

*Full Length Research Paper*

# The effect of workgroup heterogeneity on decision making: An empirical investigation

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This research effort explored the relationship of workgroup heterogeneity and effective decision making within organization. Researchers tried to examine the influence of management heterogeneity on creative and qualitative aspect in decision making process. The research team used a survey questionnaire for data collection from employees of domestic private banks of Pakistan using stratified sampling method with a response rate of 20.5%. Sample size was 308 comprising 77 workgroups having four members. SPSS 15.0 version was used for checking of relationship of variables. Linear regression analysis revealed that management heterogeneity of workgroups had noticeable influence on effective decision making. This study concluded that workgroup heterogeneity had a significant impact on decision's creativity and quality. Therefore, the enterprises should strive for an environment of inclusiveness, pluralism and diversity for effective decision making in the organizations.

**Key words:** Workgroup heterogeneity, decision making, creativity in decisions, quality in decisions, pluralism, diversity.

## INTRODUCTION

The phenomenon of heterogeneity has gotten vitality in the current business scenario. As regards the human resource planning in technological era, it is an open secret that workforce diversity is a prominent issue. Organizations and visionary management of reputed firms are focusing on the subject matter more minutely. They are trying to evaluate both sides of this complex issue. Due to globalization, workforce heterogeneity acquired a supreme level consideration within organizations.

The 21st century has brought the new dimensions to organizational settings. Now the organizations are diluting the effects of more controlled bureaucratic structures and transforming themselves to more flexible and flat structures. It is also an irony of this modern world, that globalization proved itself as double edged sword. At one spot, it is providing numerous benefits to the multinational organizations and at the other end, it

could be a challenge for organizations as in the field of competitions.

Similarly, the technology and computerization has also initiated the very dynamic environment in the business scenario which demands proper understanding of diversity issue and its implications (Arsenault, 2004). Management practitioners have both optimistic and pessimistic views about workgroup heterogeneity, especially in the context of decision making and its effectiveness within organizations.

Heterogeneity is the degree of basic human differences among a given population. Major areas of heterogeneity are age, gender, race, ethnicity, religion, social class, physical ability and sexual orientation (Certo, 1997; Clarke and Iles, 2000). Decision making is crux of the organizational functioning. Everyone in organization has to make decisions in one's capacity and position. The three well known layers of decision making in organizational structure are top level management, middle level and operational level. The difference in decision making pattern in these levels is on the basis of routine and unstructured decision making. Most structured level decisions are made by operational level; however

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unstructured decisions are made by top management (Garmston, 1999).

This significant issue has both the optimistic and pessimistic understanding and repercussions on the organizational settings. Three recognized theories related to the phenomenon are similarity/attraction, social identity and information processing (Mannix and Neale, 2005). Two traditional theories provide the pessimistic outlook about the concept; however information processing theory which is widely accepted and utilized in our modern age is supportive of positive impact of diversity on organizational functioning.

As far as the heterogeneity issue is concerned, we noticed that most of the work on this issue was on qualitative basis. Empirical research work regarding this prominent issue was deficient. Hence researchers felt the requirement of such study which addresses the issue on quantitative aspect.

The present study is an effort to investigate the relationship between workgroup heterogeneity and decision making capabilities of human resources in organizations. This study examined the gender and age heterogeneities of workgroup and their influences on creativity and quality of decisions.

## LITERATURE REVIEW

### Workgroup heterogeneity

It is an accepted fact that workforce is no doubt the most important resource for organizations. Hence the workforce related issues are the focus of researchers and management practitioners to investigate in context of organizational settings. Diversity openness and close to diversity are two behaviors. Openness is valuing the difference, whereas close to diversity, is avoiding difference. There is optimistic and pessimistic understanding behind it. The openness is directing towards the management approach of viewing its positive aspects as, varied innovative ideas, equality and inclusiveness. The close aspect however is due to fear of its negativity as conflicts and indiscipline within employees of organization (Hartel, 2004).

