

ENGENDERING GENDER EQUALITY: BUILDING THE RESEARCH CAPACITY OF FEMALE ACADEMICS IN NIGERIAN PUBLIC UNIVERSITIES

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Abstract

Little is reported about the process involved in building the research capacity of females in Nigerian Public Universities. Hence, this study provides insight into the research capacity development challenges experienced by female academics in Nigerian Public Universities; and examined the initiatives that are crucial for building their research skills. This was done with a view to build their credentials and advance their careers to be able to influence decisions that promote gender equality in academia. Primary data were derived through the administration of questionnaire on 330 female academics from three public universities in south western Nigeria, using the random sampling technique. The retrieved data were analysed using percentages, means and standard deviation. The study found that although majority (61.5%) of the women published a paper annually, they wished they could do more. Also, some of the research capacity development challenges experienced by women included: restricted access to research and conference grants ($\bar{x} = 4.48$) heavy teaching load ($\bar{x} = 4.38$), insufficient time for research ($\bar{x} = 4.33$), family and domestic responsibilities ($\bar{x} = 4.27$), poor research environment / infrastructure ($\bar{x} = 4.22$) exclusion from networking groups ($\bar{x} = 4.13$) and socio-demographic factors ($\bar{x} = 4.08$). Some strategies found to be effective in building women's research skills included: training in new research skills ($\bar{x} = 4.55$), provision of adequate research facilities and grants ($\bar{x} = 4.55$), support for conference attendance and short foreign attachments ($\bar{x} = 4.46$), building networking and collaborative system for females with role models ($\bar{x} = 4.30$) and incentives for publishing in high impact factor Journals ($\bar{x} = 4.38$). The study concluded that developing the research capacity of females in Nigerian universities is imperative for improving the quality and quantity of women's research output and for engendering equality in academia.

Key words: *Gender equality, research capacity, female academics, Public Universities, Nigeria.*

Introduction

Although the labour force participation of women in Nigeria has increased over the past few years, their percentage in academia has not increased at the same pace. They remain under represented as faculty members with fastest growing segments of them concentrated in lower levels with fewer opportunities for advancement (Brinegar 2001; Carvalho and Santiago 2010). This has serious implications for young women who aspire to enter into the academic profession. The academic profession in Nigeria is highly masculinised such that men occupy most of the top positions (Owuamanam 2009; Fapohunda, 2011). Fewer women are professors and they constitute just 15.6% of the professorial cadre in Nigerian universities (Ogbogu, 2009). They therefore do not have accrued academic capital to occupy academic decision making positions. This trend accentuates gender inequality because women have less bargaining power and limited opportunity to influence decisions and initiatives to promote gender equality and women's rights. Lack of support for research capacity building and publication of their outcomes to advance in the profession is a major reason for the continued marginalization of women in academia (Adigun, 2009).

Substantial body of literature documents the unique challenges female academic face in developing their research capacities which account for their low publication output. Publication is a major yardstick for elevation in academia and regarded as an important capability of universities to produce knowledge. It is a sound evidence base for developing skills that drive innovations which enhance economic growth (Mehran 2009). The explanations provided for the challenges women encounter in building their capacities and research profile include: the demands of acquiring a doctorate, their social roles, institutional factors (heavy teaching load etc), difficulty in entering

supportive networks, marginalization and exclusion, inhospitable culture of academia for women, limited access to information and organizational systems required for success, reconciliation of diverse identities and trade-off between family responsibilities and career orientation (Singh 2008; Easterly and Pemberton 2008; Ogbogu 2009). In addition to these, marital status, religion, academic positions and number of hours worked are some of the factors that also explain women's lower publication rate. Consequently, female academics tend to publish more in low impact factor Journals and produce fewer proposals for research funding (Walters, Fry and Chaisson 1990). Females have therefore been characterized by a complex combination of both discrimination and exclusion.

