
Bibliometric Study of Articles Published in the Ethiopian Journal of Education 2006-2016

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Abstract: The main objective of this research was to investigate the nature of researches published in the Ethiopian Journal of Education. This research has tried to portrait the journal and the dynamics it has passed through. It has employed a descriptive bibliometric quantitative content analysis. All the 98 articles published in the Ethiopian Journal of Education between 2006 and -2016 (volumes 26-36) were used as data sources. The data extracted from the articles was categorized based on the bibliometric indicators (measures) and were analyzed using frequencies and percentages. Findings showed that: (1) the Ethiopian journal of education did not show substantial change in productivity (2) gender gap in research was found to be high in favor of male. From the total number of articles only seven female researchers (7.14%) were first authors. This shows that educational research in Ethiopia is still male dominated endeavor. (3) The journal is dominated by the positivist orientation, quantitative approach. (4) About 40.81 percent of the articles were contributed by academics whose academic rank was assistant professor followed by researchers with the rank of lecturer accounting for 28.57 percent. (5) Foreign authors' contribution was found to be very low- in eleven years time only four articles authors were foreigners (4.8 percent). Besides, research collaborations between Ethiopian and foreign academics are weak. (6) Researchers from Addis Ababa University have contributed 41 articles (41.83 percent) followed by researchers from Bahir Dar University that have contributed 20 articles (20.40 percent). Above 72 percent of the total articles published in the journal were from the two universities. (7) Coauthor ship is still weak, the majority of the articles (61.22 percent) are by individual researcher and 30.61 percent are by two or more researchers. Degree of collaboration index as measured by Subramanian index is. 39, which indicated, low degree of collaboration (8) In terms of the area (subfield) educational assessment, testing, and educational psychology dominates the Ethiopian Journal of Education with 30 articles (31.61 percent). The journals inclusiveness in terms of research approaches and designs and research areas it coves is still weak. With this, it is time to upgrade the journal to make it inclusive, and of better quality.

Keywords: *bibliometric study, quantitative content analysis, research assessment, author collaboration, research approach, research communication.*

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Introduction

The sharing of educational research results among academics and professionals through the publication of journals was a common practice for centuries. The dissemination of research findings in education through formal journal publication in Ethiopia was started half a century ago in Ethiopia more specifically in 1967, with the launching of the **Ethiopian Journal of Education**. This journal, passing through many difficulties, has existed and is still serving as an important channel of research communication in education in Ethiopia. However, many aspects of the journal such as the impact of the journal on education literature, its impact on education policy making and practice, its contribution in Ethiopianization of the education system are not sufficiently studied. Besides the productivity of the journal, characteristics of the journal and who contribute the most are not sufficiently studied. Efforts to study the journal in terms of the changes and improvements it has shown over time are almost negligible. Three researchers Gashaw (1999) Amare (2000) and Tesfaye (2011) have conducted research on the journal and tried to look at it in terms of topics (themes) covered and characteristics of the contributors to mention some of their focus areas.

Yet, with the passage of time conducting research on the journal and looking at the dynamics that occurred over time is of paramount importance. The focus of this study is to look at the Ethiopian Journal of Education with the intention to find out its status and the major changes that have occurred since the last three studies mentioned above. The study tried to look at authorship and collaboration patterns, research orientation, national or international standing, and the contents of the journal in terms of subject coverage. It is hoped that this study will have significance for the academics, graduate students and the relevant body of the university.

The research has observed many academics and graduate students who want to do research, face problems in identifying education issues which are researched and what issues are not. This research will help in partially filling this gap. This research will also help researchers see areas that are matured, emerging areas and areas that are missed from the focus of educational research. Besides, the result of this research may serve as an input for the relevant bodies of the university in their future endeavor of improving the journal.

Research Questions

The main purpose of this research was to investigate the nature of research published on the Ethiopian Journal of Education to show features of the journal. It also tried to reveal the dynamics of the journal in terms of the many variables identified as measures (indicators). The study covered the articles published within 2006-2016. It focused on the following research issues:

- What the productivity of the Ethiopian Journal of Education looks like in the specified period (number of articles published by issues, volumes and years);
- The descriptions of the articles contributing scholars in terms of author's gender, rank, area of training, institutional affiliation and types of institutions (academics or professionals), author's location by region, or country;
- The most productive authors in the specified period - rank listing the most productive authors;
- What the co-authorship pattern looks like if there is any - degree of collaboration, local and foreign collaboration activities among authors by country and institution; internationalization status of the journal;
- Which areas (subfields of education) are widely covered and which areas are the neglected?

- The prominent research approaches and research designs employed and those that are neglected; and
- What the structure of the articles looks like in terms of number of pages, number of references).

Operational definition of key terms

Academics are those faculty members employed by higher learning institutions which are engaged in teaching and research as their major missions. The academics are those engaged in teaching and/or research

Professionals are practitioners who have received education and training in a specialized field and are serving at different line ministries and organizations outside higher learning institutions.

Content analysis is the systematic quantitative study of documents (research articles) with established procedure that involves, counting, quantifying, aggregating and analyzing the research articles published on the Ethiopian Journal of Education in order to come up with findings, which depict the characteristics of the journal under study.

The Ethiopian Journal of Education: Genesis, Development and the Review Process

The birth of the Ethiopian Journal of Education as documented by some authors such as Gashaw (1992) and Amare (2000) and Berhanu (2017) dates back to June 1967. The aim of the journal was serving academics, professionals and researchers as platform for the exchange of ideas in education. According to Amare (2000) the journal has passed through many ups and downs in its existence for over five decades. There was an interruption of the publication of the journal for five years (1976-1981), thus, volume 9 was published in 1981.

Publication of the journal was discontinued again for the second time for five years until it reappeared in 1986 with the publication of volume 10. The reasons for discontinuation, as stated by Gashaw (1992), were mainly shortage of publishable articles and technical problems. Publication of the second issue of volume ten was delayed again for three years and it reappeared in 1989. Amare has called the decade 1977-1987 as the decade of dark ages in the history of the journal. The prevailing political situation in the country was given as an explanation for such repeated interruptions in the publication of the journal.

According to Amare (2000), the year 1989 is noticeable in the history of the journal because the journal started to be published regularly two issues per year. Besides, it secured the recognition as a reputable journal, the first of its kind in the field of education in Ethiopia. Since then the Ethiopian Journal of Education has been the only reputable journal in the areas of education in the country for many years until the recent emergence of one or two journals published by other universities in the country.

The Ethiopian Journal of Education is a reputable journal published in English language twice a year. The journal accepts original research articles, communications, reviews or research reports. It has an editorial board; hence, articles are reviewed through well-established double-blind peer review system. First articles submitted for publication are required to pass through established preliminary quality checking reviewing process. During this review, a staff member of the institute reviews the article and if the reviewer believes the article does not meet the established requirement, it will be rejected. On the other hand, if the reviewer doing preliminary review finds the article meeting the established criteria, it will be sent for two independent reviewers. If both the reviewers confirm this article meets the required standard and is publishable, it will be accepted. Likewise, if both reviewers confirm this article does not meet the required standard and is not publishable it will be automatically rejected. However, when the review results of two reviews are different, one recommending rejection and the other

recommending the article to be published, the article will be sent for a third person and the result of the third reviewer is decisive. Moreover, if the reviewer recommends the article be rejected it will be rejected, if the reviewer recommends the article be accepted it will be published.

Research Done So Far on the Ethiopian Journal of Education

The first pioneering study on Ethiopian Journal of Education under the title "A Review of Articles that Appeared in the Ethiopian Journal of Education" was done by Gashaw in 1992. The purpose of the review by Gashaw (1992) was to look at the type of articles published in terms of content areas covered and he assessed the research orientation of the journal empirical versus theoretical focus. He also looked at sites of studies (to mean level of analysis either education in general or specific level of education) and countries where the research was conducted (geographical issues – research on Ethiopia education verses research done on foreign education system). The other focus was the type of contributors (Ethiopian versus foreign contributors and college and department affiliation). The review covered 12 volumes published between 1967 and 1991 and involved 103 articles.