Workgroup heterogeneity is assessed through age and gender perspective. Age heterogeneity means the inclusion of different age personnel in workgroup. Gender heterogeneity indicates representation of male and female in considerable proportions. Heterogeneity may have numerous dimensions and relative angles. Due to this fact, many researchers investigated the perplex issue with several aspects. Important aspects were age, gender, tenure, functional, ethnic, cultural, racial, religion and disability.

For advocacy of diversity environment, three important factors are equality, legitimacy and learning. For equality, culture should be molded for objective of equality.

Legislation also paves the path for inclusiveness of all. Learning is the diversity understanding and its acceptance is gradual but on consistent basis (Andrew et al., 1998). Hence heterogeneity of workforce can instigate an environment of anticipated corporate change (Wiersema and Bantel, 1992). Wise and Tschirhart (2000) reiterated the workgroup heterogeneity as a vital issue in all type of organizational and managerial aspects. The entrepreneurs should sketch about the inclusiveness of all segments of employees. Workgroup heterogeneity could boost the productivity and performance of organization (Moore, 1999).

Blum et al. (1994) explained that the gender heterogeneity might increase the competitive position of organization. Organizations are shifting their spotlight towards increased gender diversity, multiplicity of ethnic backgrounds and more ageing workers (Kundu, 2003). Ancona and Caldwell (1998) explained the dire need of acknowledgement of youth segment of workgroup for making decisions to bring the new understanding and novel solutions to problems.

### Decision making

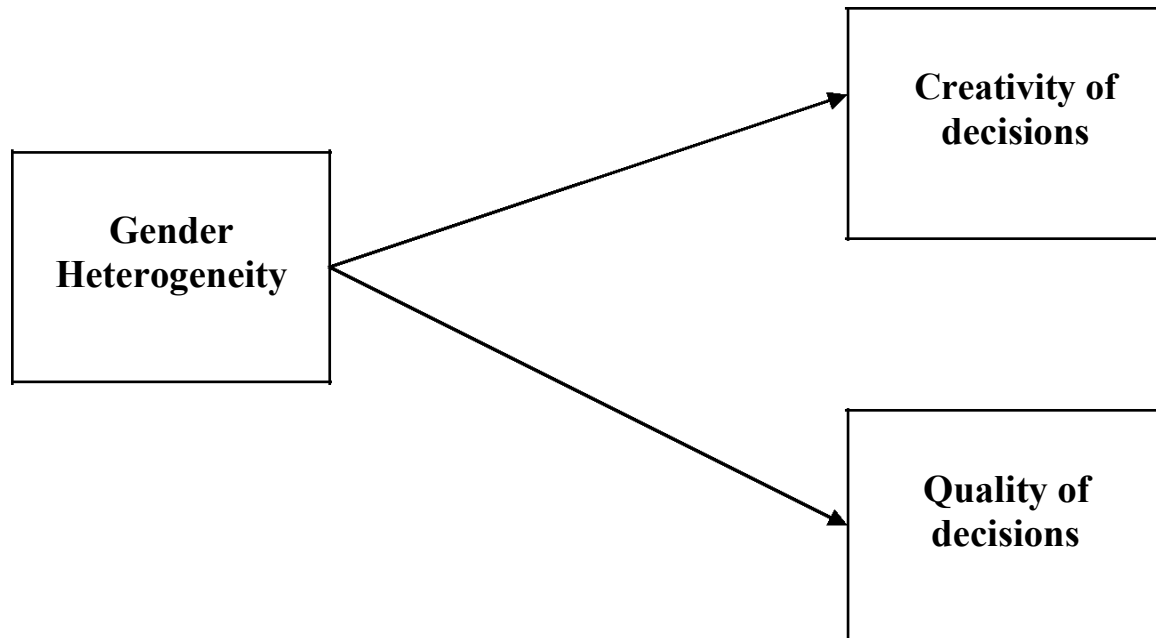
Mintzberg et al. (1976) explained the decision making as three step process comprising the identification, development and selection of alternatives. Decision making in workgroup environment is evaluated through its important aspects as creativity and quality. Creativity in decisions is the innovative ideas which might emerge in process of decision making. Quality in decisions is about, how much decision has acceptability and team work potential in the workgroup.