Research capacity building is thus important for enhancing the quality of research output which ultimately impacts on the advancement of women to reach decision making positions in academia. This is imperative because assessment exercise in Nigerian Universities focus on publishing papers in highly ranked international and national Journals. Research capacity development involves investigation into the obstacles and challenges that inhibit individuals from improving their research capacity skills with observable outcomes. It is a process through which the abilities and leadership of individuals within institutions and systems are enhanced to develop research and associated networks (Masika et al 2014). Currently in Nigeria, strategies to promote research among female academics are admittedly weak and almost non-existent. Methods of research are male-centric and little is reported regarding the processes and outcomes involved in research capacity building initiatives for females (Bain and Cummings, 2000). It is important for Nigerian Universities to remove impediments to research productivity and develop programs and mechanisms to target female academics for research growth and development at all levels of their career. This would also serve as a strategy for engendering gender equality and facilitating empowerment outcomes. It should be noted that although the experiences of female faculty are well documented, little research has been conducted on how to assist female academics in Nigerian Universities overcome research capacity development challenges in order to improve their research output. This is the gap in literature which this study seeks to fill. This study therefore tries to emphasize the importance of research skills and capacity building as an important factor in enhancing the quality of research output of female academics and a means of engendering equality in academia.

Literature Review

Research plays a key role in the development and dissemination of knowledge. It acts as powerful engine for a country's economic progress as well as a sound evidence base for decision making. The benefits of research help produce wealth and public support needed for sustainable development (Brooks, 1997). Research productivity is a significant, if not the most important criterion of assessment of academic staff in the promotion process in universities. Research has however shown that the research productivity of women in academia is lower than that of men. (Xie and Schauman, 2003). The difference in productivity is often referred to as the 'productivity puzzle'. This is because many researchers have attempted to explain it and to determine the nature of the research activities of men and women in the academic milieu and in the outside world (Pron and Szatyłowicz, 2006). Rahji (2001) affirmed that female academics lag behind in their research activities resulting in low publication rates. Ogbogu (2009) confirmed in her studies that just 23 percent of females publish up to two papers annually in selected public universities in Nigeria. Academia in Europe loses a considerable amount of its female intellectuals due to the biases they face in moving up the academic career ladder as excellent researchers (EU, 2011). Further still, the way in which research itself is designed and carried out needs to be re-considered. This is because studies have shown that gender inequalities influence the outcomes of research (Vanden Brink 2011, Schiebringer and Schrandner, 2011).

This study therefore emphasizes the need of building the capacity of females in academia as a means of enhancing the quality of their research output as well as a means of bridging the gender gap. Capacity development is the process through which the abilities and skills of academics are enhanced to develop research and associated networks in order to increase the quality and quantum of their research activities (Easterly and Pemberton, 2008). Capacity development is typically approached in relation to the notions of performance, effectiveness and accountability, with less emphasis on the fact that researchers' capacities are influenced by the social construction of gender. Morley (2013) thus opined that men and women's research capacities are socially constructed through different opportunities afforded them. Archer (2008) submitted that socialization into research takes place through cumulative processes such as: societal and familial influences and institutional practices such as networking and gate keeping that exclude women.

Literature documents the unique challenges female academics face in developing their research capacities and in advancing in their research output. Marginalization, an inhospitable culture of academia for woman,

constrains by responsibilities such as family and childcare, reconciliation of diverse identities and their limited access to information and organization system required for success are some of the explanations offered (Bronstein and Farnsworth, 1998; Walker, 1998; Gibson 2006; Seifert and Umbach 2008). Furthermore, the challenging demands of academia in terms of pressure to publish, to teach more and to adopt new technologies and pedagogies impede the research capacity development of female academics. As a result of negotiating multiple roles with associated responsibilities, many female academics are constrained in positioning themselves as successful academics and limits the time spent in building their research records and skills (Sadl, 2009). This is critical because time spent on research increases productivity and sharpens research skills. Also, balance of time spent in research, teaching and administrative service explain a significant proportion of the variance found in research productivity (Owuamanan, 2009). Lack of funds to support research work is also a major challenge to women's quest to build their research capacity. In view of this, Faphounda (2011) noted that research activities require adequate funding in terms of stocking laboratories with equipment and for academic travels for conferences. He however noted that with higher education becoming more competitive, Nigerian government is unable to adequately fund universities' quest for building the research capacity of academic staff.