Gashaw (1992) summarized his major findings as follows: the articles cover only limited areas - with issues related to curriculum and instruction accounting for 27.2 percent followed by educational psychology accounting for 23.3 percent and educational administration 21.36 percent. 61 (59.22 percent) of the 103 articles were mainly theoretical and 42 (40.78 percent) were empirical. 68 (66.1 percent) of the 103 articles had no specific focus of level of education - they covered the whole education system and only 28 articles (27.2 percent) focused on specific level of education. The other issue of focus was college and department level affiliation of the researchers and the researcher established that contribution from staff members of the College of Education ranked first followed by the College of Social Sciences. Within the College of Education, Department of Educational Administration and Educational Psychology ranked as the highest

contributing departments. The researcher pointed out that contribution from other professional fields such as medicine, engineering and law was none. Furthermore, the researcher reported that 102 researchers contributed the 103 articles of which Ethiopians contributed 58.1 percent and foreigners (expatriate staff in the university) contributed 41.9 percent.

The work by Gashaw (1992), although it was a pioneering work, had some major limitations. It did not have clear methods part for doing the review. Besides, the classification of the content area was mainly based on the then existing departments under the Faculty of Education (Curriculum and Instruction, Educational Psychology, Educational Administration, Library Science, Physical Education). Thus, the list was not exhaustive enough. Many fields of study such as teacher education, educational media, and educational policy were not covered.

Amare (2000) made the second relatively comprehensive systematic study on the journal in 2000 under the title "The State of Educational Research in Ethiopia". Although the title says the state of educational research on Ethiopia, the article was a descriptive study of the Ethiopian journal of education. Looking at the title and reading the article one may say there is mismatch between the title and what is covered by the article, however, it is good to understand the situation in Ethiopia during this time in history. There were only two full-fledged universities in the country and the Ethiopian Journal of Education was the only reputable journal specializing on education in Ethiopia.

In his study, Amare raised three grand questions, each with its own sub questions, and employed quantitative content analysis to assess publication of 33 years, which covers the period between 1967 and 1999. He analyzed 123 articles that cover volumes 1-18. The study identified the major contents of educational research covered and the levels of education focused. It also addressed which of the major education issues (quality, access, efficiency and equity) identified in the

educational and training policy were focused and how much attention was given to each. Besides, other parameters such as conceptualization of the research (in terms of the use of research questions, hypotheses, or objectives) and adequacy of the recommendations forwarded were assessed. Likewise, additional parameters such as the type of research methods employed by researchers such as the type research design, data collection instruments, the use of either qualitative or quantitative approach, sampling procedures used were the focus of his investigation. The other issues, which he tried to look at, were researcher characteristics (sex of researchers, nationality of researchers, and type of authorship to mean joint or single authorship) and type of references used by researchers.

The research by Amare revealed some interesting findings. The articles published in the Ethiopian Journal of Education were dominated by the field of psychology and measurement (38 articles) followed by methods of teaching and learning (25 articles). Psychology, measurement, and methods of teaching learning combined numbered 63 articles which was equivalent to 51.21 percent. Other subfields of education such as curriculum topics were almost not included in the journal (only 7 articles in 33 years). Although a key function of the Faculty of Education was education and training of teachers, there were no topics related to teacher education and training area addressed by the journal. The reason could be because of the problem of the classification of the contents of the research or there were not research articles related to teacher education.

Regarding the level of education focused, 43 articles (34.95 percent) had no specific level, and they were rather general. Apparently, tertiary education was the most researched area with 40 articles (32.52 percent) followed by secondary education, 22 articles (17.88 percent). Other levels of the education system were given little coverage (primary education 8 articles, adult education 6 articles and preprimary education only one article). Only one article on preprimary education in

the whole period covered by the research (33 years) could be an indicator of how preprimary education was given little attention in the whole system of education in the country.

The researcher found out that the issue of quality had much coverage (49 articles) followed by efficiency (35 articles). Besides, it was pointed out only few articles related to access (9 articles) and equity (4 articles) appeared in 33 years. This again revealed the weak attention given to the issues of equity in Ethiopia. With regard to conceptualization of research (the use of research questions, hypotheses, or objectives) the researcher found out 51 articles (41.46 percent) used research questions followed by research questions of which 36 articles were classified under this category. He also reported that the descriptive research design was the dominant one accounting for 114 articles of the 123 articles used for the study, with descriptive survey type at the top with 98 articles. Amare asserted that over the 33 years time 13 descriptive case studies and only 2 historical research methods were used. However, this does not fit with the findings of Gashaw. The findings of Gashaw (1992) indicated that of the 103 articles analyzed 61(59.22 percent) were mainly theoretical. The discrepancy could be due to the time the two studies were conducted or the difference in the criteria employed.

The other assessment conducted by Amare was to classify the articles either as qualitative or quantitative type and he found out that 64 of the articles were quantitative research type, 37 quantitative and 26 mixed type. However, the criterion the researcher has used to make such clarification is questionable and even seems contradictory with his own findings on the same paper. He has reported that of the 123 articles 98 of them are descriptive survey type. One interesting finding by Amare is, during the early years in the life of the journal, (1967-1977) qualitative research was dominant; however, this started changing after 1988 and quantitative research started dominating the journal. The two explanations given by the researcher were change in the editorial policy and the orientation of researchers as possible reasons for such

change. Change in staff composition could be also possible reason. During early years, there was many expatriate staff in the university, who was contributing to the journal, who left the country after the fall of the emperor. The other reason could also, many Ethiopian university staff was receiving training and education in socialist countries and this may contribute in the change of the research approach as reflected in the journal articles. Besides, after the fall of the emperor the university was closed and some senior Ethiopian university staff left the country and when reopened their positions were taken by junior staff.

The other major issue addressed by Amare was researcher characteristics. He reported that of the 123 articles, there were only four articles contributed by female authors. The nationality of the researchers was the other area assessed and the researcher found out that of the 123 articles 84 were exclusively published by Ethiopians. Expatriates contributed thirty-four articles and as there were a significant number of foreign staff before 1975 and most of their contribution were observed during the initial periods of the journal (1967-1975). The authorship pattern (joint or single) was the other issue researched. It was reported solo authorship was the prevailing pattern. Out of the 123 articles, 17 articles were results of joint authorship. Thus, solo authorship was the dominant pattern reflected by the Ethiopian Journal of Education. The contribution of this research in shading light on the dynamics of the Ethiopian Journal of Education over the thirty-three years was immense albeit with some limitations. This research failed to build on research done on the journal by other researchers such as Gashaw (1992). Besides, the criteria employed in the classification of the articles as qualitative, quantitative or mixed was not adequately explained. Besides, the cluster of research designs, which he used to tabulate the research articles, was more of empirical quantitative research. Typical qualitative research designs such as ethnography, grounded theory, phenomenology, narrative research was not considered. While looking in to the subfields of education, the classification of the areas (contents) does not look comprehensive

enough. For instance, important areas such as multicultural education were missing.

Tesfaye (2011) conducted the third research on the Ethiopian Journal of Education after nine years of similar research by Amare (2000), covering the period from 2000-2009. This study extended the study by Amare by adding visibility as a major variable. Besides, by looking into the institutional affiliation of the researchers, he explored which universities in Ethiopia contributed most to the journal. The other dimension he added was the academic rank of the researchers and tried to find out the academic rank of the academics contributing most. The researcher analyzed 90 research papers that appeared on 20 volumes (volume 20-29). The breakdown of the 90 analyzed papers was as follows: 81 original articles and nine communications, reviews, or research reports. The researcher used mainly quantitative content analysis and tried to answer three interrelated research questions. The three questions were related to the impact of Ethiopian Journal of Education on Ethiopian educational research. The second task was to look at how EJE covered various sub fields of education. Besides, the researcher tried to find out the visibility of the journal as measured by various attributes such as circulation, longevity, appearance in citation indices and citation of articles published in EJE on subsequent publications. The other third question was related to researcher characteristics measured in terms of inclusiveness of the researchers reflected in terms of diversity of authors' institutional affiliation and their background characteristics.

Regarding the coverage of the journal various subfields of education, the researcher found out that educational psychology and testing ranked first with 19 articles (21.1 percent). This finding is similar with the finding by Amare. Next to educational psychology and testing, language education with 16 articles (accounting for 17.8 percent) was second. Curriculum and pedagogy stood third with 11 articles (12.2 percent). Similarly, there were 11 articles (12.2 percent) on teacher education and development. The study undertaken by Tesfaye (2011)

revealed that 42 articles (46.7 percent) are contributed by academics at Addis Ababa University and 23 articles (23.6) by those in Bahirdar University. In other words, most of the articles (70.3 percent) are by contributors from the two institutions. Academics with the academic rank of assistant professor were the major contributors - contributing 40 articles (44.4 percent) - followed by lecturers contributing 31 articles (34.4 percent). The researcher also reported that the contribution of female researchers was low - contributing seven articles (7.8 percent).