Watson et al. (1993) explained the evidences of more effective decision making due to heterogeneous environment in workgroups. More alternatives are result of diversity, which shows importance of this vital phenomenon. Minorities and disadvantaged segments of employees should be involved in decision making. The inclusion furnishes the grounds for participation of employees and morale of employees at its peak (Netto and Sohal, 1999).

## THEORETICAL FRAMEWORK

### Gender heterogeneity, qualitative and creative decision making

Gender heterogeneity specifies the mixed representation of male and female counterparts in workplaces. As women are more than 50% in Pakistan, so there is need for addressing the gender workplace issues, their inclusion and emancipation. Important aspects of the gender issue are equality, legal and ethical perspective (Sabeen, 2007). It is found that the more gender



**Figure 1.** Relationship of gender heterogeneity with creativity and quality of decisions.

balanced groups have higher job satisfaction in their job places than the homogenous workgroups.

Researchers also advocated the Blau's theory of heterogeneity which speaks for more diverse work environment in workgroup setting. Job satisfaction level is dropped in homogenous environment and both male and female workers liked to work with each other. Men had more serious reservations and job dissatisfaction in purely male workgroup settings (Fields and Blum, 1997). Women have more capacity of transformational leadership. Women are more intuitive, sensitive and imaginative for creative aspects, whereas, men use their masculine leadership style and structural powers as their title, position and punishment powers (Andrew et al., 1998).

In Sweden and Norway, regulations have been framed on more representations for women in upper hierarchy of organization. More gender diversity affects the firm performance; enhance the profitability, market share and image of the firm; however other determinants should be kept in mind (Nina et al., 2006). Sabeen (2007) revealed the performance of the females to be very close to male counterparts, however, environment for their working in the organizations was quite difficult and complex and they were facing tremendous barriers in their entering of top management teams (TMT) in organizations.

Barriers to women emancipation at TMT are education, status quo, entrepreneurship and the price they have to pay. Hence there is requirement of legislative measure which assists and enhances the inclusion and representation of women. Some times, it is their own decision to start new ventures, as they might have misconception of fear about increased responsibilities and no flex work life

social structure. There is need for legislative and overall efforts from community for equal opportunities for all (April et al., 2007). Hoffman and Maier (1961) considered gender heterogeneity as necessary for creative decisions. Sethi et al. (2002) reiterated innovativeness in decisions and performance of firm as dependent on the gender diversity.

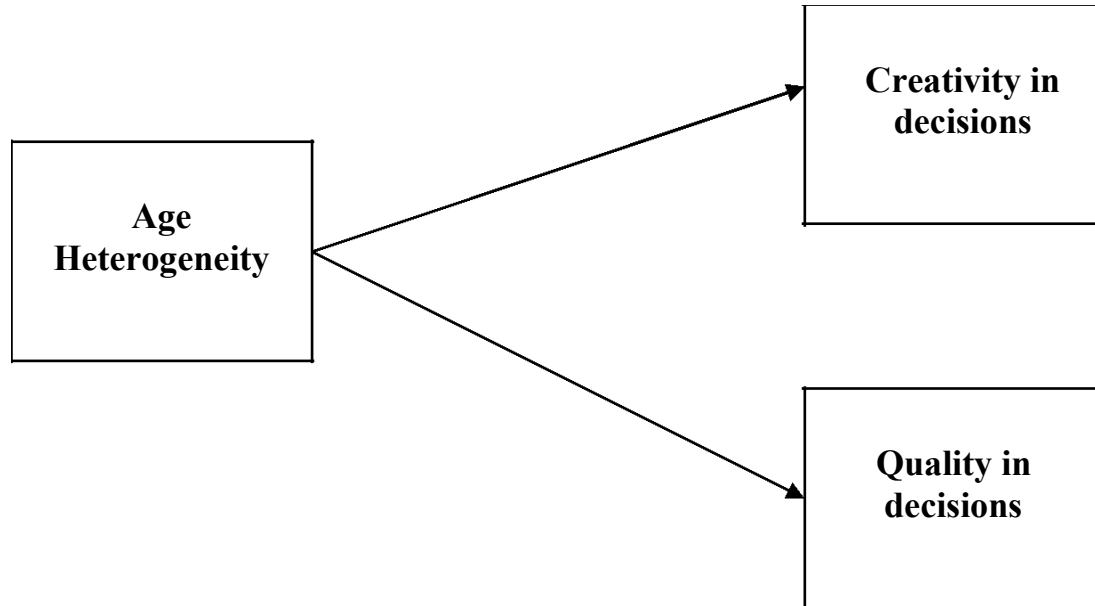
Figure 1 shows the graphical representation of the relationship of gender heterogeneity and qualitative/creative aspect of decisions.

