a chance to apply their own methods of doing their work.

Based on the findings the result of correlation coefficient between each independent variable (gender, age and education background) and dependent variable (organizational innovation) shown a significant and positive relationships and the objectives of the study fulfilled with positive results.

Workforce diversity has a significant effect on organizational innovation level the results shows in ethio telecom gender, age and education background positively contributed to increase its level of innovation, especially age diversity has contribution on organizational innovation. Ethio telecom has a diverse workforce and encourage to work with both genders, age groups and educational backgrounds and this enables to create new ideas to improve method of doing their work also the staffs have ability to adopt changes and new technologies.

Recommendations

The focus of this research was on the impact of workforce diversity on improving organizational innovation. The results indicated organizational innovation is significantly affected when the diversity variable of age and educational background are considered at ethio telecom. Diversity is a

well-accepted phenomenon at the company. However, human capital should be studied regularly to cope with market needs due to its dynamic nature so, to keep this balanced HR needs to update employee's status frequently. Ethio telecom has excellent age, gender and educational diversity composition and it needs to be manage properly to get the full advantage of the diversity. Additionally, the company needs to avail different skill maximization trainings to increase existing innovation capacity of the employees.

Recommendations for Future Study

Smith (2010) argued that good workforce diversity practices are believed to enhance employee and organizational performance. Based on the model summery, this thesis explained only 42.4% of variance and to fully understand the scenario further studies need to be conducted in order to reveal additional factors affects ethio telecom's organizational innovation. Additional studies help to increase the company performance to compete on today's dynamic technological environment.

References

Bantel, K., & Jackson, S. E. (1989). Top management and innovations in banking: Does the composition of the top team make a difference? *Strategic Management Journal*, 10(S1), 107–124. doi:10.1002/smj.4250100709.

Barczak, G., Lassk, F., & Mulki, J. (2010). Antecedents of team creativity: An examination of team emotional intelligence, team trust and collaborative culture. *Creativity and Innovation Management*, 19(4), 332–345.

Bell, S. T., Villado, A. J., Lukasik, M. A., Belau, L., & Briggs, A. L. (2011). Getting specific about demographic diversity variable and team performance relationships: A meta-analysis. *Journal of Management*, 37(3), 709–743. doi:10.1177/0149206310365001.

Cannella, A. A., Jr. Park, J. H., & Lee, H. U. (2008). Top management team functional background diversity and firm performance: Examining the roles of team member colocation and environmental uncertainty. *Academy of Management Journal*, 51, 768–784. doi:10.5465/AMJ.2008.33665310.

Choi, J. N., Sung, S. Y., & Zhang, Z. T. (2017). Workforce diversity in manufacturing companies and organizational performance: The role of status-relatedness and internal processes. *International Journal of Human Resource Management*, 28(19), 2738–2761. doi:10.1080/09585192.2016.1138315.

Dwertmann, D. J. G., Nishii, L. H., & Van Knippenberg, D. (2016). Disentangling the fairness & discrimination and synergy perspectives on diversity climate: Moving the field forward. *Journal of Management*, 42, 1136–1168. doi:10.1177/0149206316630380.

Ethio telecom 2012 EFY (2019/20) Annual Business Performance Summary Report https://www.ethiotelecom.et/ethio-telecom-2012-efy-2019-20-annual-business performance-summary-report/ Accessed on [March 5,2021]

Ethiopian central statistical agency report, (2018) the specific report can be accessed at https://ethiopia.opendataforafrica.org/data#source=WB&topic=Income+Inequality. Accessed on [March 2,2021]

Galia, F., Zenou, E., & Ingham, M. (2015). Board composition and environmental innovation: Does gender diversity matter? *International Journal of Entrepreneurship and Small Business*, 24 (1), 117–141.

Greenhalgh, T., Glenn, R., Bate, P., Macfarlane, F., & Kyriakidou, O. (2007). *Diffusion of innovations in health service organizations: A systematic literature review*. Oxford, UK: Blackwell Publishing.

Guillaume, Y. R. F., Dawson, J. F., Otaye-Ebede, L., Woods, S. A., & West, M. A. (2017). Harnessing demographic differences in organizations: What moderates the effects of workplace diversity? Journal of Organizational Behavior, 38(2), 276–303. doi: 10.1002/job.2040

Herring, C. (2009). Does diversity pay? Race, gender, and the business case for diversity. *American Sociological Review, 74(2),* 208–224.

Horwitz, S. K., & Horwitz, I. B. (2007). The effects of team diversity on team outcomes: A meta-analytic review of team demography. *Journal of Management,* 33(6), 987–1015. doi:10.1177/0149206307308587.