Furthermore, Metcalfe(2008) affirmed that the challenges of building women's research capacity are embedded in socio-cultural practices, personal/demographic variables and institutional factors. For instance, traditional gender ideologies of women's roles in revolving around domesticity hold back some of them from making the necessary compromises meant to help them build their research skills and advance in their career. Metcalfe (2008) further affirmed that marital and familial obligations are key societal value through which socio-cultural attitudes curtail females' career opportunities and development. These are experienced through trade-offs, compromise and exclusion when it came to issues that bordered on career advancement. In view of these, women's restricted mobility once married with children was cited as a key constraining socio-cultural norm that impacted on women's opportunities for research capacity development. However the gendered socio-cultural milieu is experienced differently by different women. The intersecting identities and roles within home, work, community and society experienced by women pull them in multiple directions, such that their gender and demographic characteristics interfere in research capacity construction and development. This is as a result of negotiating different roles with associated responsibilities (Archer, 2008). Kezar and Lester (2009) emphasized that negotiating multiple roles limited women's time to build and develop their research capacities and profile. Archers (2008) however, found that the challenges that older female academics faced who had raised their children and are freer to develop themselves are not related to their gender but age. Ogbogu (2009) affirmed that the research capacity and productivity of female faculty member decreased with age. Singh (2008) therefore, viewed research capacity building and productivity from a biological perspective by affirming that intellectual powers peak at an early age and deteriorate thereafter because of declining mental capacity. He noted that critical events in life such as marriage and rearing of children influence one's capacity.

Furthermore, institutional practices that reflect power-laden norm and values affect women negatively. In this regard, men's status is maintained, with greater freedom and space for them to build their research career. Networking that provides support are more available to male academics which enables them move up and advance in their research career. This is because they spend more time together socially and build networks more easily. Exclusion from such networking opportunities marginalize women and reproduce discriminatory practices that is detrimental to their research career advancement (Gibson, 2006). Walker (1998) noted that institutional practices that exclude women from influential committees through gate keeping precludes opportunities for networking and gaining recognition which enhances opportunities for capacity building. Although female academics are enhancing their research careers, there remains a gender gap in academia that is accentuated by structural barriers to women's research capacity development. Addressing these intertwined constraints requires strategies that mitigate in equalities and expand opportunities at multiple levels. Examples of such strategies noted by Walters et al (1990) include the use of networks as a useful support system for successful research performance and capacity building. They noted that opportunities for female academics to collaboratively discuss challenges, share experiences and learn from each other's strategies provide spaces to address their challenges and build the necessary networks to improve their research capacities.

Funding schemes for research work and for participation in conferences is critical to building the research capacity of female academics, thus universities such as Monash provide longer funding periods that make research careers more productive. Walters et al (1990) recommended the development and implementation of a gender strategy with the support of all divisions within the university as an effective measure for enhancing the research capacity of female academics.

Universities play an important role in the transformation of societies as they contribute to social and economic change through their research output. Gender is a major source of creativity, and innovation, acting as an

important factor in quality of research outcome. Therefore, a balanced gender representation in universities through developing the research competencies of females contributes to excellence in research and positively influences research outcomes.

Methodology

This study adopted the survey research design and utilized both primary and secondary sources in obtaining its data. The random sampling technique was used in selecting three (3) Public Universities located in the three (3) geo-political zones that make up southern Nigeria (i.e. South West, South East and South South Zones). These served as representatives of all the Public Universities in Nigeria, because the purpose of the study was not to present a precise representation of the total number of universities in Nigeria, rather the focus was on engendering gender equality through research capacity development of female academics. Furthermore, the research was conducted in the selected universities because of the convenience and possibility to access relevant data in the institutions. A five point Likert scale questionnaire was administered on 330 female academic staff from the selected universities using the stratified sampling technique. This was to ensure that the respondents ranging from full professors to Graduate Assistants were equally considered. The female academic staff sampled also comprised of Heads of Departments, Deans and Directors of Institute within the universities. The questionnaire enabled the respondents to provide insight into their research activities as well as highlight the challenges that impede women's research capacity development. It also solicited information on the strategies for improving women's research capacity skills. The retrieved data were analysed and reported using descriptive statistics in the form of percentages, means and standard deviation.