Collaboration in research and publishing was another issue the researcher studied and he reported that 78 articles (76.7 percent) were solo and joint researchers contributed only 12 articles (13.3 percent). This is good indicator for asserting that research collaboration in educational research is not strong. Again, this confirms the findings by Amare solo authorship is the dominant pattern reflected by the Ethiopian Journal of Education. The researcher further reported that the number of articles contributed by foreign authors was very low - in ten years (2000-2009) only three articles were contributed by expatriates. This may indicate its lower acceptance as a scholarly outlet informing academic exchange of ideas and research results. This finding was also consistent with the findings by Amare that the contribution of international scholars in the 1980s and 1990s was insignificant.

The contribution by Tesfaye (2011) in adding to our understanding of the contributions and impact of the Ethiopian Journal of Education on Ethiopian educational research is colossal. However, like other research papers it had limitations. One major limitation was the content areas used to categorize the articles into education subfields. The three researchers, Gashaw (1992), Amare (2000) and Tesfaye (2011) developed their own categories and tried to tabulate the articles based on the classes. As there was no consistency among the categories used by the three researchers, it would be difficult to clearly see the dynamics of the issues covered by the journal. For instance, Gashaw (1992) used curriculum and instruction as one category, however,

Amare (2000) put curriculum as independent category by itself and method of teaching and learning as another category. Likewise, Tesfaye (2011) categorized curriculum and pedagogy under one class.

In conclusion, the three researches have played their role in shading light on the diverse aspects of the articles published in the Ethiopian Journal of Education. However, each of them had his own limitations. For instance, the criteria they used in tabulating the research articles in to categories were not consistent. Each of them developed their own classification. Such use of different criteria would make it difficult to see the dynamics of the issues raised by researchers as research topics.

A brief look at the existing Addis Ababa University Senate legislation shows it has only one provision on co-authorship. Solo author who publishes an article on reputable journal gets one full point; however, as the number of authors increases the points each author gets decrease. Other than joint authorship the issues of first author and consideration for female researchers are not addressed.

What is Bibliometric Method? Meaning and Importance

The curiosity to study various aspects of written communication was immense in human history. However, methodological limitation was an obstacle to meet this interest. Pritchard (1969) undertook the pioneering work to introduce the bibliometric method. Bibliometric is the application of various statistical analyses to count measure and quantify written communication such as journals, books, and monographs to find out patterns from which we can develop meaning. Various authors, for example, Moed and Glänzel (2004), have defined bibliometrics as the study of the quantitative aspects of the production, dissemination, and use of published information. Likewise, Archambault and Gagne (2004) explaining the concept of bibliometrics pointed out that it is a set of methods for measuring the production and dissemination of different branches of human knowledge, particularly scientific knowledge. Lancaster (1977) defined it as *the application of*

various statistical analyses to study patterns of authorship, publication, and literature use.

Journals and books are important means of communication of scientific knowledge achieved through research. Specifically, academic journals published by recognized institutions are important means of informing the scientific community engaged in producing and consuming knowledge. Moodley et al. (2015) expounding the role of publishing research findings indicated that research publications are an important part of the scientific process, making results available to the wider scientific community and playing a key part in linking knowledge generation to uptake and use. Clarifying the important role journals play in academic research discourse Van Raan (2005) has pointed out journals are the international forum, the 'invisible college', by which research results are discussed. Supporting this idea Piotrowski (2013) has stated intellectual exchange is a critical function of higher education and academic journals are the primary mode of communication and instruction among researchers, professors, and even advanced students. In addition, Hutchinson and Lovell (2004) observed that professional journals serve an important function. They offer a mechanism by which professionals communicate ideas, stimulate discussion (as well as controversy), and share information, often in the form of research findings.

However, the publication of the result of research is not enough. The publication and dissemination activity and the channels of communication such as the journal have to be regularly monitored. Several methods exist to evaluate research publications. One of them is the bibliometric method. Bibliometric is the quantitative evaluation of scientific publications in a particular field (Moodley et al. 2015).

With bibliometric, researchers can follow and trace changes in the pattern of change such as in terms of issues researched and research paradigms and collaborations. Many have extensively demonstrated the purpose and importance of bibliometric in the assessment of

research. For instance, Roy and Moutusi (2013) have attested bibliometrics is the discipline where quantitative methods are employed to probe scientific communication process by measuring and analyzing various aspects of written documents. It helps to monitor growth of literature and patterns of research. Equally, Panda, Maharana and Chhatar (2013) have stressed that bibliometrics has been an established area of information research which studies attributes of publications especially scientific research. Pinpointing further the significance of bibliometric, Panda, Maharana and Chhatar (2013) have said bibliometric is important means of research, which helps to evaluate research performance and research trends of individuals and institutions.

Pursuing a similar idea Glänzel (2003) has elaborated the role of bibliometric study that one focus of bibliometric study is structural analyses of the scientific paper and it further looks in to elements besides publications such as (co-)authors, references and citations. De Bellis (2009) and Poor (2009) have pointed likewise out that Bibliometric study is essential to examine and continuously monitor the quality and health of journals. They also stressed that bibliometrics serves as a barometer, of the health of a discipline. Then the question is, does bibliometric research apply to all areas (fields of study and disciplines). Regarding the scope of application of bibliometric study Roy and Moutusi (2013) have accorded that bibliometrics can be applied to any subject area and to most of the problems concerned with written communication. It helps to monitor growth of literature and patterns of research.

The importance of studying a single journal through bibliometric study is sufficiently discussed in the literature on bibliometric study. Anyi, Zainab, and Anuar (2009) have observed that; when a single journal is studied bibliometrically, it creates a portrait of the journal, providing a description that offers an insight that is beyond the superficial. It can indicate the quality, maturity and productivity of the journal in any field, in a country or region. The same authors Anyi, Zainab, and Anuar

(2009) further explaining their point on importance of studying single journal emphasized that bibliometric study of single journal also informs us about the research orientation that it supports to disseminate and its influence on author's choice as a channel to communicate. In agreement with this Pareek (2013) has reported that as journals are one of the most significant vehicles of scholarly communication in any discipline, bibliometric analysis of the contents of any scholarly journal portrays the scientific productivity, trends and emphases of research in a discipline and in the journal itself. Nebelong-Bonnevie and Frandsen (2006) have also reported that single journal studies are very important because they provide a detailed multi-faceted picture of the characteristics of a single journal.

The other important issue worth clarifying here is the state of bibliometric study on journals specializing on education. Bangert and Baumberger (2005) and Rojewski (1997) have stated bibliometric study in education is a common practice. They reported that given the key role peer-reviewed journals play in the development, promotion, and maintenance of a profession, periodic examinations of scholarly journals are a widely-reported practice across education and social sciences. However, the author of this article has tried to find out bibliometric studies on journals specializing on education or education related fields. The conclusion is generally bibliometric research in education related fields is scant. Cheng et al. (2014), Chiang, Kuo, and Yang, (2010) have also confirmed this. They have reported that limited bibliometric studies have been conducted on the publication patterns in education. Thus, this study would be important in contributing in this direction.

Research Approach and Design

There is a lot of confusion in the use of some important terms used in research such as research approach, research design, research methods etc. To overcome such confusion the researcher adopted what Creswell (2014) presents. Creswell stated that research

approaches, research designs, and research methods are three key terms employed to explain about research from broad understanding of research to the narrow procedures or methods.

According to Creswell (2014), research approach means the plan or proposal to conduct research, which involves the meeting of epistemology (worldview), research designs, and specific methods. Creswell has identified three research approaches. Qualitative approach, quantitative approach and mixed approach. In this study, the articles were categorized in the three categories to look at the dominant epistemology behind the Ethiopian educational research landscape. Besides, this researcher has also tried to see the specific research design(s) under each approach. According to Creswell, research designs are procedures or strategies of inquiry within qualitative, quantitative, and mixed approaches that provide specific direction or procedures in research. This research has not addressed research methods, which are more specific than research design and involve the ways of data collection, analysis and interpretation.

