

**WOMEN PARTICIPATION AT TOP AND MIDDLE MANAGEMENT
LEVELS IN PUBLIC UNIVERSITIES/DEGREE AWARDING
INSTITUTIONS (DAIs) OF PAKISTAN:
A CASE STUDY OF UNIVERSITIES IN SINDH**

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ABSTRACT

Since past decades women participated in policy formulation and decision making positions in government and non-government sectors in Pakistan. However, women's access to work in key management positions in both public and private sectors has been infrequent and inequitable. The same trend is observed in various public and private sector of Sindh province of Pakistan. Universities can play important role to create opportunities for education and equitable employment. Whereas, higher education sector is itself facing unequal women representation at top and middle management levels in Pakistan. Therefore, the objective of this research study is to find out male-female participation in public higher education sector in the shape of their involvement at top and middle management levels. This research also addressed and assessed all major issues concerned to underutilization of educated women in Universities/Degree Awarding Institutions (DAIs) in Sindh, Pakistan. The study also analyzes women's research capacities and reviews their self-motivational force on managing universities.

Keywords: Women, Higher Education Institutions, Teaching, Management, Public Sector

INTRODUCTION

Women comprise 50 percent of the total population in Pakistan, efficiently participated in public and private sectors of economy (Economic Survey of Pakistan, 2014). However, women representation remains unequally to men in many fields including higher education management. It is argued that the decision-making positions demand various skills and abilities (this includes education, age maturity, experience, as well as, strong self-motivation to reach at senior leadership and key management positions). However, women short of these qualities are under-represented at top and middle management levels in public universities in Pakistan.

For that reason, this research paper focused to find out major factors (i.e. through empirical analysis) that supposed to be responsible for under-utilization of educated women in higher education management at university level in Sindh province of Pakistan. The paper has three different parts. Part

one based on introduction and conceptualized literature review. Part two briefly discusses research methodology of the study and last part consists on finding, conclusions and recommendations.

CONCEPTUALIZATION

Management involves in utilization of human and other resources (such as machinery) in a manner that best achieves the firm's plans and objectives (Varma & Aggarwal, 2009; Shah, 1999 & Anwar, 2005). At top/high management level managers such as president, and vice-president makes decisions regarding the firm's long-run objectives (Anwar, 2005). At middle management level, managers such as head of the departments, directors etc. often responsible for the firm's short-term decisions (Shah, 1999). Management and administration are at times used interchangeably. However, administrators are managers who ensure that action and policies are put into practice whereas, top managers formulate policies (Varma & Aggarwal, 2009; Shah, 1999 & Anwar, 2005).

History shows that the women had significant contribution in the field of politics, state governance and truly involved as business leader into various sectors of economy (Syeda, *et.al.*, 2006). However, women unequally participated at leadership and decision-making positions in all developed and under developed countries of the world and in different sectors of economy including higher education sector (Wallace & Smith, 2011). Universities/Degree Awarding Institutions (DAIs) plays an important role to create opportunities for equitable employment and to remove the disparities in power and status (Isani & Virk, 2003). Highly educated women can play productive role to ensure sustainability of economic growth rate but, educated female are still long a way away from equal participation with men in many fields such as at management cadre in Higher Education Institutions (European Commission, 2009). United Nations Educational, Scientific and Cultural Organization (2010) reported that in spite, of women advancement in many areas women still underrepresented in area of management in Universities/Degree Awarding Institutions (DAIs) and gender disparity exist at all levels of management infect, the ratio of gender disparity is increase as move up from lower to top management level. European Commission (2008) reported that in European countries at tertiary level female enrolment proportions are more than male but at management cadre in higher education institutions women still not equal to men for example in Spain only 4 percent of university Vice-Chancellors are women. According to Singh (2002) in higher education management male culture prevails not only in Pakistan also across the world and this trend is more prominent in male dominating professional Universities/Degree Awarding Institutions (DAIs) like engineering.