### **Age heterogeneity, qualitative and creative decision making**

Age is an important factor in the human capital discussion within organizations. It is perceived that only disadvantaged segment is the younger workforce, however the older workers also have significant challenges in organizations. Japan is a country where the participation rates of older employees are the highest with 31%, however in U.S.A it is 17% and in France it is 5%. Myths about the old age employees are that they are less creative, slow in change adaptation and less productive (Taqi, 2002).

However, the importance of intuition of older employees cannot be denied, as they are given this power more on basis of their vast experience. Mixture of youth and older employees might be a source of new ideas. There should be a balance of workforce regarding different age group inclusion.

Visionary leaders use the power of each age layer



**Figure 2.** Relationship of age heterogeneity with creativity and quality of decisions.

within organization and hence varied alternatives for decisions could be extracted through such heterogeneous workforce (Glass, 2007). Woodman et al. (1993) explained creativity as novel ideas which are constructive and valuable for application and implementation. These ideas are very crucial in process of effective decision making. Leonard and Sensiper (1998) concluded that age heterogeneous environment within groups enhance the creativity in ideas and fresh solutions are adopted for anticipated problems. Wanous and Youtz, (1986) explained that quality in decision making is achieved through teamwork and consensus within workgroup. Quality problem solving is the result of heterogeneous environment within organizations (Shaw and Ashton, 1976).

Stereotype of older employees are that they are resistant to change, lack of energy, and for youth, they are alleged on experience dimension and emotional decision making. However, management role is to minimize the negative impression from two generational segments and explore the ways through which best can be acquired from each of the segment (Kidwell, 2003). Organizations should introduce such training where the different age groups are a complementary force for each other (Arsenault, 2004). Generational differences could initiate the conflicts, however, these can be resolved through improved human resource polices, effective communication, participative decision making and constant training schedule within organization (Glass, 2007) . Hitt and Tyler (1991) reported that age heterogeneity is a critical factor in creative alternative choice from available pool of various options in organizational decision making environment. Kilduff et al. (2000) elucidated that age heterogeneity have positive relationship with

performance.

Figure 2 shows the graphical representation of age heterogeneity and creative/qualitative decision making.

## HYPOTHESES

After reviewing the pertinent literature and on the basis of theoretical framework, the following hypotheses were developed:

H1: Gender heterogeneity has a positive influence on creative/innovative decision -making within workgroups.

H2: Gender heterogeneity has a positive influence on quality of decisions in decision making process within workgroups.

H3: Age heterogeneity has a positive influence on creative/innovative decision -making within workgroups

H4: Age heterogeneity has a positive influence on quality of decisions in decision making process within workgroups.