Bibliometric Measures

Bibliometric measures (indicators) are important tools in bibliometric study. Different authors have recommended different measures depending on the purpose of the bibliometric study of research assessment. Sankar and Kavitha (2016) pinpointing the importance of bibliometric study and the major indicators involved have stated that single journals bibliometric studies help to know the research trends of a particular field of research. It uses different indicators such as year wise distribution of contributions, authorship pattern and the trends of research collaboration, subject wise distribution of contribution. Besides one of the measures (focus) of bibliometric research is searching emerging research issues or research issues which have already matured enough and are waning. Authors such as Torbati and Chakoli (2013), Kawamura et al (2000) have stated that bibliometric research can offer a more precise picture of the field itself or the

theme. Other than that, comparative analysis can show the maturity of some areas or the themes that the researchers are interested on. Dong and Chen (2015) have also added that one focus of bibliometric is finding out prospective and emerging themes of research. Anyi, Zainab and Anuar (2009) after conducting comprehensive study on single journals focusing on different disciplines and fields have surfaced with comprehensive list of indicators. The indicators they identified are:

Article productivity

- Number of articles published by issues, volumes and years sometimes-indicating trend lines. This helps infer the publication trend over a period and its influence as channel for research dissemination amongst authors in the field.

Author characteristics

- Authors' gender, profession, rank, area of training
- Authors' institutional affiliation and types of institutions (Academic, professionals);
- Authors' location by region, or country.
- This helps provide a picture or profile of the authors, the institutions or country they are affiliated to and the degree of collaboration that exists.

Author's productivity

- Rank list of core and active authors;
- This helps to identify the key authors in a field and estimates whether the distribution of author productivity is different in the various subject areas.

Co-authorship pattern

- Degree of collaboration
- Local and foreign collaboration activities among authors by country and institution;
- Internationalization status of the journal.
- This helps to highlight the preferred authorship number, the size of the research group in a field and percentage of foreign versus local contributions

Content analysis

- Subject areas of articles
- Content analysis number of pages per article;
- Types of research approach used;
- Language of publication
- number of references per article

Methodology of the Research

This research is descriptive bibliometric quantitative content analysis, which involves, counting, quantifying, aggregating and analyzing data to come up with findings, which depict the characteristics of the journal under study. Brown, Ho, and Gutman (2018) have stated that content analysis is useful means to conduct bibliometric study on print communication corpses such as journals. They pointed out that content analysis is a set of analytic approaches used to understand the contents of journals, books, and other scholarly works to establish links and patterns or to determine how specific issues are presented. In the subsequent section data sources, sampling, important steps and activities undertaken to systematically organize and code the data are presented.

Data Sources, Sampling, and Analysis

The data source for this research is the Ethiopian Journal of Education. The publications from 2006-2016 are used as data sources, which includes all volumes 26-36. The reason why this research has focused on this particular period is that Amare has covered the period between 1967 and 2000 and Tesfaye has covered the time between 2000 and 2009 of the same journal.

In the specified period (2006-2016), 98 articles, 3 reviews and 1 commentary were published. The data sources for this research are only the 98 research articles. It does not include the reviews and commentaries. In order to have clear picture on the journal instead of taking sample articles, taking all the 98 articles was found necessary to make the study meaningful. Hence, all the articles are used as data sources for the research.

Data Collection Procedure and Coding

The publications of the Ethiopian journal of education starting from the first publication in 1967 up to the recent publications in 2016 are available on line on the university library website. The online journal is free, where any interested person can access. Making the journal freely available online has contributed a lot in making this research relatively easily to access all the articles. The data for this research is collected from the online articles. The procedure and steps followed in data collection was as follows. First, the researcher checked all the articles are available on line, and then he prepared categories based on the research questions. The categories include name of author (s), number of authors, country (countries) of author(s), institutional affiliation of author (s), academic rank of author (s), number of pages, number of references used, subfield category (area covered), level of education, sex of authors , research approach, field of study of author (s) research design, language of publication. In order to systematically prepare the data one-page soft copy coding sheet was prepared for

each article. Then each article was carefully read and each data about each article entered on the prepared coding sheet. The researcher himself carried out the task. After the completion of the categorizations print out of the list of the 98 articles with the coding sheet was prepared and given to one colleague in the department of Curriculum and Instruction. He made his own assignment of the articles to the already prepared categories on three important categories; subfield category (area covered), research paradigm and research design. The assignment of the articles to the prepared categories by the researcher and the assignment (categorization) made by the second person (colleague) were similar on 93 articles. Discussion was conducted between the researcher and the colleague who assisted the researcher in the assignment of the articles. The purpose of the discussion was to resolve the differences on the five articles, which both of us disagreed. After discussion, we agreed on the three articles. However, we decided to involve third person on the two articles and accept his idea. The two articles where the researcher and second person disagreed were given to another third person in the department of Curriculum and Instruction and he assigned (categorized) them in the prepared categories. This entire exercise was to make the categorization more acceptable.

After finishing the categorization, what followed was tallying and tabulation. Separate tallying sheet for each category was prepared. The researcher made tallying and tabulation himself. In the tallying process, there were challenges. When there is more than one author belonging to different, institutions the institutional affiliation of the first author is taken as the institution contributing the article. Likewise, when more than one author contributes one article and they belong to different countries the citizenship of the first author is taken. When authors of both sexes contribute article, the sex of the primary (first) author is taken.

The tabulated data is analyzed using simple statistical tolls such as frequencies and percentage and presented in the form of tables.

Discussion and Findings

Productivity of the Ethiopian Journal of Education

Until recently, the Ethiopian Journal of Education (EJE) has been the only journal serving as platform for research-based communication on educational issues. In the eleven years covered by this study (2007-2016), the journal has published 98 research articles. The journal was publishing two issues per year with four or five articles per issue. This indicates over the eleven years, there is no change in the number of issues and number of articles published on each issue. This trend has continued for many years. With the proliferation of higher education institutions and increase in the number of PhD programs, publishing two issues per year and four or five articles per issue may not be enough. Thus, it may be appropriate time to consider increasing in the number of issues per year and the number of articles published on each issue. Many internationally recognized journals publish relatively greater number of articles. For example, the Journal of Research in Childhood Education, which is published by Taylor and Francis Group, publishes eight articles per issue. Similarly, the one of the reputed journals in Ethiopia, Ethiopian Journal of Health Development, publish nine journals per issue.

Table 1: Productivity of the Ethiopian Journal of Education

| Year | Volume | No | Number of articles | Review or commentary |
|--------------|--------|----|--------------------|----------------------|
| 2006 | 26 | 1 | 4 | |
| | | 2 | 4 | |
| 2007 | 27 | 1 | 4 | |
| | | 2 | 4 | |
| 2008 | 28 | 1 | 5 | |
| | | 2 | 5 | |
| 2009 | 29 | 1 | 5 | |
| | | 2 | 5 | |
| 2010 | 30 | 1 | 4 | |
| | | 2 | 4 | |
| 2011 | 31 | 1 | 4 | |
| | | 2 | 5 | 1 review |
| 2012 | 32 | 1 | 5 | |
| | | 2 | 4 | |
| 2013 | 33 | 1 | 5 | |
| | | 2 | 4 | 1 review |
| 2014 | 34 | 1 | 4 | |
| | | 2 | 5 | |
| 2015 | 35 | 1 | 4 | 1 commentary |
| | | 2 | 5 | |
| 2016 | 36 | 1 | 5 | |
| | | 2 | 4 | 1 review |
| Total | | | 98 | |

Characteristics of Authors

Looking in to the characteristics of authors contributing to the journal is another important focus of the bibliometric study. The researcher has tried to look at various aspects of author characteristics. Such as gender, type of institutions they are working, academic rank, areas of training, country etc.

The data revealed that only seven female researchers have contributed articles as first authors, which is 7.14 percent of the total number of articles (98) published in 11 years. When we look at the gender of all

authors, contributing research article without considering whether they are first author or not only 12 researchers, which is 12.24 percent, are female researchers. Thus, educational research in Ethiopia is still male dominated endeavor. Likewise, 18 years back Amare (2000) has reported that of the 123 articles he analyzed women exclusively published only four articles. He further indicated that educational research in Ethiopia is a male dominated activity. Tesfaye (2011) seven years back also did research on the same issue and reported the contribution of female researchers is low, contributing seven articles (7.8 percent) of the total number of articles (90) he has studied. Hence, he pointed out the contribution of female researchers in educational research in Ethiopia is still low. The reasons for this are beyond the scope of this research. Other interested researchers can conduct research and inform us the social, academic and other reasons contributing for the low visibility of women researchers.