Globally since 1970 positive trends in tertiary education in relation to female education has been observed. According to The Global Gender Report (2011) today at tertiary level female students are much more or close to men. But female proportion decrease from lower to higher degree level (i.e. from Bachelor to Doctorate) and female enrolment remain strikingly low in science and technology (United Nations Educational, Scientific and Cultural Organization, 2012). According to Tower, *et.al.*, (2007) in universities active participation of faculty members in research activities correlated with their professional career advancement but female faculty cited with lack of a strong research record therefore, stuck at junior teaching positions and poorly represented at key management positions (such as Dean of Faculties, Vice-Chancellor, etc.) in universities/Degree Awarding Institutions (DAIs). In this connection it is stated that women are more focus on job satisfaction rather than their promotions and their large involvement at management level. It is argued that decision-making positions demand various skills and abilities (this includes education, age maturity, experience, as well as, strong self-motivation to reach at senior leadership and key management positions). However, women short of these qualities therefore, underrepresented at top and middle management levels in public universities in Pakistan (Farida, 2010). This indicates that there are several obstacles prevent women to break the glass ceiling and to enter at higher administrative positions not only in Pakistan also in other developed and underdeveloped countries of the world.

To sum up, the growing female enrolment in higher education has less of an impact in the labor market or yet not translates into proportional representation at leadership and decision-making positions in Universities/Degree Awarding Institutions (DAIs) in Pakistan. Therefore, in this study researcher focused to investigate women participation ratio at management cadre in universities in Sindh and to find out major obstacles for low women participation at top and middle management levels in sample universities in Sindh.

METHODOLOGY

This survey research is based on both qualitative and quantitative data. In this study through purposive sampling technique, one general and two leading professional public universities in Sindh (i.e. 22 percent of population) were purposely selected, as representative sample of population for the data collection. Data was collected on parameters such as education, self-motivation, experience & ratio of women representation at management cadre. Primary data was collected through interviews in formal questionnaire and secondary was data collected through secondary sources. MS Excel and Statistical Package for Social Sciences (SPSS) were used to analyze the data

and to present the results. To identify the factors that determine the women's management participation at university level regression technique was applied.

Regression Technique: Regression is a statistical technique used for prediction (James & Mark, 2010). In this research for predicting the trends related to women participation at management cadre in Universities/Degree Awarding Institutions (DAIs), logistic regression model was used.

Logistic Regression: Logistic regression is highly effective for estimating probability (O'Connell, 2005). Logistic regression analysis allows one to predict probability of a binary dependent variable (Binary or dichotomous variables have only two categories or levels and take only two possible values, 0 and 1) from a set of independent variables that may be quantitative (Quantitative variables are those variables which cannot be measured in numbers) or qualitative (Qualitative variables are those variables which can be measured in numbers) (Christopher, 2011). Logistic regression method is a powerful technique because, it is relatively free of restrictions and it allows analyzing a mix of all types of predictors (James and Mark, 2010). In this case study researcher focused to identify the factors that correlated with women participation at top and middle management levels and make predictions.

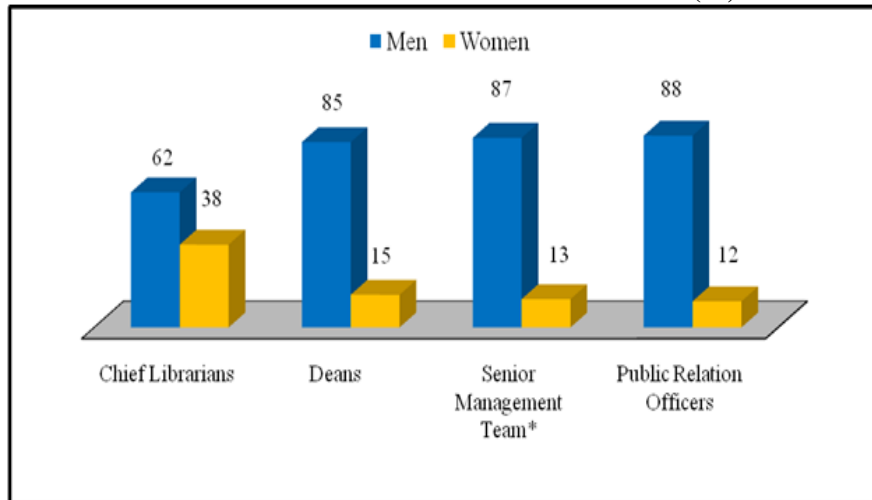
Therefore, logistic regression was applied to primary data because, selected independent variable is binary and selected independent/predictor variables (i.e. qualification, experience and self-motivation) are mixed (i.e. both qualitative and quantitative). The Minus 2 Log Likelihood for a model indicates the extent to which the model fails to perfectly predict the values of the dependent variable (Jeffrey, 2012). In this model value of Minus 2 Log Likelihood is smaller indicates goodness of the model. In logistic regression model interpretation of R^2 and b_0 is same as in simple regression model (i.e. discussed above). However, the standard way of interpreting beta coefficients (i.e. b) in logistic regression is using the conversion of it to an odds ratio using the corresponding $\exp(b)$ value (Pampel, 2000). $\exp(b)$ is the odds ratios for the predictors and Odds ratio is the probability of winning over the probability of losing (Menard, 2002). If $\exp(b)$ is greater than 1 then the odds of experiencing the characteristic of interest is greater per unit increase in the predictor variable on other side, if $\exp(b)$ is less than 1 then the odds of experiencing the characteristic of interest is lower per unit increase in the predictor variable (Pampel, 2000). Therefore, in this study for logistic regression model $\exp(b)$ used to predict the probability for women to be involved in management activities on the bases of selected independent variables. In logistic regression higher R^2 value (i.e. near to 1) indicating greater model fit but Cox and Snell R^2 cannot reach the maximum value of 1 even for a perfect model therefore, Nagelkerke's used to measure the full 0-1