## METHODOLOGY

### Instrument and measures

Researchers utilized a survey questionnaire which constitute of scale items extracted through credible past studies. For more refinement of tool and its easy understanding in Pakistani environment, focus group approach is adopted. Five related personnel are interviewed and their expertise is used for improvement of the scale. Research team measured the creative/innovative decision making construct using a 17 items scale. 5 items measured the intuitive capacity, 5 items were for spontaneity and 7 items for group innovative/creative behavior. The scale items were taken

**Table 1.** Demographic profile of respondents.

S/No	Indicators	Category	Frequency	Percentage
1	Gender	Male	203	65.9
		Female	105	34.1
2	Age	25 or below	54	17.5
		26 - 35	161	52.3
		36 - 45	42	13.6
		46 or above	51	16.6
3	Job experience	1 - 5	127	41.2
		6 - 10	88	28.6
		11 - 15	52	16.9
		16 or above	41	13.3
4	Functional area	Administration	89	28.9
		Customer service	87	28.2
		Credit	62	20.1
		Other	70	22.7

Source: Field data.

from renowned research practitioners (Scott and Bruce, 1995; West and Anderson, 1996; Anderson and West, 1998).

Quality in decisions is measured through an 11 items scale. 6 items measured agreement seeking and 5 items estimated the teamwork. The instrument items are adopted from well-known researchers (Knight et al., 1999; Kohli and Jaworski, 1990). Gender heterogeneity is calculated by Blau's heterogeneity index (1977) and is represented as:

$$D = 1 - \sum p_i^2$$

where "D" represents the heterogeneity and "p" is the proportion of the group in the ith category.

For gender heterogeneity, the two categories were male and female. The gender heterogeneity varies from the value 0 to 0.5 where 0 is for minimum and 0.5 is for maximum. Age heterogeneity is measured through coefficient of variation (C.V) using the formula:  $C.V = (S.D/Mean \times 100) \%$ . Many research practitioners calculated the age heterogeneity in workgroups by the same methodology (Allison, 1978; Wiersema and Bantel, 1992; Knight et al., 1999).

### Sampling design

Researchers have taken the domestic private banking sector which comprises of 25 scheduled banks (State Bank of Pakistan, 2008), as population of study. Stratified sampling technique is applied for the present study. Seven banks including 2 privatized and 5 private banks selected for acquisition of data. The research team distributed 1500 questionnaires to get response from employees of banks. 308 usable responses were retrieved from the respondents. The response rate was 20.5%.

### Procedure

Relationship of heterogeneity with decision making is tested through regression analysis. The descriptive statistics, reliability and

hypotheses are checked through a reliable statistical package SPSS 15.0 version.

## DATA ANALYSIS AND RESULTS

### Demographic information of respondents

Age of respondents ranges between 20 and 57 years with average age of 33.48. The male respondents are 65.9% and the female respondents are 34.1%. Table 1 shows the comprehensive representation of demographic profile of the respondents.

### Reliability of scale

Cronbach's alpha is worked out for the reliability of scale. The values ranged from 0.64 to 0.89 for the items of entire scale. Nunnally (1978) articulated that 0.5 is the minimum acceptable level for reliability, however, the higher the value, the higher will be the reliability of scale. The reliability of total scale items was observed to be 0.89. Table 2 represents the values of Cronbach's alpha for all scale items.

### Regression analysis

Linear regression method is used in checking the relationship of variables and testing the hypotheses framed for the study. Linearity of variables and normal distribution of data which are assumption for regression

**Table 2.** Cronbach alpha of scale items.

Constructs/variables	Number of items	Cronbach alpha
Creative decision making	17	0.84
Intuitive capacity	5	0.64
Spontaneity	5	0.67
Group innovative behavior	7	0.74
Quality decision making	11	0.81
Agreement seeking	6	0.81
Teamwork	5	0.69

Source: Field data.

**Table 3.** Analysis of variance for the GHET and CIDM.

Model <sup>b</sup>	Sum of squares	df	Mean square	F	Sig.
Regression	4.846	1	4.846	56.348	0.000a
Residual	6.449	75	0.086		
Total	11.295	76			

a. Predictors (constant), GHET; b. dependent variable: CIDM. Source: Field data.