The type of institutions the researchers are employed (working) is an important indicator to look at who the researchers are. As can be observed from the table 2, 97.95 percent of the articles are contributed by academics working at educational institutions. The contribution of practitioners working at the different levels of the education system from the Ministry of Education down to the woreda level is null. Likewise, the contribution of professional associations, civil societies, and research institutes outside universities is almost null. Kumar (2014) made bibliometric study of one journal called Library Herald Journal. In his study, he has looked at the contribution of academics and people engaged in nonacademic activities and found out that the contribution of government departments is high with 21.05 percent. Besides, he found out that the contribution of societies (professional associations and civil societies) is also high contributing 20.17 percent and the contribution of research institutes are also significant with 21.05 percent. Then the question is how we can fully understand about the education system of the country if there is no interaction between academics and practitioners? What strategies can we develop to

invigorate these professionals outside the academics? The academic rank of the researchers is another issue investigated in this study.

The study revealed that about 40.81 percent of the articles are contributed by academics whose academic rank is assistant professor followed by researchers with the rank of lecturer accounting for 28.57 percent. This finding is similar with the report by Tesfaye (2011) which he has reported academics with the academic rank of assistant professor are the major contributors for the journal contributing 40 articles (44.4 percent) followed by lecturers contributing 31 articles (34.4 percent). The question is why are the academics with the two ranks contributing about 70 percent of the articles? Why are the associate professors and the professors not visible? The other issue worth mentioning here is the contribution of PhD scholars to the research productivity of the Journal. During the period covered by the study, (2006-2016) three PhD scholars have published their research. The various departments of the College of Education have been offering PhD level training since 2008/2009 and significant number has graduated from each department. Then the question is where is the contribution of the PhD program and the scholars in improving research productivity of the journal and the country? This is another issue, which need further study.

One of the measures of quality of journal is its international visibility. Contribution by internationally diversified authors in the field to the journal indicates its reputability as channel of communication. The contribution of foreign authors to the Ethiopian Journal of Education is very low, in eleven years only four articles are contributed by foreign authors. This goes with the findings by Amare (2000) and Tesfaye (2011) the journal has lower international acceptance. Besides, it is good indication that research collaborations between Ethiopian and foreign academics are weak.

One trend, which was investigated by this research, is the area of training of authors. Based on primary authors' last degree, the analysis

has shown that most of the authors publishing their research on the journal have education background which accounts for about 71.42 percent. Second to education, researchers whose training is in the languages are the big contributors, which account for 17.34 percent. The contribution by researchers whose training is education and language areas combined is about 88 percent. Thus, the journal is mainly serving two areas. The question, which we may ask here, is, is this trend an indicator of healthy trend of the journal? How does this fit with the global trend of the proliferation of the ideas of multi and cross-disciplinary approach?

Table 2: Characteristics of Authors

| Author attributes | Variable | Number | percentage | Rank |
|---|-------------------------------|------------|------------|------|
| Gender of first authors | Male | 91 | 92.85 | 1 |
| | Female | 7 | 7.14 | 2 |
| | Total | 98 | 100 | |
| Gender of all authors and primary authors | Male | 137 | 87.76 | 1 |
| | Female | 12 | 12.24 | 2 |
| | Total | 149 | 100 | |
| Type of institution of primary authors | Academics | 96 | 97.95 | 1 |
| | Professionals (nonacademic) | 2 | 2.05 | 2 |
| | Total | 98 | | |
| Academic rank of primary authors | Professor | 4 | 4.08 | 4 |
| | Associate professor | 15 | 15.30 | 3 |
| | Assistant professor | 40 | 40.81 | 1 |
| | Lecturer | 28 | 28.57 | 2 |
| | Assistant lecturer | 0 | 0 | 7 |
| | PhD scholar | 3 | 3.06 | 5 |
| | Non academic | 2 | 2.04 | 6 |
| | Rank not known | 6 | 6.12 | |
| Total | 98 | 100 | | |
| Country of authors based on primary author | Ethiopia | 94 | 95.91 | 1 |
| | Nigeria | 1 | 1.02 | 3 |
| | Lesotho | 1 | 1.02 | 3 |
| | USA | 2 | 2.04 | 2 |
| | Total | 98 | 100 | |
| Area of training of authors based on primary authors' last degree | Education | 70 | 71.42 | 1 |
| | Languages | 17 | 17.34 | 2 |
| | Development studies/geography | 1 | 1.02 | 5 |
| | Computer science | 3 | 3.06 | 3 |
| | Mathematics | 2 | 2.04 | 4 |
| | Economics | 1 | 1.02 | 5 |
| | Area of training unknown | 4 | 4.08 | |
| | Total | 98 | 100 | |

Institutional Affiliation of Authors and Types of Institutions

One of the important issues, which this research tried to look, is identifying the institutional affiliation of authors. The analysis has revealed that researchers affiliated to about 21 institutions have published their research in the journal in the eleven years covered by this study. The analysis has revealed that researchers from Addis Ababa University have contributed 41 articles (41.83 percent) of the total 98 articles. Next to Addis Ababa University, researchers from Bahirdar University are the most productive contributing 20 articles (20.40 percent). The researchers from the two universities have contributed above 72 percent of the total articles published in the period covered by this study. This finding is in line with what was reported seven years back by Tesfaye (2011) researchers from Addis Ababa and Bahirdar universities are the major contributors accounting for 70.3 percent. This time there are significant numbers of universities, which have colleges of education; however, still they are not visible on the publications of the Ethiopian journal of education. Possible explanations for the domination of the journal by contributions from the two universities may be historical. Addis Ababa and Bahirdar Universities had faculties of education for over four decades. However, this continued trend may need further study.

The contribution of researchers from foreign countries is also very low; which depicts the low recognition of the journal as important means of communication in the field of educational research. This can be taken as an area of research where research can be conducted in order find out how to gain and boost an international recognition of the journal so that it can attract international contributors.

Table 3: Institutional Affiliation of Authors and Types of Institutions

| S. No | Name of institution | Number of articles | Percentage | Rank |
|--------------|---|--------------------|------------|------|
| 1 | Addis Ababa University | 41 | 41.83 | 1 |
| 2 | Bahir Dar University | 20 | 20.40 | 2 |
| 3 | Hawasa University | 6 | 6.12 | 3 |
| 4 | Adama University | 4 | 4.08 | 4 |
| 5 | Mekele University | 4 | 4.08 | 4 |
| 6 | Assela College of Teacher Education | 3 | 3.06 | 5 |
| 7 | Jima University | 2 | 2.04 | 6 |
| 8 | Dilla University | 2 | 2.04 | 6 |
| 9 | Mekele Institute of Technology | 2 | 2.04 | 6 |
| 10 | Hawasa College of Teacher Education | 1 | 1.02 | 7 |
| 11 | Madawalabu University | 1 | 1.02 | 7 |
| 12 | Forum for Social Sciences | 1 | 1.02 | 7 |
| 13 | Ethiopian Civil Service College | 1 | 1.02 | 7 |
| 14 | Debreworkos University | 1 | 1.02 | 7 |
| 15 | National University of Lesotho | 1 | 1.02 | 7 |
| 16 | University of Lagos, Akoka, Nigeria | 1 | 1.02 | 7 |
| 17 | Addis Ababa Science and Technology University | 1 | 1.02 | 7 |
| 18 | Wollo University | 1 | 1.02 | 7 |
| 19 | Delaware Technical Community College | 1 | 1.02 | 7 |
| 20 | University of Washington | 1 | 1.02 | 7 |
| 21 | Haromaya University | 1 | 1.02 | 7 |
| 22 | Institutional affiliation of authors Unknown | 2 | 2.04 | |
| Total | | 98 | 100 | |

Most Productive Researchers (Published as Solo or First Author)

One of interest areas of bibliometric studies is identifying and ranking most productive authors in a journal. This research has tried to find out the most productive researchers in the eleven years period covered by this study (2006-2016). The criteria are simply counting the number of

publications in the name of the author published either as solo author or serving as first author. Joint publications where are not considered. Those who have three or more articles are considers as most productive authors. The result as revealed at table 5, shows the most productive researcher is (Tesfaye from Hawasa University) followed by (Amera from Bahirdar University). As indicated above, the most productive researchers are from the two top article-contributing universities Addis Ababa University and Bahirdar University. What makes a productive researcher is an issue again here which calls for further study.

