

Cutting-Edge Research for Global Competitiveness among Academic Staff of Faculties of Education in the Universities in South-South, Nigeria

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Abstract

The study investigated cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria. Three research questions and hypotheses guided the study. The study adopted the descriptive survey design. The population of the study comprised 864 academic staff (Males = 523; Females = 341) of the Faculties of Education in the 17 public universities in South-South, Nigeria. The sample size was 375 Academic Staff (Males = 229; Females = 146) representing 43% of the population drawn using simple random sampling technique. The instrument for data collection was titled Cutting-edge Research for Global Competitiveness among Academic Staff Questionnaire (CRGCASQ). The questionnaire was structured by the researchers, validated by experts and with a reliability index of 0.79 ascertained using Cronbach's Alpha. Mean and standard deviation were used to answer the research questions while z-test statistics was used to test the hypotheses at 0.05 alpha level. The study revealed among others that the factors that hinder cutting edge research for global competitiveness among academic staff of faculties of education in the universities in South-South, Nigeria include: not publish and perish syndrome; too much academic workloads; non-adherence to the rigors of research such as going to the field to collect data; lack of research funding and compensation; insufficient research training; lack of technical support and so on. It was recommended among others that the Deans of Faculties of Education should critically analyze the factors identified for action plan to ensure staff cutting-edge research productivity.

Keywords: Cutting-edge Research, Global Competitiveness, Academic Staff, Faculties of Education, Universities.

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INTRODUCTION

Universities are regarded as the engine room for the production of highly skilled manpower. There are different levels of people that carry out different responsibilities in the university institutions. Specifically, there are two sets of staff that work in the universities for the production of manpower with specialty in different areas. These are the academic staff and non-academic staff. They are the spark and key-men in the drive to progress in university education enterprise. The focus of the study is the academic staff. Academic staffs are the core intellectual capital equipped with desirable knowledge, competence and commitment to carry out the academic responsibilities in higher institutions. Modebelu and Onyali, (2011) described the academic staff as group of individuals that are employed in the universities and other tertiary institution to train and groom students through higher level manpower training needs. They are professionals

whose duties are to teach students, conduct research and disseminate knowledge with other community service activities. One necessary challenge facing the academic staff in the 21st century is global competitiveness.

Global competitiveness is a mechanism that emerged sequel to globalization. Globalization is about the interconnectedness of people and businesses across the world that eventually leads to global cultural, political and economic integration. While competitiveness pertains to the ability and performance of people or a country to sell and supply goods and services in a given market, in relation to the ability and performance of other people or countries in the same market. In line with the above, the World Economic Forum as cited by Ulengin *et al.*, (2011) referred to global competitiveness as the ability of the settled operations in a country to sell the products and services they have produced to the international markets in a way that can make an increase in the living standards of

all the citizens. In the context of this study, global competitiveness is seen as the ability of a nation to provide quality products and services that have global relevance as to compete with other nations. In other words, global competitiveness is seen as a measure of relevance and success at the international level. One vital factor that endears global competitiveness is cutting-edge research.

Cutting-edge research is a research in any field that has high importance and applications to address critical challenges in the society. It is a research that is problem-solving oriented. In other words, cutting-edge research leads to practical solutions to real-world challenges. Yasui *et al.*, (2018) defined the term "cutting-edge" as work that not only demonstrates the highest level of research using state-of-the-art apparatus and techniques but also pioneers an unexplored research field which leads to the solution of societal problems. Such research discovers new knowledge and ideas essential in driving the future of society and humanity. It is said to be relevant to the needs of individuals and society, in both the short and long term. Serious-minded universities place cutting-edge research at the core of what they do. Apart from placing universities higher up in regional and global rankings, cutting-edge research allows them to remain relevant in research and development (R&D).