Results and discussion

Table 1: Distribution of academic women's research activities

Research activities	Frequency	Percentage (%)
Number of research grants won in the last 5 years		
None	215	65.2
1	93	28.2
2	17	5.2
3 and above	5	1.5
Total	330	100
Number of annual publications		
Nil	64	19.4
1	203	61.5
2	61	18.5
3 and above	2	0.6
Total	330	100
Rate of paper presentation at conferences		
Very often	27	8.2
Often	46	13.9
Occasionally	161	48.8
Never	96	29.1
Total	330	100

Table 1 provides an overview of the research activities of female academic staff in the selected Public Universities used for this study. Data on the table shows that a higher percentage (65.2%) of the female respondents had not won research grants in the last five years while 28.2 percent had won just one grant. Furthermore, just 5.2 percent reported winning up to two research grants with an insignificant number (1.5%) reporting winning above three awards. These figures provide evidence of women's continuous under-representation and low productivity in research activities. This result corroborates that of Dever et al (2006) who found that women accounted for only one out of six the fellowships awarded between 2003 and 2004 in Monash University. Also, in the same university, women accounted for three out of the sixteen Logan fellowships awarded between 1999 – 2001. This result also

supports the findings of Archer (2008) that reported fewer successful proposals for funds made by female academics. He attributed this to gendered social and institutional norms and values. Winning research grants is a fundamental part of being a successful researcher and a means for developing the kind of research track record necessary for early career researchers.

Measuring productivity in terms of publications, the result shows that a higher percentage (61.5%) of the respondents published just one paper annually, while 19.4% did not publish on an annual basis. Those who published up to two papers annually were just 18.5% while an insignificant number (0.0%) were able to publish up to three papers and above annually. Data on the table therefore shows that women have low publication rates. Since promotion is largely dependent on publications, it is a matter of concern that women have a low publication rate. This result confirms that of Brooks (1997) who found that female academic staff are disadvantaged in their career development due to their lower research productivity and publication rates. He found that male academic staff reported publishing significantly more articles in referred journals over a period of three years than did females. Empirical findings attributed this to the fact that females spend greater time in teaching related activities than do males. It was also due to discriminatory practices whereby female academic staff are assigned more time-consuming teaching responsibilities such as teaching large undergraduate classes and assuming student advisory and counseling functions.

In terms of paper presentation at conferences, data on the table shows that majority (48.8%) of the female academic staff occasionally attended and presented papers at conferences. Those who indicated that they very often presented papers were 8.2 percent, 13.9 percent often presented papers, while 29.1 percent never presented papers nor attended conferences. Generally, results on the table show that women occasionally attended conferences, a factor that helps them build their research capacity. Attending conferences is usually a major factor for building both local and international connections and networks and for fostering academic connections that are important for a successful research career. It is also a means of developing one's research skills. Women's poor attendance of conferences is attributed to poor funding of research work and restricted access to travel grants for staff in Nigerian Public Universities. Evidences have shown that having grants coming in helps facilitate conference attendance and build research careers for academic staff

Table 2: Women's research capacity development challenges

Challenges	N	Rank	Mean	SD
Poor funding of research work and restricted access to research and conference grants.	330	1	4.48	0.773
Heavy teach load.	330	2	4.38	0.825
Insufficient time for research work.	330	3	4.33	0.988
Family and domestic responsibilities.	330	4	4.27	0.897
Poor research environment infrastructure and deterioration of institutional conditions.	330	5	4.22	0.948
Exclusion from networking groups	330	6	4.13	1.020
Socio-demographic factors.	330	7	4.08	0.861
Heavy load of students' project supervision.	330	8	4.07	0.878