Table 4: Most Productive Researchers

| No | Name | Institution | Number of articles | Rank |
|----|----------------|---|--------------------|------|
| 1 | Reda Darege | Bahir Dar University | 3 | 3 |
| 2 | Dawit Mekonen | Previously Bahir Dar University now Addis Ababa University | 3 | 3 |
| 3 | Alemu Hailu | Addis Ababa University | 3 | 3 |
| 4 | Ambisa Kenea | Addis Ababa University | 3 | 3 |
| 5 | Amera Seifu | Bahir Dar University | 4 | 2 |
| 6 | Belay Tefera | Addis Ababa University | 3 | 3 |
| 7 | Solomon Araya | Addis Ababa University | 3 | 3 |
| 8 | Tesfaye Semela | Hawasa University | 5 | 1 |

Co-Authorship Patterns

Research collaboration (which is to mean co authorship in this context) is referring to the practice by which researchers work together to achieve the goal of ending up with research result. The issue of research collaboration has been one of the important issues in many bibliometric researches. For example, Price and Beaver (1963) made one of the pioneering bibliometric studies on research collaboration and observed the trend of increase in collaborative research. Many researchers have pointed out the benefits of collaborative research. For example, researchers such Fortunato et al. (2018) Jones, Wuchty

and Uzzi (2008), have reported that significant advances in scientific publications in natural and social sciences are results of collaborative research. They have also pointed out that the works of teams are cited more by other researchers and have greater scientific impact than the work by individual researcher.

Although research collaboration has such benefits it is not without limitation. As indicated by Basner (2013) and Hall (2008) collaborative research can be more time and labor consuming than individual research. Besides identifying the benefits of research collaboration, measuring and quantifying research collaboration has been research issue for decades. Thus, different researches have come up with different research collaboration measures. Rousseau (2011) for example has listed the following know measures of research collaboration: Collaborative Index (CI) which measures average number of authors per paper, Degree of Collaboration (Subramanyam index) which measures the proportion of multiple authored papers, collaborative coefficient (CC) which distinguishes between papers of different number authors.

The focus of this paper is to look at the degree of research collaboration by simply making count of articles contributed by single authors and articles contributed by more than one author. The researcher has employed the Degree of Collaboration (Subramanyam index) as measure of degree of collaboration with the understanding that this measure has some known limitations. But it can show to some extent the degree of collaboration. Here one point which needs to be clear is the average number of authors per paper or making distinctions among papers with different number of authors is not the focus of this paper. Such issues can be taken as research issues by other researchers.

Simply by tabulating and counting the number of articles contributed by single authors and those with more than one author depicts that the majority of the articles (61.22 percent) are results of sole authorship

and 30.61 percent are results of joint authorship involving two researchers. Out of the 98 articles used for this study only 8 articles are the results of joint authorship involving more than two researchers. However, compared with findings revealed by previous researches such as Tesfaye (2011) the trend in local joint research seems showing improvement. The study by Tesfaye (2011) has revealed the numbers of articles that are the results of joint research were 12 (13.3 percent). The current research has revealed the articles, which are results of collaboration research has grown up to 38 (nearly 39 percent). There is improvement compared to what was reported by Tesfaye. However, testing the degree of collaboration using the Subramanyam formula may give relatively better picture of the degree of collaboration. To look at the degree of author collaboration Subramanyam (1983) formula works as follows. This formula is $C = \frac{NM}{NM+NS}$, where C = Degree of collaboration; NM = Number of multiple authored papers; NS = Number of single authored papers.

Number of multiple authored articles =38

Number of single authored articles = 60

$C = \frac{38}{38+60}$ which is equal to .39

Perfect degree of collaboration is 1, however, the calculated degree of collaboration as can be seen from the data is .39. This is an indication of low degree of collaboration is still prevailing in the Ethiopian educational research endeavor.

However, why has collaboration remained low is an issue to explore. Besides, what is worrisome is collaborative research between Ethiopian researchers and researchers from outside Ethiopia is weak. Only two articles are published in collaboration between Ethiopia researchers and researchers outside Ethiopia. This is the indicator of the low networking between Ethiopian and researchers in other countries. This low networking is another issue, which needs attention.

Table 5: Co-Authorship Patterns

| Number of authors per article | Number | Percentage |
|--------------------------------------|---------------|-------------------|
| 1 | 60 | 61.22 |
| 2 | 30 | 30.61 |
| 3 | 6 | 6.12 |
| 4 | 1 | 1.02 |
| 5 | 0 | 0 |
| 6 | 0 | 0 |
| 7 | 1 | 1.02 |
| Total | 98 | 100 |

Distribution of Articles by Level of Education They Focus

The Ethiopian Journal of Education accepts research manuscripts in education and related fields regardless of the level of education. However, the analysis of the 98 articles used for this study has displayed that 30.61 percent of the research is done at the level of the undergraduate, which means higher education (specialty undergraduate level) is the most researched level. This finding confirms with the study by Amare (2000), which he has reported similar result. However, unlike to the study by Amare, which has shown secondary education as the second most researched level, this study has revealed that primary education, is the second most researched level. Some possible reasons for the change of focus could be the many reforms introduced at primary level, or the focus for financial support by donors is primary education. Other interesting trend is the growth on research in preprimary education. In the study time (1967-2000) covered by Amare only three research articles on preprimary education were reported. However, in the last eleven years covered by this study, six articles on preprimary education were published. This coincides with the recent attention given to preprimary level by the government.

As can be seen from table 7, research beyond undergraduate level is minimal. In the last 18 years there was huge proliferation of programs

both at the masters and doctoral levels. However, the number of research articles published beyond first degree is low. Only two articles have appeared on the journal in eleven years. Thus, the issues related to the masters and doctoral programs levels do not have the attention of researchers. The other neglected area is adult education, in the whole period of eleven years only one article related to adult education is published.

Table 6: Distribution of Articles by Level of Education They Focus

| Level | Number | Percent | Rank |
|--------------------------------------|---------------|----------------|-------------|
| Preschool | 6 | 6.12 | 4 |
| Primary | 25 | 25.5 | 2 |
| Secondary (general plus preparatory) | 17 | 17.34 | 3 |
| Undergraduate | 30 | 30.61 | 1 |
| Post graduate (MA/ Msc) | 2 | 3.06 | 5 |
| Doctoral | 0 | 0 | |
| Adult | 1 | 1.02 | 6 |
| General unclassified | 17 | 17.34 | |
| Total | 98 | 100 | |

Education Issues (Contents) Covered

One of the important benefits of bibliometric study is, it helps to show the trend of the journal in terms of the themes (areas) it covered and major changes occurred. As can be seen from table 8, educational assessment, testing, and educational psychology dominates the Ethiopian Journal of Education with 30 articles (31.61 percent). This finding agrees with the findings of Amare and Tesfaye. They have reported that most of the research articles published at the Ethiopian Journal of Education is related to educational psychology and assessment. This trend has been continuing for decade and thus, the question is why this pattern is continuing? Is that related with the domination of quantitative approach? Could there be other reasons related with the composition of the editorial board and the editorial

policy and guidelines? Could it be the result of the initiation and quality of researchers trained in educational psychology?

The second highly researched theme (area) as reflected by the number of articles published at Ethiopian journal of education is teaching methods. This also supports the findings by Amare. However, the findings by Tesfaye (2011) is somehow different, language in education the second most researched area. Anyway, still the top areas covered by the journal in their order of coverage are educational psychology and assessment, teaching methods and language in education. Nevertheless, there are some areas, which even no single article is published. Some of these areas are peace education, creativity and entrepreneurship education, indigenous knowledge system, teaching in the professions other than education such as engineering, medicine, agriculture, law, nursing etc.