In the globalizing world, having a competitive power at an international level is very important both for developed and developing countries (Keser, 2015). Given the global competitiveness environment in education, research pursuits have become the cornerstone of being competitive and relevant for the academic staff and universities at large. In the developed countries, cutting-edge research gives academic staff and universities their competitive status on the global educational market, the basis of its international reputation and a guarantee of the countries' increase in their overall innovative potential. In the developing nations it appears to be worth giving only inept, very little or no professional attention. As global citizens, they are required to carry out cutting-edge research that will place them on the global scale. Based on the backdrop, the study focuses on cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria.

Statement of the Problem

Global competitiveness is presently the norm for the survival and prosperity of every nation. It has become an essential factor in the assessment of countries and regions. To be relevant in the twenty-first century, individuals and countries will have to add value in the workplace to command a competitive power in the global marketplace. Cutting-edge research is a vital tool of being globally competitive on the part of the academic staff as well as university institutions.

Cutting-edge research is the key element of the knowledge creation and innovation systems. Cutting-edge research is carried out to address critical challenges in the society. The researchers observed that the academic staff in the universities in Nigeria especially Faculties of Education carry out research for the sake of improving their curriculum vitae (CV) and to gain their promotion in the system. Not engaging in cutting-edge research appears to lead to unhealthy practices in the research activities, publication fraud and wasteful research which crystalize to low quality research results. They appear not to bring practical solution to problems that bedevil the education system and the society at large. These observations are what bothered the researchers to focus this study on cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria.

AIM AND OBJECTIVES

The study aimed at cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria. In specific terms, the study sought to:

1. Investigate the factors that hinder cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria.
2. Find out the ways to ensure cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria.
3. Determine the strategies to promote cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria.

Research Questions

The following research questions were posed to guide the study:

1. What are the factors that hinder cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria?
2. What are the ways to ensure cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria?
3. What are the strategies to promote cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria?

Hypotheses

The following hypotheses were tested at 0.05 alpha level:

1. There is no significant difference between the mean ratings of the respondents with respect to

the factors that hinder cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria.

2. There is no significant difference between the mean values of the respondents with respect to the ways to ensure cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria.
3. There is no significant difference between the mean scores of the respondents with respect to the strategies to promote cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria.

LITERATURE REVIEW

Cutting-edge research in education has contributed in no small measure to educational progress, solution of educational problems, development of human capital in education, promotion of social progress, development and national survival in the developed countries. Academic staff in higher institutions in Nigeria is expected to engage in cutting-edge research to ensure the attainment of these goals in the nation. Academic staff engagement in cutting-edge research in higher institutions is hindered by several factors. Scholars have explored the main factors that cause low quantity and quality research productivity. The study of Fawzi and Al-Hattami (2017) on faculty production of research papers: challenges and recommendations found the following: workload pressure, lack of time, administrative work pressure, lack of research networking amongst colleagues, lack of research oriented culture, lack of research funding and lack of mentoring/guidance with respect to methods and techniques for doing research as factors that affect faculty research productivity. Yassinova (2019) in the study on factors impacting research productivity revealed the following factors: individual factors: lack of knowledge and skills, low level of interest in conducting research, and lack of time due to family responsibilities; institutional factors: heavy teaching and service workloads, lack of financial support, lack of technical support and resources, and absence of mentors to facilitate research. Sarunya (2008) echoed that there are many obstacles that impact on low research productivity which need to be resolved and eliminated if research productivity is to increase.

Identifying barriers that limit research productivity and proffering solution to them is a critical step on the way to improve research productivity of academic staff in terms of not only quantity but most importantly quality. Several studies have been conducted with emphasis on overcoming the barriers to low quantity and quality research productivity. Fawzi and Al-Hattami (2017) in their study found less teaching load, less administrative work, and