Table 2 documents the unique research development challenges that women contend with in the process of developing their research capacity in Nigerian Public Universities, while controlling for institutional, career and demographic variables. This table therefore explains and determines the nature of the conditions that impact on women in the attempt to build their research capacity in the academic milieu. Results on the table show that across all the variables, poor funding of research work and restricted access to research and conference grants significantly impacted on the research capacity development of female academics. This problem ranked first and had the highest mean score of 4.48. This was followed by heavy teaching load ($\bar{x}=4.38$), insufficient time for research work ($\bar{x}=4.33$), family and domestic responsibilities ($\bar{x}=4.27$), poor research environment / infrastructure and

deterioration of institutional conditions ($\bar{x}=4.22$), exclusion from networking groups ($\bar{x}=4.13$), socio-demographic factors ($\bar{x}=4.08$) and heavy load of students' project supervision ($\bar{x}=4.07$)

It is interesting to note that amongst the variables listed, poor funding topped the list, a trend different from the popularly accepted notion that family and domestic responsibilities have negative effects on the research activities and career progression of academic women. With respect to funding, the study shows that the challenges of female academic research capacity development are exacerbated by lack of regular funding. This constrains opportunities for executing research proposals and for attending conferences which provides opportunities for exposure that advance research careers for women. Following the reduction of funds by Nigerian government and the inability of universities to raise sufficient funds for research, there has been recourse by individuals to secure funding to advance their research work without university involvement. This poses a challenge to building research capacity at the institutional and individual levels. Further still, the gradual decline of state funding of Public Universities has crippled their capacity to fund staff research activities. In view of this Fapohunda (2011) noted that sometimes available limited funds in Universities are made on the basis of whether one has good contacts with the top management. This implies that the methods of allocation of such funds are sometimes not transparent and does not support deserving proposal.

Results on the table show that heavy teaching load allocated to females ranked 2nd as a major challenge. There are rising heavy teaching load and services for women in Nigerian Public Universities which act as barriers to research capacity building. Although teaching is often represented as a distraction from research, a heavy load of it has been found to be an impediment to research. Although Carvalho and Santiago (2010) talked about positive ways in which their research was shaped by the time spent teaching in the classroom and affirmed that interactions between undergraduates and postgraduates was important for building up a good research work; but Brooks (1997) however emphasized the implications of heavy teaching load on the time spent to develop research skills. He affirmed that women usually have heavier teaching load because they occupy the lower status position in academia.

Insufficient time for research work as well as family and domestic responsibilities ranked 3rd and 4th respectively on table 2 as research capacity development challenges that women contend with in academia. This study has shown that taking up heavy teaching loads as well as heavy routine administrative assignments, lead to loss of research time. Creating time for research is fundamental in developing research skills and becoming a successful researcher. In view of this, Dever et al (2006) found out in their study that academic staff were unable to work effectively on their research work in their offices due to heavy load of work. They found that the best approach was for academic staff to work elsewhere in order to get their research work done. In the same vein, combining family and domestic responsibilities with building research skills for a successful research career has been found to be demanding. This is in consonance with previous studies (Sabharwal and Corley, 2009; Kerzar and Lester, 2009) who found that demanding familial responsibilities resulted in less research conducted by women as well as a reduction in their capacity to develop their research skills. Walker (1998) in support of this submitted that domestic responsibilities slow down a career in research particularly when they have to take maternity leave to care for children and sometimes for their elderly relatives. Although family commitments have thus emerged as a factor that interrupts women's research work and skills acquisition, it however did not rank 1st in this study.

Analysis on table 2 further shows that poor research environment and deterioration of institutional infrastructure were disabling and ranked 5th. Most Public Universities in Nigeria do not have adequate facilities and work environment that are conducive for sustaining research and for building capacity. For instance, repairs and replacement of facilities are almost impossible and not thoroughly done. Also, epileptic power supply, poor internet connectivity and water supply just to mention a few have led to incidence of discontinuation of longitudinal studies and abandonment of research projects.

The fact that "Exclusion from networking groups" ranked 6th and had a mean score of 4.13 as revealed on the table is an indicator that institutional practices uphold male privilege. Also research competencies acquired through networking is constrained by power structure, gate keeping, as well as exclusionary and gendered practices that discriminate against women. In support of this, Sadl (2009) maintained that exclusion from networking opportunities such as participation in training workshops and conferences reproduce discriminatory practices that are detrimental to research career advancement for women. Networking provides specific help in research career building and a central part of success. Gibson (2006) thus affirmed that networks of support are essential prerequisite in the support of women's research careers.