range (Pampel, 2000). According to James and Mark (2010) standard errors more than 2.0 indicate numerical problem (expect constant). In presented model values of standard errors for all independent variables (i.e. qualification, experience and numbers of conferences organized by women) are not excessively large therefore there is no indication of numerical problem in this logistic regression model. The Wald Statistics, just the square of the ratio of the coefficient to its standard error and used to assess the significance of coefficients in the model (Christopher, 2011). In this study Wald Statistic is used to assess the significance of coefficients in the model (Christopher, 2011).

STUDY RESULTS

Goals of Universities/Degree Awarding Institutions (DAIs) related with human resource development and demands well-qualified and skilled managers (Shah, 1999). This study analyzes sample women's representation at top and middle management levels and examines various decision-making skills and abilities of sample respondents. Figure-1 reveals that in universities in Pakistan up to some extent women made up their contribution at senior management positions. But there are many qualitative and quantitative hurdles (This includes female faculty contribution in research, cultural norms, work-life balance, females' preferred field of study, their reserved personalities etc.) supposed to be responsible for limited women participation at management cadre in higher education institutions in Pakistan.

FIGURE-1
GENDER REPRESENTATION AT SENIOR MANAGEMENT POSITIONS
IN 22 UNIVERSITIES OF PAKISTAN N= 107 (%)



Source: (Singh, 2002:7-17)

*Registrars/Secretary

TABLE-1
TRENDS OF WOMEN PARTICIPATION AT MANAGEMENT LEVEL
WITHIN SAMPLE UNIVERSITIES IN SINDH N=154 (%)

Designation	BPS	Liaquat University of Medical & Health Sciences		Mehran University of Engineering & Technology		University of Sindh, Jamshoro		All Sample Universities	
		Total	Female	Total	Female	Total	Female	Total	Female
Vice-Chancellor	22	1		1		1		3	
Pro-Vice-Chancellor	21			1		1	1 ₍₁₀₀₎	2	1 ₍₅₀₎
Registrar	20	1		1		1		3	
Controller of Examinations	20	1		1		1		3	
Director of Research/Post Graduate Studies	21	1		1		1		3	
Deans	21	5	2 ₍₄₀₎	4		6		15	2 ₍₁₃₎
Director of Finance	20	1		1		1		3	
Director Of Planning & Development	20	1		1		1		3	
Director Admissions	19	1	1 ₍₁₀₀₎	1		1		3	1 ₍₃₃₎
Director of Sports*	18/19	1		1		2	1 ₍₅₀₎	4	1 ₍₂₅₎
Directors/Chairperson of Departments	18 to 21	36	6 ₍₁₇₎	23		44	12 ₍₂₇₎	103	18 _(17.5)
Others**	19 to 21	3		3	1 ₍₃₃₎	3		9	1 ₍₁₁₎
Grand Total		52	9₍₁₇₎	39	1₍₂₎	63	14₍₂₂₎	154	24₍₁₆₎

Source: Registrar Office Liaquat University of Medical & Health Sciences (LUMHS), Mehran University of Engineering & Technology (MUTE) & University of Sindh, Jamshoro (UoS), 2012-13

> () Figures in parentheses are percent.

*Director of Sports for Boys are in BPS-19, while for Girls are in BPS-18.