appreciation and encouragement, workshops on how to do research, more collaboration among faculty on different research topics, and looking for more opportunities to disseminate findings in international conferences as the ways that may help them increase their writing and publication of research papers. The study of Okendo (2018) on the constraints of research productivity in universities in Tanzania, deduced that teaching and research time, institutional management of reliable time schedule for research activities, attendance of staff to professional research development activities both within and outside the university, creation of research infrastructural facilities such as research agenda, research teams and research institutes, attitude of researchers towards research activities, contribution of cultures towards research activities, allocated time for research productivity in the university, cooperation of the research teams, sustainability support and coordination of faculty development initiatives and provision of research information and authorization for external research are the ways to tackle the constraints in order to enhance research productivity of the faculty staff of Mwenge Catholic University. Mohee (2016) submitted that University of Mauritius is taking these steps with the aim of becoming one of the leading universities in Africa. Other African universities should take similar steps to increase the visibility and usefulness of their research.

Strategies are required to promote cutting-edge research among academic staff. Strategies enable research professionals to conceptualize, generate, and disseminate high-quality research evidence relevant to driving policies (Oluwasanu, *et al.*, 2019). A review of related literature and studies reveals several strategies aimed at enhancing research productivity. The study of Alghanim and Alhamali (2011) on research productivity among faculty members at medical and health schools in Saudi Arabia revealed that incentives, training on research, allocating appropriate funds, departmental support and creating a research atmosphere were among measures that could be taken to increase the research output both in quality and quantity. The study carried out by Ezeanolue *et al.*, (2018) on gaps and strategies in developing health research capacity: experience from the Nigeria Implementation Science Alliance, revealed the following: increased funding for research, improved research education, improved mentorship and training in research by senior faculty, improved infrastructure for research, increased collaboration between academic/research institutions, greater engagement between researchers and policy-makers, greater leadership buy-in for research as strategies judged to be important in increasing research and implementation science capacity in Nigeria. Aithal (2016) submitted that by adopting these strategies in higher educational institution, the institutional research productivity can be increased and higher education institutions can become more competitive and better contributors for the society.

METHODOLOGY

The design of the study was the descriptive survey. The population of the study comprised 864 academic staff (Males = 523; Females = 341) of the Faculties of Education in the 17 public universities in South-South, Nigeria. The sample size was 375 Academic Staff (Males = 229; Females = 146) representing 43% of the population drawn using simple random sampling technique. The research instrument for data collection was titled Cutting-edge Research for Global Competitiveness among Academic Staff Questionnaire (CRGCASQ). The questionnaire was structured by the researchers, validated by experts and with a reliability index of 0.79 ascertained using

Cronbach's Alpha. Mean and standard deviation were used to answer the research questions while z-test statistics was used to test the hypotheses at 0.05 alpha level. An item with a calculated mean value equal to or greater than 2.50 was accepted while an item with the calculated mean value less than or equal to 2.49 was rejected.

RESULTS

Research Question One: What are the factors that hinder cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria?

Table 1: The Mean Values and Standard Deviations on the Factors that hinder Cutting-edge Research for Global Competitiveness among Academic Staff of Faculties of Education in the Universities in South-South, Nigeria

S No.	Factors that hinder Cutting-edge Research	\bar{X}	SD	Remarks
1.	Publish or Perish syndrome.	3.06	0.56	Agreed
2.	Too much academic workloads.	3.12	0.51	Agreed
3.	Non-adherence to the rigors of research such as going to the field to collect data.	2.81	0.90	Agreed
4.	Lack of research funding and compensation.	3.09	0.53	Agreed
5.	Insufficient research training.	2.59	0.89	Agreed
6.	Lack of research networking amongst colleagues.	2.48	1.02	Disagreed
7.	Lack of technical support and resources.	3.03	0.60	Agreed
8.	Low priority accorded to research and development by the government.	3.10	0.54	Agreed

Table 1 indicates that except item 6 with mean value of 2.48 below the criterion mean, all the other items have mean values above the criterion mean of 2.50. The data revealed that items 1, 2, 3, 4, 5, 7 and 8 are the factors that hinder cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria.

Research Question Two: What are the ways to ensure cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria?