**Table 4.** Coefficients of the GHET- CIDM regression model.

Model <sup>a</sup>	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	SE			
Constant	3.822	0.051		75.429	0.000
GHET	1.055	0.140	0.655	7.507	0.000

a. Predictors (constant), GHET; b. dependent variable, CIDM. Source: Field data.

analysis are also checked for the data. Table 3 represents analysis of variance for gender heterogeneity and creative and innovative decision making.

The F statistic (56.348) indicates that the independent variable (GHET) moderately explains variation in the dependent variable (CIDM). There is a highly significant linear relationship between gender heterogeneity and creative/innovative decision making.

Table 4 represents the coefficients of regression model for gender heterogeneity and creative/innovative decision making. The t-statistic (7.507) for this regression model is highly significant, which means that gender heterogeneity (GHET) has a statistically significant influence on creative/innovative decision making (CIDM). Also, correlation coefficient equals 0.655, which signifies strong relationship of variables. Hypothesis H1 is therefore accepted. The estimated regression model is  $CIDM = 3.822 + 1.055 (GHET)$ .

### Regression results for other relationships

The F statistic (38.332) specifies moderate variation,

however, highly significant linear relationship between gender heterogeneity (GHET) and quality decision making (QDM). The t-statistic (6.191) for this regression model is highly significant. Hence H2 is accepted.  $QDM = 3.857 + 0.956 (GHET)$ .

The F statistic (11.628) specifies moderate variation, however, highly significant linear relationship between age heterogeneity (AHET) and CIDM. The t-statistic (3.410) for this regression model is highly significant. Hence H3 is accepted. The estimated regression model is:  $CIDM = 3.786 + 1.648 (AHET)$ .

The F statistic (6.891) specifies moderate variation, however highly significant linear relationship between age heterogeneity (AHET) and quality decision making (QDM). The t-statistic (2.625) for this regression model is highly significant. Hence H4 is accepted. The estimated regression model is  $QDM = 3.855 + 1.332 (AHET)$ .

### Conclusions and Implications

Gender heterogeneity has a statistically significant influence on CIDM as Hypothesis H1 is accepted. The

finding is consistent with past research (Friedman and Forster, 2001). This result indicates that gender heterogeneity in the workgroups of organizations can level the grounds for innovative thinking and creative change within organization can be visualized. Hence the management should try to emanate an environment for the more heterogeneous and inclusive environment in their respective organizations.

Similarly, it is also observed that GHET has a statistically significant influence on quality decision making (Hypothesis H2). The results are consistent with previous finding (Mannix and Neale, 2005). The same result also advocates for gender heterogeneity as it leads to quality decision making. Age heterogeneity has a significant impact on creative/innovative decision making. Hypothesis H3 is accepted. The finding is consistent with past research effort (Hambrick and Mason, 1984; Bantel and Jackson, 1989). Hence, the managers of visionary organizations have to understand the dynamics of challenging business scenario and work for mix of workforce in their organizations with respect to age factor. Therefore, different age groups should be given chance to work with each other. AHET has a statistically significant influence on quality decision making (Hypothesis H4). The results are in line with the effort of (Bantel and Jackson, 1989). Hence for quality of decisions, age diversity is prerequisite.

## Suggestions and Future Research

Most of the organizations are developing their human resources within organizations. Organizations got the revelation that on financial basis, they can compromise the resources, but not on human basis, as the competent and capable human resource can bring solutions to very perpetuating situations and can enhance the financial position. Hence organizations should now think on practical side. They should create an environment of merit, affirmative action, inclusiveness and pluralism. They should capitalize on diversity and work for the heterogeneous workforce. It is suggested that other dimensions of work-force heterogeneity be also investigated. Their impact on effective decision making, performance and profitability should be checked more comprehensively. Also, the in depth analysis of cognitive diversity and its impact on other variables like performance, productivity and competitiveness should also be investigated.

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