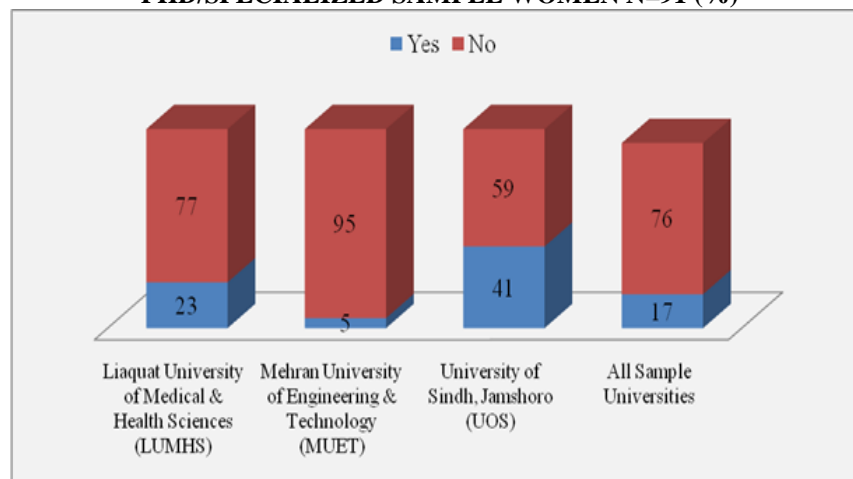
**Others category refer to Deputy Director/Advisor/Chief Planning & Development, Librarian, Additional Registrar, Director of I.T. & Additional Controller.

Table-1 shows limited women participation ratio and absence of women in many decision-making positions. Data indicative that women are still a long way away from participating on the same footing as men at management cadre in sample universities in Sindh. Moreover, in University of Sindh, Jamshoro female as Pro-Vice Chancellor is encouraging sign but in totality situation is still far from desired satisfaction. In addition, the scenario of women's undermine status at decision making and leadership positions in professional and non-professional higher education institutions are not very different and showing unequal ratio of gender.

The study parameter educational qualification used to measure the level of education degree of sample women. According to Higher Education Commission of Pakistan's rules and regulations, degree advancement is one of the require criteria for faculty members as to promote at senior teaching positions and to work at key decision-making levels (www.hec.gov.pk, 2014). In Liaquat University of Medical and Health Sciences (LUMHS), University of Sindh, Jamshoro (UoS) and in Mehran University of Engineering & Technology (MUET) sample women upgraded their qualification at PhD level but in some departments of Liaquat University of Medical & Health Sciences (LUMHS) (such as in Peds, Surgery, Obstetrics-

Gynecology) rather than PhD doctors have to upgraded their qualification with specialization course (such as Fellowship of College of Physician and Surgeon (FCPS) and Fellowship of Royal College of Surgeon (FRCS) in order to reach at key decision making position. Figure 2 indicates that after appointing as lecturer, only 17 percent sample women upgraded their qualification at PhD/Specialization level. In Mehran University of Engineering & Technology (MUET) majority of sample respondent were young their qualification up gradation is in process therefore, only 5 percent sample women reported with having PhD degree. In University of Sindh, Jamshoro 41 percent sample women upgraded their qualification at PhD level that is encouraging.

FIGURE-2
PHD/SPECIALIZED SAMPLE WOMEN N=91 (%)



Source: Survey Data, 2014

Experience is defined as “*active participation in events or activities, leading to the accumulation of knowledge or skill*” (Oxford Advanced Learner’s dictionary, 2005). Parameter experience in this study explains the numbers of years sample women worked in their related fields. According to Higher Education Commission of Pakistan eligibility criteria, experience is also required in order to promote faculty members at senior teaching and management positions (www.hec.gov.pk, 2014). Table 2 highlights that in sample universities in Sindh 61 percent sample women reported with having less than 15 years (i.e. sum of 42, 11 & 8) of experience in their related fields (i.e. at academic and management positions). Due to immaturity by age approximately 86 percent (i.e. sum of 59 & 27) sample women reported from Mehran University of Engineering & Technology were less experienced (i.e.

up to 10 years) at their academic and management status. Therefore, it is stated that sample women reported from Liaquat University of Medical & Health Sciences and from University of Sindh, Jamshoro are more experienced at their academic and management status.