Table 2: The Mean Scores and Standard Deviations on the Ways to ensure Cutting-edge Research for Global Competitiveness among Academic Staff of Faculties of Education in the Universities in South-South, Nigeria

S No.	The ways to ensure cutting-edge research	\bar{X}	SD	Remarks
9.	Adhering to research quality instead of number of papers published for promotion.	3.14	0.45	Agreed
10.	Reduction of teaching loads by employing more qualified staff.	3.04	0.63	Agreed
11.	Strict adherence to the rigors of research such as going to the field to collect data.	3.02	0.72	Agreed
12.	Implementation of special funding schemes for research.	3.11	0.55	Agreed
13.	Deployment of professional researchers to mentor other staff.	3.07	0.69	Agreed
14.	Implementing institutional policies on collaborative research among academics.	2.67	0.89	Agreed
15.	Increasing the investment for research facilities and technical support.	3.12	0.53	Agreed
16.	Government according high priority to research and development.	3.16	0.42	Agreed

Table 2 shows that all the items have mean scores above the criterion mean of 2.50. The data indicated that all the items are the ways to ensure cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria.

Research Question Three: What are the strategies to promote cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria?

Table 3: The Mean Ratings and Standard Deviations on the Strategies to promote Cutting-edge Research for Global Competitiveness among Academic Staff of Faculties of Education in the Universities in South-South, Nigeria

S No.	Strategies to promote cutting-edge research	\bar{X}	SD	Remarks
17.	Continuous research capacity enhancement for the staff.	3.06	0.59	Agreed
18.	Structured capacity building in cutting-edge research techniques for early career staff.	3.05	0.50	Agreed
19.	Enforcement of staff membership in established research centers for training.	2.88	0.76	Agreed
20.	Creating institutional research fund to support any activity related to research and publication.	3.02	0.56	Agreed
21.	Providing computation and data analysis facilities to faculties or departments.	3.10	0.49	Agreed
22.	Implement an appropriate reward system to encourage staff that excel in research in a particular year.	3.08	0.51	Agreed
22.	Creating an enabling environment for publication of research outputs.	2.96	0.68	Agreed
24.	Invite competent foreign researchers to conduct seminars on cutting-edge research for staff.	3.00	0.64	Agreed

Table 3 reveals that the mean ratings of all the items are above the criterion mean of 2.50. The data showed that all the items are the strategies to promote cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria.

H0₁: There is no significant difference between the mean values of the respondents with respect to the factors that hinder cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria.

Table 4: Z-test Analysis of Difference between the Mean Values of the Respondents with respect to the Factors that hinder Cutting-edge Research for Global Competitiveness among Academic Staff of Faculties of Education in the Universities in South-South, Nigeria

Respondents	N	\bar{X}	SD	df	Z-cal	Z-crit	Decision
Male Staff	229	2.98	0.67	373	0.10	1.96	Accepted
Female Staff	146	2.86	0.71				

Table 4 indicates that at 0.05 alpha level and 373 degrees of freedom, the calculated z-value of 0.10 is less than the critical z-value of 1.96. Since the calculated z-value of 0.10 is less than the critical z-value of 1.96, the study failed to reject the null hypothesis.

H0₂: There is no significant difference between the mean scores of the respondents with respect to the ways to ensure cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria.

Table 5: Z-test Analysis of Difference between the Mean Scores of the Respondents with respect to the Ways to ensure Cutting-edge Research for Global Competitiveness among Academic Staff of Faculties of Education in the Universities in South-South, Nigeria

Respondents	N	\bar{X}	SD	df	Z-cal	Z-crit	Decision
Male Staff	229	3.07	0.59	373	0.21	1.96	Accepted
Female Staff	146	3.01	0.63				

Table 5 shows that at 0.05 alpha level and 373 degrees of freedom, the calculated z-value of 0.21 is less than the critical z-value of 1.96. Since the calculated z-value of 0.21 is less than the critical z-value of 1.96, the study retained the null hypothesis.