Table 7: Education Issues (Contents) Covered

| Category/ subfield | Number | Percent | Rank |
|--|-----------|---------|------|
| 1. Curriculum | 4 | 4.08 | 5 |
| 2. Didactics/teaching methods | 13 | 13.26 | 2 |
| 3. Distance education methodology | 1 | 1.02 | 8 |
| 4. Educational assessment and testing and educational psychology | 30 | 30.61 | 1 |
| 5. Educational evaluation and research | 3 | 3.06 | 6 |
| 6. Teacher education and development | 4 | 4.08 | 5 |
| 7. Educational leadership and management | 7 | 7.1 | 4 |
| 8. Environmental education | 3 | 3.06 | 6 |
| 9. Higher education staff development | 1 | 1.02 | 8 |
| 10. Multicultural education | 3 | 3.06 | 6 |
| 11. Special needs education | 3 | 3.06 | 6 |
| 12. Educational finance | 1 | 1.02 | 8 |
| 13. Education of girls and women | 2 | 2.04 | 7 |
| 14. Adult education | 1 | 1.02 | 8 |
| 15. Civics and ethical education | 2 | 2.04 | 7 |
| 16. Educational media and technology | 1 | 1.02 | 8 |
| 17. Internalization | 0 | | |
| 18. Peace education | 0 | | |
| 19. Creativity and entrepreneurship | 0 | | |
| 20. Indigenous knowledge system | 0 | | |
| 21. Language in education | 10 | 10.20 | 3 |
| 22. Teaching in the professions other than education (such as engineering, medicine, agriculture, nursing, law) | 0 | | |
| 23. Education not elsewhere classified | 2 | 2.04 | 7 |
| Total | 98 | | |

Research Approaches

According to Creswell (2014) as a result of the differences on epistemological stances there are three research approaches each with its own designs and methods. Bibliometric study of the journal helps to find out the research approach (epistemological orientation) of the journal. This research has tried to categorize the articles in to the three approaches. The finding has shown quantitative approach ranks at the top with 72 articles (73.46 percent) followed by qualitative research with 15 articles (15.3 percent). Thus, the finding indicates that positivist paradigm (which promotes the idea of single truth) dominates the Ethiopian journal of education. This is good indication the Ethiopian educational research is dominated by the hegemony of positivist paradigm. However, it is also good start that qualitative approach is slowly getting recognition by Ethiopian researchers.

Table 8: Research Approaches

| Approach | Number | Percent | Rank |
|-----------------------|---------------|----------------|-------------|
| Qualitative approach | 15 | 15.3 | 2 |
| Quantitative approach | 72 | 73.46 | 1 |
| Mixed approach | 11 | 11.24 | 3 |
| Total | 98 | 100 | |

Research Designs

The analysis of the 98 articles has revealed 38 articles (38.77 percent) are descriptive research design type followed by correlational research design type with 19 articles (19.38 percent). The two designs combined (descriptive and correlational) account above 58 percent. However, as can be observed from table 11 limited qualitative research designs are employed by researchers. Furthermore, what is more interesting is no single articles published using qualitative research designs such as ethnography, phenomenology, heuristic, grounded theory etc. This unveils the Ethiopian Journal of Education is largely dominated by

quantitative approach and associated designs. Thus, the Ethiopian journal of education lacks diversity in research orientation.

Table 9: Research Designs

| No. | Design | Number | Percent | Rank |
|--------------|---|-----------|------------|------|
| 1 | Action research (qualitative) | 1 | 1.02 | 7 |
| 2 | Case study (qualitative) | 4 | 4.08 | 5 |
| 3 | Ethnographies | 0 | 0 | |
| 4 | Evaluation (qualitative) | 6 | 6.12 | 4 |
| 5 | Grounded theory | 0 | 0 | |
| 6 | Heuristics | 0 | 0 | |
| 7 | Historical research | 1 | 1.02 | 7 |
| 8 | Narrative research | 1 | 1.02 | 7 |
| 9 | Phenomenology | 0 | 0 | |
| 10 | Experiments and quasi-experiments | 3 | 3.06 | 6 |
| 11 | Action research (quantitative) | 0 | 0 | |
| 12 | Evaluation (quantitative) | 10 | 10.20 | 3 |
| 13 | Descriptive (all type) | 38 | 38.77 | 1 |
| 14 | Correlational | 19 | 19.38 | 2 |
| 15 | Convergent (mixed) | 6 | 6.12 | 4 |
| 16 | Exploratory sequential (mixed) | 1 | 1.02 | 7 |
| 17 | Explanatory sequential (mixed) | 1 | 1.02 | 7 |
| 18 | Transformative, embedded, or multipurpose (mixed) | 0 | 0 | |
| 19 | Not classified | 7 | 7.14 | |
| Total | | 98 | 100 | |

Number of Pages per Article

As research publication in journals is means of communication, measuring the number of pages gives some indications of the level of communication and quality of the journal. Ahmed et al (2016) has stated that research articles, which are longer, are more likely to be cited more by other researchers than articles, which are shorter. Thus, number of pages of an article is an issue of investigation in bibliometric study. As can be seen from table 12 there is big gap in the number of pages of the published articles. One purpose of looking in to the

number of pages is, it help us to look at changes occurred over time. As can be seen from table 12, the Ethiopian Journal of Education published in the last 11 years, has shown change in terms of the number of pages of the articles published? There are many articles having over 30 pages and even some articles have 50 pages and beyond. There is increase in number of pages starting from 2011. Especially the changes in the number of pages starting from 2015 are immense. Now, the question is why increasing in the number of pages. This needs separate research by itself. However, one explanation could be the rise of research articles with qualitative research orientation and the abundance and easy access of literature on many issues on the net. The Ethiopian journal of education on its guideline for researchers has indicated that acceptable maximum number of pages of research article is 30 pages. However, many articles beyond this limit are accepted and published. Thus, the question is how many pages should be research article? Is it appropriate to put page limit? Now it may be time to reconsider the guideline of the journal.

Table 10: Number of Pages per Article

| Year | Volume | No | Number of articles | No. of pages per issue | Average number of pages per issue | Average number of pages per article |
|--------------|--------|----|--------------------|------------------------|-----------------------------------|-------------------------------------|
| 2006 | 26 | 1 | 4 | 98 | 102 | 24.5 |
| | | 2 | 4 | 106 | | 26.5 |
| 2007 | 27 | 1 | 4 | 86 | 101 | 21.5 |
| | | 2 | 4 | 116 | | 29 |
| 2008 | 28 | 1 | 5 | 120 | 125 | 24 |
| | | 2 | 5 | 130 | | 26 |
| 2009 | 29 | 1 | 5 | 138 | 143 | 27.6 |
| | | 2 | 5 | 148 | | 29.6 |
| 2010 | 30 | 1 | 4 | 94 | 107 | 23.5 |
| | | 2 | 4 | 120 | | 30 |
| 2011 | 31 | 1 | 4 | 118 | 144 | 29.5 |
| | | 2 | 5 | 170 | | 34 |
| 2012 | 32 | 1 | 5 | 164 | 159 | 32.8 |
| | | 2 | 4 | 154 | | 38.5 |
| 2013 | 33 | 1 | 5 | 132 | 134 | 26.4 |
| | | 2 | 4 | 136 | | 34 |
| 2014 | 34 | 1 | 4 | 140 | 141.5 | 35 |
| | | 2 | 5 | 143 | | 28.6 |
| 2015 | 35 | 1 | 4 | 199 | 195 | 49.75 |
| | | 2 | 5 | 191 | | 38.2 |
| 2016 | 36 | 1 | 5 | 187 | 187.5 | 37.4 |
| | | 2 | 4 | 170 | | 42.5 |
| Total | | | 98 | | | |

Page Range of the Articles

As can be seen from table 13 there is big gap in the number of pages of the published articles. There is one article with only 10 pages. The 44.89 percent of the articles have pages between the ranges of 21-30. On the other hand, 33.67 percent of the articles have pages between the ranges of 31-40. There are some articles more than five times bigger than this article with small number of pages. 55 percent of the articles are within the page limit of the journal indicated on the

guideline. However, the remaining about 45 percent of the articles has pages beyond the limit of 30 pages.

Table 11: Page Range of the Articles

| Categories | Frequency | Percentage |
|--------------------------|-----------|------------|
| Less than or equal to 10 | 1 | 1.02 |
| 11-20 | 10 | 10.20 |
| 21 – 30 | 44 | 44.89 |
| 31-40 | 33 | 33.67 |
| 41-50 | 7 | 7.14 |
| 51-60 | 3 | 3.06 |
| Total | 98 | 100 |

Number of References per Article

Analysis of the number and type of references is one areas of research in bibliometric research. The analysis can help us to find out how recent the consulted references are; the most cited publication and the use of seminal works in the area. Number of references is also good indicators of quality of journal. Ahmed et al (2016) indicated that the more the number references article has used the more it will be cited by others. More citation by others could be indicator of the quality of the journal.