Table 2 further shows that socio-demographic factors were also found to be challenges to women's research capacity development. They included an interplay of individual characteristics (age, marriage, gender etc) and social dynamics (economic status, religion etc) that shaped the outcomes of successful research and impacted on the capacity to build competent research skills for females. For instance, Archer (2008) found that the age of women

limited their research achievement. He added that the older they were, the more difficult it was for them to complete their doctoral degrees. This study has found that the intersecting socio-demographic identities of women which includes roles within the home, work and the society resulted in differing research capacity constructions. In support of this, studies have shown that developing the research skills and fulfilling necessary research tasks in order to be evaluated, was challenging because socio-demographic variables limited women's time to build their research records and raise their profiles (Brooks 1997).

Heavy load of students' project supervision was also found to impact on the research capacity building of the female respondents. This however ranked last (8th) on the table. Although this variable ranked 8th and featured as a challenge, Dever et al (2006) found that supervision of students' project could be beneficial for the personal research work of academic staff. They explained that attention paid to post-graduate students and their research fed into the research activities of academics in productive ways. In support of this Walters et al (1990) found that the dynamic exchange of ideas and insight between the supervisor and their students as well as the opportunities to co-author work, delivered positive experiences and training for both parties.

Table 3: Strategies and initiatives for improving women's research skills

Strategies	N	Rank	Mean	SD
Training in new research skills.	30	1	4.55	0.747
Provision of adequate research facilities and grants.	330	1	4.45	0.722
Support for conference attendance and short foreign attachments.	330	3	4.46	0.833
Incentives for publishing in high impact factor journals and awards for research discoveries.	330	4	4.38	0.674
Building networking and collaborative system for funds with role models.	330	5	4.30	0.884
Flexible time-tabling and allocation of teaching / administrative workloads to academic staff (e.g. one semester for teaching and another for research).	330	6	4.26	0.748
Developing gender friendly policies that take cognizance of women's multi faceted roles.	330	7	4.21	1.029

Table 3 shows respondents' opinions on the strategies and initiatives for improving women's research skills. This is imperative because improving research skills impacts on the advancement of women in academia since research productivity is the most important criterion of assessment and for engendering equality in the system.

Data on the table shows that training in new research skills and provision of adequate research facilities and grants were the most preferred strategies for improving women's research skills. These variables ranked 1st with a mean score of 4.55 respectively. This was followed by support for conference attendance and short foreign attachments ($\bar{x}=4.46$), incentives for publishing in high impact factor journals and awards for research discoveries ($\bar{x}=4.38$); building networking and collaborative system for funds, with role models ($\bar{x}=4.30$), flexible time-tabling and allocation of teaching / administrative workloads to academic staff (e.g. one semester for teaching and another for research) etc ($\bar{x}=4.26$); and developing gender friendly policies that take cognizance of women's multifaceted roles ($\bar{x}=4.21$).

Generally, results across the table show that majority of the respondents indicated that training in new research skills and provision of research facilities and grants are critical for improving women's research skills. This was followed by support for conference attendance and short foreign attachments. These results point to the fact that training is particularly important for early stage researchers and for all other categories of academic staff, because research careers diversify and new research skills evolve necessary to succeed and relevant for advancement. Training thus helps female academics to update and build on existing competencies necessary for mobility in academia. Furthermore, provision of research facilities enhances the capacity of staff to build their skills through sustainable research work. In addition, provision of funds and grants specially for women is important for improving their research skills because availability of funds lead to development of new capabilities and innovations in research. It also enables them leapfrog to the frontiers of knowledge and increase their publications and chances of being evaluated as accomplished researchers (Bronstein and Farnsworth, 1998). Consequently, provision of funds are critical in providing support for conference attendance and for short foreign attachment as evident on the table. These development opportunities prepare younger female faculty to adequately participate effectively in academia by providing them with the requisite skills to advance in the system and to bridge the gender gap.