Hui, Ki Ming, Timothy C. Bednall, Lu Wang, and Karin Sanders. 2017. "E ects of Cultural Diversity and Emotional Regulation Strategies on Team Member Performance." *Australasian Journal of Organisational Psychology* 10 (e4): 1– 14. doi:10.1017/orp.2017.4.

Hulsheger, U. R., Anderson, N., & Salgado, J. F. (2009). Team-level predictors of innovation at work: A comprehensive meta-analysis spanning three decades of research. *Journal of Applied Psychology*, 945, 1128–1145. doi:10.1037/a0015978

Jongho Roh & Jun Koo (2019) The impacts of diversity on team innovation and the moderating effects of cooperative team culture, *International Review of Public Administration*, 24:4, 246-263, DOI: 10.1080/12294659.2019.1688124.

Joshi, A., & Roh, H. (2009). The role of context in work team diversity research: A meta-analytic review. *Academy of Management Journal*, 52(3), 599–627. doi:10.5465/ amj.2009.41331491

Julian, S. D., & Ofori-Dankwa, J. C. (2017). Context matters: Diversity's short- and long-term effects in Fortune's "Best companies to work for." *Strategic Management Journal,* 38(7), 1557–1565. doi:10.1002/smj.2576.

Li, Ci Rong, Chen Ju Lin, Yun Hsiang Tien, and Chien Ming Chen (2017). A Multilevel Model of Team Cultural Diversity and Creativity: The Role of Climate for Inclusion, *Journal of Creative Behavior, 51* (2): 163–179. doi:10.1002/jocb.93.

Lisak, Alon, Miriam Erez, Yang Sui, and Cynthia Lee (2016). The Positive Role of Global Leaders in Enhancing Multicultural Team Innovation, *Journal of International Business Studies* 47 (6): 655–673. doi:10.1057/s41267-016-0002-7

Martinez, Marian Garcia, Ferdaous Zouaghi, and Teresa Garcia Marco (2017). Diversity Is Strategy: The Effect of R&D Team Diversity on Innovative Performance. *R and D Management,* 47 (2): 311–329. doi:10.1111/radm.12244.

Mitchell, R., & Boyle, B. (2015). Professional diversity, identity salience and team innovation: The moderating role of openmindedness norms. *Journal of Organizational Behavior, 36(6), 873–894.*

Muhammad Shahid Khan , Poramet Saengon, Suppara Charoenpoom, Hathaipan Soonthornpipit and Duangkamol Chongcharoen,(2020), The impact of organizational learning culture, workforce diversity and knowledge management on innovation and organization performance: A structural equation modeling approach. *Human Systems Management,* June 2020. DOI 10.3233/HSM-200984-IOS Press

Ostergaard, C., Timmermans, B., & Kristinsson, K. (2011). Does a different view create something new? The effect of employees diversity on innovation. *Research Policy*, 40(3), 500–509.

Page, S. (2007). The difference: How the power of diversity creates better groups, firms, schools, and societies. *Princeton, NJ: Princeton University Press.*

Pesch, Robin, Ricarda B. Bouncken, and Sascha Kraus (2015). Effects of Communication Style and Age Diversity in Innovation Teams, *International Journal of Innovation and Technology Management* 12 (06): 1–20. doi:10.1142/ S0219877015500297.

Ruiz-Jiménez, Jenny María, María del Mar Fuentes-Fuentes, and Matilde Ruiz-Arroyo (2016). Knowledge Combination Capability and Innovation: The Effects of Gender Diversity on Top Management Teams in Technology-Based Firms. *Journal of Business Ethics*, 135 (3): 503–515. doi:10.1007/s10551-014-2462-7.

Sobral, Filipe, and Daan Bisseling (2012). Exploring the Black Box in Brazilian Work Groups: A Study of Diversity, Conflict and Performance. *BAR – Brazilian Administration Review* 9 (2): 127–146. doi:10.1590/S1807-76922012000200002.

Sommers, S. (2006). On racial diversity and group decision making: Identifying multiple effects of racial composition on jury deliberations. *Journal of Personality and Social Psychology, 90(4), 597–612*.

Sun, Hongyi, Pei-lee Teh, Karis Ho, and Binshan Lin (2017). Team Diversity, Learning, and Innovation: A Mediation Model, *Journal of Computer Information Systems* 57 (1): 22–30

Talke, K., Salomo, S., & Rost, K. (2010). How top management team diversity affects innovativeness and performance via the strategic choice to focus on innovation fields. *Research Policy, 39(7),* 907–918. doi: 10.1016/j.respol.2010.04.001.

Velinov, Emil, and Milan Malý (2016). Top Management Team Diversity and Company Performance: The Moderating Effect of Organization Life Cycle. *Journal of Eastern European and Central Asian Research,* 3 (2): 1–11. doi:10.15549/jeecar.v3i2.141.