As can be seen from table 14 there is wider gap of the average number of references per article, per issue and per volume. Average number of references per article varies between 16.5 and 60. Similarly, the average number of references per volume varies between 19.12 (2016) and 55.22 (2015). As can be seen from table 14, starting from 2011 there is visible trend in increase in the number of references consulted by researcher in their research. This is may be taken as good healthy indication that the researchers have made good review of literature while wring their research. This trend may have impact on the quality of the research articles published.

Table 12. Number of References per Article

| Year | Vol. | No. | No. of articles | Average no. of references per article | No. of references per issue | No. of references/vol. | Average no. of references per vol. |
|------|------|-----|-----------------|---------------------------------------|-----------------------------|------------------------|------------------------------------|
| 2006 | 26 | 1 | 4 | 22 | 88 | 153 | 19.12 |
| | | 2 | 4 | 16.25 | 65 | | |
| 2007 | 27 | 1 | 4 | 22.75 | 91 | 222 | 27.75 |
| | | 2 | 4 | 32.75 | 131 | | |
| 2008 | 28 | 1 | 5 | 27.2 | 136 | 271 | 27.1 |
| | | 2 | 5 | 27 | 135 | | |
| 2009 | 29 | 1 | 5 | 20.8 | 104 | 227 | 22.7 |
| | | 2 | 5 | 24.6 | 123 | | |
| 2010 | 30 | 1 | 4 | 25.5 | 102 | 208 | 26 |
| | | 2 | 4 | 26.5 | 106 | | |
| 2011 | 31 | 1 | 4 | 47.25 | 189 | 319 | 35.44 |
| | | 2 | 5 | 26 | 130 | | |
| 2012 | 32 | 1 | 5 | 48.2 | 241 | 408 | 45.33 |
| | | 2 | 4 | 41.75 | 167 | | |
| 2013 | 33 | 1 | 5 | 33.8 | 169 | 287 | 31.88 |
| | | 2 | 4 | 29.5 | 118 | | |
| 2014 | 34 | 1 | 4 | 34.75 | 139 | 254 | 28.22 |
| | | 2 | 5 | 23 | 115 | | |
| 2015 | 35 | 1 | 4 | 60 | 240 | 497 | 55.22 |
| | | 2 | 5 | 51.4 | 257 | | |
| 2016 | 36 | 1 | 5 | 38.6 | 193 | 359 | 39.88 |
| | | 2 | 4 | 41.5 | 166 | | |

Page Range of the References

As can be seen from table 15 there is big difference in terms of number of pages of the articles accepted and published by the journal. There are articles with equal or less than ten references and articles with above 90 references. As can be seen from table 15 about 22 percent of the articles have references between the ranges of 11-20 and 32.65 percent of the articles have references between the ranges of 21-30. On the other hand, there are some articles which have references above 50. Why do we have such big gap is in the number of references consulted by researchers. Does it have any relationship with research approach or research or quality of the research paper?

Table 13 Number of References per Article

| Categories | Frequency | Percentage |
|--------------------------|------------------|-------------------|
| Less than or equal to 10 | 2 | 2.04 |
| 11-20 | 22 | 22.44 |
| 21 - 30 | 32 | 32.65 |
| 31-40 | 20 | 20.40 |
| 41-50 | 13 | 13.26 |
| 51-60 | 5 | 5.10 |
| 61-70 | 1 | 1.02 |
| 71-80 | 1 | 1.02 |
| 81-90 | 1 | 1.02 |
| 91-100 | 1 | 1.02 |
| Total | 98 | |

Major Findings

The main purpose of this research is to investigate the nature of research published on the Ethiopian Journal of Education to show portrait of the journal. It will also try to reveal the dynamics of the journal in terms of the many variables identified as measures (indicators).

The data analysis has shown that the Ethiopian Journal of Education was publishing two issues per year each issue with four or five articles. Over the eleven years' time covered by this study 98 articles were published. This study revealed there is no change in terms of the number of issues or number of articles published in the life of the journal. Ethiopia has got over 40 public universities above 35 teacher education colleges, many technical and vocational education colleges and private higher education institutions. However, although we observe such huge expansion, research productivity of the county is still low in general. One possible reason could be the limited opportunity to publish because of limited number of journal outlets. Thus, it is time for the Ethiopian Journal of Education as a pioneering journal in the field of education to upgrade its number of issues and the number of articles per issue.

The visibility of female researchers is very low on the Ethiopian Journal of Education. Amare (2000) reported this 18 year back and Tesfaye (2011) did the same seven years back. Both researchers showed that educational research in Ethiopia is male dominated engagement and it has continued even with the significant increase of female academic staff with the expansion of higher education in Ethiopia.

The contribution of research articles and visibility of professionals outside of academia is very low. This may indicate the lack of collaboration between the university academia and the practitioners in the field of education. As it is not possible to clamp with single hand, one possible strategy to solve the chronic problem of education in Ethiopian may be through collaboration between academia and practitioners. They have to invest their time, energy and resources to conduct joint research, which could help in solving the many problems of education in the country through research informed decision.

Analysis of the academic rank of the researchers has shown that academics with rank of assistant professor and lecturer are the most productive researchers. This may be corresponding with the exiting staff profile of our universities that the majority of staffs are at the rank of assistant professor and lecturer. This is true for the top performing two universities (Addis Ababa and Bahirdar universities); most of the staffs of the colleges of education are at the rank of assistant professor.

One of the main purposes of PhD level training and education is producing researchers. Some four universities in Ethiopia have been offering PhD level of training in various fields of education. Especially Addis Ababa University has more than five PhD programs in various subfields. However, the contribution of the Ph.D. scholars is very low.

One clear fact observed from the data is the journal has lower international visibility/ acceptance. The contribution of international researchers is negligible. Besides, research collaborations among

Ethiopian researchers themselves and collaboration between foreign academics and Ethiopians are weak. The good indicator is the degree of research collaboration as measured by the Subramanyam index is low, around .39.

The various indicators have shown that Ethiopian Journal of Education is less inclusive. It is dominated by the positivist orientation, qualitative approach and associated designs are less visible. Most of the research articles are on undergraduate university education other levels for example graduate education is covered less. Besides, most of the research articles are contributed by two universities. In terms of the research issues educational assessment, testing, and educational psychology is the most researched area. However, there are issues such as peace education even a single research article not published.

Conclusion and Recommendations

The Ethiopian Journal of Education is the pioneering journal in the field of education. However, the journal has continued with the list of limitations indicated by other researchers earlier. Its inclusiveness with research approaches and designs and research areas covered is still weak. In addition, research collaborations and international reputation are not to the desired level. With this, it is time to upgrade the journal. To achieve this, the following recommendations may help

- It may be appropriate to consider increasing in the number of issues per year and the number of articles published on each issue.
- The journal may initiate study on the obstacles for publishing by female staff and based on the research devise system that encourage female researchers
- Devote special issue for some areas not covered until this time such as peace education
- Arrange special orientation for PhD scholars and their advisors on the process and merits of publishing

- Consider devoting publishing special issues that publish articles that are results of interpretative approach
- Award highly productive researchers with certain time interval (maybe every five years) who published at least one article every year)
- Encourage practitioners in the line ministry and beyond to publish
- Devise marketing and popularization system of the journal to attract international contributors
- Bench mark international and local networking and collaboration in research and publishing and provide orientation for the university staff and PhD scholars

Limitations and Directions for the Future Study

This study has covered only research articles; reviews and commentaries are not considered. In the analysis of the most productive researcher, articles of the researchers published on this journal as sole researcher or first authors are considered. Publications on other journals and contributions other than first or sole author are not considered. The research mainly focuses on outcome; this paper does not address impact (such as citation) of the research articles. Besides this research, covers only the articles published between 2006 and 2016.

Future Research

To get comprehensive picture about the journal another research on the impact of the journal by applying indicators such as citation, h-index, the g- index, the R-index and the j-index and other methods may be useful. Moreover, interested researchers can replicate this research to validate the findings and the conclusion reached. Furthermore, comparative bibliometric research on the journals on education in Ethiopia such as the Ethiopian journal of education, Bahirdar Journal of

Education and Ethiopian Journal of Education and Sciences published by Jimma University can give full picture on educational research in Ethiopia.

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