The findings on Table 3 indicates that incentives for publishing in high impact factor journals and awards for research discoveries enable female academics achieve scholarly goals and precludes opportunity for gaining recognition and symbolic visibility which enhance research skills and careers. Since women find fewer opportunities to build successful research careers, due to institutional structures and practices that favour men, data on table 3 therefore suggests the need for women to build networks and form collaborative system with role models. This is critical because it has been found that successful academic women surround themselves with role models whose guidance and leadership promote career success (Dever, et, al, 2006).

Furthermore, data on table 3 supports the need for flexible time-tabling and allocation of teaching/administrative workloads. Most times, female academics are saddled with heavy non-scholastic responsibilities which detract from the time needed to publish and develop their skills in research work. In view of this, there is need for flexibility in the schedules of academic staff particularly in terms of teaching and administrative assignments, so that they would have the time and capacity to manage their research activities and improve on their skills. Walker (1998) in support of this, equated flexibility with autonomy and found that it underpinned the research performance of academic staff in positive ways. Brooks (1998) thus advocated for "one semester for teaching and another for research" so that academic staff would be able to devote more time to meaningful research for building their skills.

Finally participants highlighted the need to develop gender friendly policies that take cognizance of women's multi-faceted roles in Nigerian universities. It is important that university leadership commits to initiating and operationalizing gender policies and strategies that are in line with institutional practice. Such policies should provide supportive measures for female academics to focus on their research in order to achieve specific scholarly goals and also to develop their capacities. In addition, such policies should make provisions for flexible funding for a short period of time of research work for early stage female researchers. Provisions should also be made in such policies for mentoring and training programmes offered in various formats to suit the needs of specific women, particularly the younger ones who have less experience in research work. All of these would facilitate building the research capacity of females such that there would emerge over time a sufficient number of them qualified to occupy decision-making positions in academia and engender equality by filling the gender gap.

Conclusion

Universities acknowledge research and publication for the career advancement and academic recognition of academics, yet female academics face obstacles which inhibit their research productivity. Apart from attributing this to women's tripartite roles as well as to other factors, critical to this is the lack of strategies for improving the research activities of female academic staff in most Nigerian Public Universities. The university environment is male dominated and breeds male tolerant cultures and environment. Consequently, the women lag behind their male counterparts in publication rates, leading to gender gaps in research productivity. Some of them lack research experience which is essential to engage in the process of creating research portfolios. They therefore run the risk of turning into consultants rather than researchers. Developing the research capacity of female academics in Nigerian universities therefore becomes imperative for improving the quality and quantity of women's research output and for engendering equality in academia. This study therefore provided insights into the research activities of female

academics as well as their research capacity development challenges. It also provided measures that are needed to build women's research capacity skills in order to enhance their research profiles and track records.

In assessing the research activities of women, this study found that women won fewer research grants over a period of five years, published mainly about one paper annually and occasionally presented papers in conferences on an annual basis. It was found that the various challenges females contended with in the quest for developing their research capacity were multi-layered and related to personal, socio-economic and institutional practices, with poor funding of research work and restricted access to conference grants ranking first amongst them. Interventions and initiatives that can help women to build their research capacity were identified. Some of such interventions included: training in new research skills, provision of grants with adequate research facilities, building networks and collaborative system for females with role models whose guidance and leadership are critical for career success, and capacity building etc. It was found that opportunities for female academics to collaboratively discuss challenges, share experiences and learn from each other's strategies provide spaces to address their challenges and build the necessary networks to develop their research capacities.

Enquiry into gender within universities elucidates the challenges women face and strengthens the case for initiatives aimed at aspects of research capacity development of female academics. Explicit attention to specific challenges female academics face in their career progression and in developing their research capacity skills is therefore necessary to harness efforts that redress gender imbalance and promote gender equality in Nigerian public universities. This is critical because a balanced gender representation contributes to excellence in research, positively influences research outcomes and promotes the acceptance of scientific insights, thereby affirming the credibility of universities. This is important because universities are home to the majority of aspiring and practicing researchers and as such play a crucial role in ensuring that research careers are attractive to women. Since it has been discovered that persistent gender inequalities impact negatively on women's research careers, universities have a distinct responsibility to offer support that will help women develop their research skills and advance in the academic research careers.

Author's background information.

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