TABLE-2
YEARS OF EXPERIENCE IN PRESENT JOB N=91 (%)

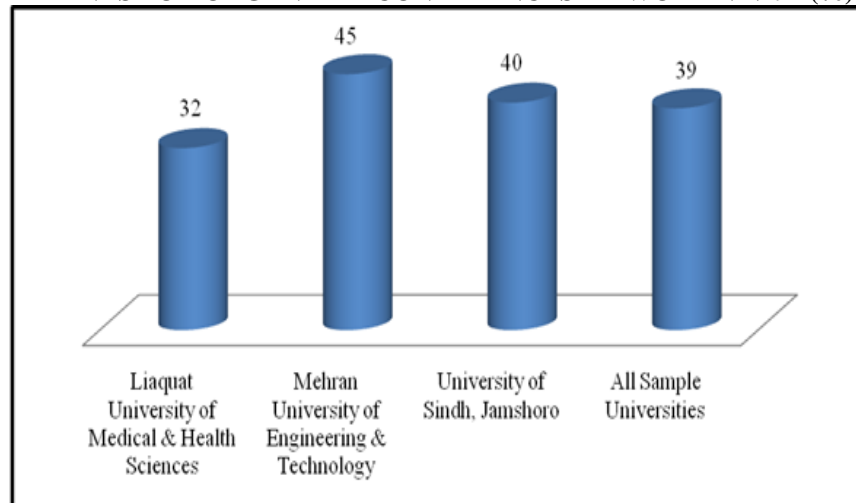
Years of Experience	Liaquat University of Medical & Health Sciences	Mehran University of Engineering & Technology	University of Sindh, Jamshoro	All
Under 1-5	38	59	32	42
6-10	6	27	4	11
11-15	6	9	14	8
16-20	28	5	23	21
Above 20	22	-	27	18
All	100	100	100	100

Source: Survey Data, 2014

At university level conferences, workshops and seminars provide opportunities to develop professional skills and abilities to share knowledge and experience in intellectual research environment. *Organizing refers "to plan activities in efficient way"* (Oxford Advanced Learner's dictionary, 2005:1071). Successful conferences organizing in Universities/Degree Awarding Institutions (DAIs) required self-motivation to devote time and energy simultaneously, required various skills this includes planning, analysing, communication, collaborates with colleagues on team goals, decision-making and problem-solving skills including the ability to think quickly and react to last minute changes, and ability to prioritize and manage multiple tasks etc. (Shah, 1999). In Universities/Degree Awarding Institutions (DAIs) faculty involvement in organizing events for their institution shows their self-motivation to involve in management activities and indicate their potential to manage successfully and to achieve multitasks (Singh, 2002). Therefore, to measure self-motivation of sample women to be participating in management activities; numbers of conferences organized by sample women selected as parameter. Figure 3 demonstrates that particular proportion of sample women has self-motivation to devote their efforts and energy for management activities for their universities. On other side 61 percent sample women were reported without any conference organized by them throughout their professional career. Comparison of sample universities shows that sample women reported from Mehran University of Engineering

& Technology and from University of Sindh, Jamshoro have more motivation to utilize their management skills and to achieve multitasks.

FIGURE- 3
TRENDS FOR ORGANIZED CONFERENCES BY WOMEN N=91 (%)



Source: Survey Data, 2014

Applying Logistic Regression for Predicting Women Administrative Participation

Logistic regression is a technique for making predictions (Jeffrey, 2012). In this study Logistic regression is applied to predict the women administrative participation in Universities / Degree Awarding Institutions (DAIs). In this research logistic regression also used to analyse the impact of degree advancement, experience and self-motivation on women representation at top and middle management levels in sample universities. Therefore, sample women's administrative status was selected as dependent variable (i.e. Y) and sample women according to their administrative status divide into two categories one is having administrative status along with teaching and second category is not having administrative status along with teaching. Dependent variable is binary therefore, code "1" allocated for having administrative status along with teaching and "0" allocated for otherwise. To find out impact of degree advancement on women representation at management cadre in Universities/Degree Awarding Institutions (DAIs) educational qualification selected as predictor variable (i.e. X_1) and sample women were categorized into two categories as PhD/Specialization and Non PhD/Specialization. Independent variable educational qualification is categorical variable (Any variable that is not

quantitative, having two or more groups is categorical variable) therefore, code “1” allocated for PhD/Specialization and “0” for Non-PhD/Specialization. To find out impact of experience on women representation at management cadre in Universities/Degree Awarding Institutions (DAIs) numbers of years in job selected as predictor variable (i.e. X_2). Experience is independent variable that is quantitative and measured in numbers of years. In order to analyse the impact of self-motivation of sample women as to devote their time and efforts for management activities, numbers of conferences organized by sample women selected as independent variable (i.e. X_3). Numbers of conferences organized by sample women (i.e. X_3) is quantitative variable and measured in number of years.