H0₃: There is no significant difference between the mean ratings of the respondents with respect to the strategies to promote cutting-edge research for global competitiveness among academic staff of faculties of education in the universities in South-South, Nigeria.

Table 6: Z-test Analysis of Difference between the Mean Ratings of the Respondents with respect to the Strategies to promote Cutting-edge Research for Global Competitiveness among Academic Staff of Faculties of Education in the Universities in South-South, Nigeria

Respondents	N	\bar{X}	SD	df	Z-cal	Z-crit	Decision
Male Staff	229	2.99	0.62	373	0.15	1.96	Accepted
Female Staff	146	3.04	0.56				

Table 6 reveals that at 0.05 alpha level and 373 degrees of freedom, the calculated z-value of 0.15 is less than the critical z-value of 1.96. Since the calculated z-value of 0.15 is less than the critical z-value of 1.96, the study upheld the null hypothesis.

on low research productivity which need to be resolved and eliminated if research productivity is to increase.

DISCUSSION OF FINDINGS

The study revealed the factors that hinder cutting edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria to include: publish or perish syndrome; too much academic workloads; non-adherence to the rigors of research such as going to the field to collect data; lack of research funding and compensation; insufficient research training; lack of technical support and resources; and low priority accorded to research and development by the government. The study showed no significant difference between the mean values of the respondents with respect to the factors that hinder cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria. In accordance with this result, previous studies Fawzi and Al-Hattami (2017), and Yassinova (2019), have found the identified factors as barriers to faculty productivity in research. Thus, the results imply that the academic faculty members face inhibitory factors in their research and publication productivity. The results are in line with Sarunya (2008) who echoed that there are many obstacles that impact

The study indicated the following: adhering to research quality instead of number of papers published for promotion; reduction of teaching loads by employing more qualified staff; strict adherence to the rigors of research such as going to the field to collect data; implementation of special funding schemes for research; deployment of professional researchers to mentor other staff; implementing institutional policies on collaborative research among academics; increasing the investment for research facilities and technical support; and government according high priority to research and development as the ways to ensure cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria. The study also showed that there is no significant difference between the mean scores of the respondents with respect to the ways to ensure cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria. The findings are consistent with the findings of previous studies by Fawzi and Al-Hattami, 2017; Okendo, 2018. These results suggest that if institutions design appropriate intervention against these factors, faculty members will have no excuse for not engaging in cutting-edge research and publishing significant research papers. Mohee (2016) submitted that University of Mauritius is taking these steps with the aim of becoming one of the leading universities in

Africa. Other African universities should take similar steps to increase the visibility and usefulness of their research.

The study found the following as the strategies to promote cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria: continuous research capacity enhancement for the staff; structured capacity building in cutting-edge research techniques for early career staff; enforcement of staff membership in established research centers for training; creating institutional research fund to support any activity related to research and publication; providing computation and data analysis facilities to faculties or departments; implement an appropriate reward system to encourage staff that excel in research in a particular year; creating an enabling environment for publication of research outputs; and invite competent foreign researchers to conduct seminars on cutting-edge research for staff. Findings from this study are consistent with the majority of previous findings by Alghanim and Alhamali, 2011; Echeona *et al.*, 2018; but also offer additional insights on strategies to promote cutting-edge research. The present study and the previous studies indicated that cutting-edge research can be promoted by adopting strategies to develop research capacity of academic staff. Aithal (2016) submitted that by adopting these strategies in higher educational institution, the institutional research productivity can be increased and higher education institutions can become more competitive and better contributor for the society.

CONCLUSION

On the basis of the findings, the study established that numerous factors hinder cutting-edge research, there are appropriate ways to ensure cutting-edge research, several strategies to promote cutting-edge research for global competitiveness among academic staff of Faculties of Education in the universities in South-South, Nigeria abound.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations were proffered:

- Deans of Faculties of Education should critically analyze the factors identified for action plan to ensure staff cutting-edge research productivity.
- National Universities Commission (NUC) should make relevant policies based on the ways identified as a guideline to ensure cutting-edge research among the staff.
- The Government and University Management should proactively implement the identified strategies as they would help the staff to carry out cutting-edge research in Nigerian University institutions.