Logistic Regression Equation:

$$Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3$$

Where:

Y =	Binary Dependent Variable (i.e. Administrative Status of Sample Women)
1 =	for having administrative status along with teaching
0 =	Otherwise
b_0 =	Intercept/Constant
b_1 b_2 b_3 =	Coefficient
X_1 =	Educational Qualification
1 =	PhD/Specialization
0 =	Non-PhD/Specialization
X_2 =	Experience
X_3 =	Numbers of Conferences Organized
Y =	-5.473 + 1.749 (Qualification) + 0.142 (Experience) + 0.183 (Self-Motivation)

TABLE-3
MODEL SUMMARY

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
38.693	.352	.610

Source: Survey Data, 2014

According to table 3 smaller value for Minus 2 Log Likelihood (i.e. 38.693) in this model confirmed goodness of the model. Cox and Snell R^2 cannot reach the maximum value therefore; Nagelkerke's R^2 used in this log it model having the value 0.61. The value of Nagelkerke's R^2 indicates that 61 percent of the variation in the administrative status of sample women (i.e. dependent variable) is explained by this model.

TABLE-4
VARIABLES IN THE EQUATION

	b	S.E.	Wald	Sig.	Exp(b)
Qualification (i.e. b_1)	1.749	.857	4.167	.041*	5.748
Experience (i.e. b_2)	.142	.045	9.816	.002**	1.153
Numbers of Conferences Organized (i.e. b_3)	.183	.083	4.818	.028*	1.201
Constant (i.e. b_0)	-5.473	1.205	20.612	.000	.004

Source: Survey Data, 2014

Administrative Status: 1= having administrative responsibility along with teaching”

0 = Otherwise

*=Significant at 5% level

**=Significant at 1% level

Table 4 presents the empirical results for variables in the equation. Constant is the expected value of dependent variable when all of the predictor variables equal zero (Verbeek, 2004). Negative value of constant (i.e. -5.473) indicates a reduced probability of having administrative responsibilities along with teaching if all of the independent variables (i.e. qualification, experience and numbers of conferences organized by sample females) are zero. In presented model values of standard errors for all independent variables (i.e. qualification, experience and numbers of conferences organized) are not excessively large, so there is no evidence of a numeric problem with this analysis. The values of Wald statistics for experience (i.e. 9.816) highlights that compare to qualification and numbers of organized conferences, experience has more significant impact on having administrative status by sample women. Coefficient b_1 , b_2 and b_3 measures each independent however, interpret in values of Exp (b). In this analysis value of Exp (b) for all predictors’ is greater than 1 this indicates that the odds of having administrative responsibilities along with teaching is greater per unit increase in the predictor variable (i.e. qualification, experience and numbers of conferences organized).

CONCLUSIONS & RECOMMENDATIONS

Women comprise 48 percent of the total population in Pakistan. They seldom have equitable access to education (consequently, 55 percent female population remain illiterate and only 3 percent of 18 to 23 years old females have access at higher education level) and employment in both public and private sectors therefore, they lack the power of decision making. This research is an attempt to assemble causes related to women's poor participation in Public Higher Education Institutions (PHEIs) in the shape of their involvement at middle and top management levels. Study results highlights that sample women representation at management cadre is very low (i.e. only 16 percent), particularly at Top and non-teaching management positions. Empirical analysis confirmed that qualifications, experience and self-motivation to perform multiple responsibilities have significant impact on women representation at management cadre but sample women were short of these qualities therefore, underrepresented at middle and top management levels in universities in Sindh.

It is suggested policy should be made more effective and its implementation be ensured for improving the ratio of female enrolment in both traditional courses and non-traditional courses. There is need to develop a vision of concentration on tapping female in the pool for equal gender representation in universities in Pakistan as well as in Sindh. The priority areas should be the improvement in the standard of female without gender gap at all management positions in Universities/Degree Awarding Institutions (DAIs) in Pakistan. There should be step up in policy and its implementation is essential, to ensure females equal participation at all teaching and non-teaching management positions (i.e. bottom to top management levels) in universities in Pakistan. It is recommended to provide more opportunities for training, workshops and management based short courses for women. There is need to increase the numbers of PhDs and women specialization in their respective fields by allocating scholarships predominantly for women. It is suggested to organize special lectures for developing research writing skills which help to promote female faculty up to senior academic and management levels. Personality development sessions should be held for enhancing females' management potential and their self-motivation to work at decision making positions. It is suggested to create awareness among women how to balance between professional and domestic roles, proper utilization of their time at job and become more effective in Universities/Degree Awarding Institutions (DAIs).

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