REFERENCES

- Aithal, S. P. (2016). *How to increase research productivity in higher educational institutions-SIMS Model*. <https://mpa.ub.uni-muenchen.de/71750/>
- Alghanim, S. A., & Alhamali, R. M. (2011). Research productivity among faculty members at medical and health schools in Saudi Arabia: Presence, obstacles, and associated factors. *Saudi Medical Journal*, 32(12), 1297-1303.
- Ezeanolue, E. E., Menson, W. N. A., Dina, P., Aarons, G., Ayodotun, O., Obiefune, M., Dakum, P., Okonkwo, P., Bola, G., Akinmurele, T., Nwandu, A., Khamofu, H., Oyeledun, B., Aina, M., Eyo, A., Oleribe, O., Ibanga, I., Oko, J., Anyaike, C., Idoko, J., Aliyu, M. H., Sturke, R., & Nigeria Implementation Science Alliance (2018). Gaps and strategies in developing health research capacity: Experience from the Nigeria Implementation Science Alliance. *Health Research Policy Systems*, 16(10), 1-6.
- Fawzi, H., & Al-Hattami, A. (2017). Faculty production of research papers: Challenges and recommendations. *International Journal of Humanities and Social Sciences*, 7(2), 221-228.
- Keser, H. Y. (2015). Effects of higher education on global competitiveness: Reviews in relation with European countries and the Middle East countries. *Annals of the "Constantin Brâncuși" University of Târgu Jiu, Economy Series*, 1(I), 58-68.
- Modebelu, M. N., & Onyali, L. C. (2011). Introducing creativity into university lecturers administration of knowledge management competencies in Nigeria. *Nigerian Journal of Educational Administration and Planning*, 11(3), 91-104
- Mohee, R. (2016). *How universities can boost research uptake*. Retrieved from <https://www.scidev.net/global/opinions/universities-boost-research-uptake/>
- Oluwasanu, M. M., Atara, N., Balogun, W., Awolude, O., Kotila, O., Aniagwu, T., Adejumo, P., Oyedele, O. O., Ogun, M., Arinola, G., Babalola, C. P., Olopade, C. S., Olopade, O., & Ojengbede, O. (2019). Causes and remedies for low research productivity among postgraduate scholars and early career researchers on non-communicable diseases in Nigeria. *BMC Research Notes*, 12(403), 1-6.
- Sarunya, L. (2008). *An investigation of factors related to research productivity in a public university in Thailand: A case study*. Unpublished Dissertation, Victoria University, Melbourne, Australia. file:///C:/Users/User/Downloads/Cutting-edge%20Research%20-%20Factors.pdf
- Ulengin F., Önsel, Ş., & Kaaata, S. (2011). Türkiye'nin Küresel Rekabet Düzeyi: Dünya Ekonomik Forumu Küresel Rekabetçilik Raporu'na Göre Bir Değerlendirme. E. Tamer & T. Sabanc

- (Eds.), Üniversitesi Rekabet Forumu (REF) ve Sektörel Dernekler Federasyonu (SEDEFED). Yayınları, İstanbul.
- Yasir, J., Shakil, A., & Shabir, H. K. (2020). Evaluating the research performance of Islamabad-based higher education institutes. *Sage Journal*, 10(1), 1-11.
 - Yassinova, K. (2019). *Factors impacting research productivity*. Unpublished Master's Dissertation, Nazarbayev University, Graduate School of Education.
 - Yasui, M., Muto, S., & Sassa, A. (2018). Challenges of young scientists at the cutting-edge of genotoxicity research: The open symposium of the Japanese Environmental Mutagen Society (JEMS). *Genes and Environment*, 40(22), 1-3.