

Ecocriticism, Literature and the Age of Industry 4.0

Adeoye Ambrose Babatunde THOMPSON

Department of Politics and International Relations, Lead City University, Ibadan
aathomps2013@yahoo.com, thompsonadeoye8@gmail.com, +2348133697562

Abstract

This paper examines the issues, challenges and prospects of the inextricable linkages in ecocriticism, literature, and the fourth industrial revolution. It explains the policy involved in marrying and connecting the study of the environment/ecology in a given milieu, concerning scholastic works that portray the pros and cons. Using apt and contemporary technological advancements to foster societal complexities in simple direct ways, and, the displacements and disjointments they cause by creating societal awareness of the field activities involved with adequate actions plans needed to mitigate them in society. This paper propounds that the study of ecocriticism, literature and the fourth industrial revolutions needs governmental, non-governmental and international non-governmental organisations review mechanisms of: contents, contexts, and co-constructionists' documents. With due uses of processes, programmes, and projects assessments impacts. Hence, this paper uses: social conflict theory, needs theory and globalizations theory to help grasp the issues, challenges and prospects involved in the study of ecocriticism, literature and the age of the fourth industrial revolutions.

Keywords: Ecocriticisms, Literature, and the Fourth Industrial Revolutions

Introduction

"Ecocriticism, Literature and the Age of Industry 4.0" is an inextricable part of the ever-increasing changing revolution of abstract/critical thinking and real-life application dynamics. The field falls into what in the academic community refers to as Basic and Applied Sciences. Ecocriticism is the study of the symbiotic relationship between literature and the physical environment. Ecocriticism is an environment advocacy approach, a literary tool, an abstract reading, and critical thinking, which is designed and configured to analyze the text's orientation to the world it seeks to imagine. Ecocriticism also includes the world which considers intangible and tangible contents, and contexts and constructs that affect orientations whether imagined or real (See Shola Ogunbayo's "Terror in the Shadow archetype: A reading of Ahmed Yerima" in *Journal of the Institute of African Studies* University of Ibadan, Ibadan, pp 67-77).

From a relational perspective, feminist criticism interrogates language, Literature, and living conditions of the womenfolk in its entirety (of what?) from a gender-conscious perspective. Similarly, the Marxist perspective shows the mode of production, economic class struggles, and conflict theorizing to reading texts in literature. Ecocriticism on its part views literary studies from an earth-centred approach (reference). Ecocriticism is an intentionally and internationally broad approach that is known by varying designations including such appellations as: 'green studies', 'Eco-poetics', 'Environmental literary criticism', and 'green politics. It is concerned and interested with the applications of the roles of criticism and ecology to literature (see Hayatudeen, Ismail, and Joda, pp 66-97).

Arguably, the father of Ecocriticism was Joseph Meeker who coined the idea called "Literary Ecology" in his work: 'The comedy of survival' Studies in literary Ecology in 1972. However, the term 'Ecocriticism' was coined in 1978 by William Rueckert in his essay, 'Literature and Ecology: An experiment in Ecocriticism' (see Cheryll Gloefelty in "The criticism reader: Landmarks in literary ecology. Harold Fromm ed. Pp 1-16) For Rueckert the

different types of Ecocriticism include: Pastoral; wilderness; and Ecofeminism. In earlier studies of ecocriticism this can be found majorly in British and American literatures.

While the subdivisions of ecocriticisms focuses on the dichotomy between the urban and rural lifestyles by idealizing of nature and rural lifestyles, the other aspect demonizing of urban lifestyles with its attendant consequences. Pueckhertin in his essay brings attention to the connection inherent in the physical environment and non-human beings- that is human and non-human worlds interacts. With adequate particularizations on the corrections of: SELF, SOCIETY, NATURE and TRUTH. This thrust for holistic livings is aptly encapsulated in the juridical saying that: "whosoever comes with equity should come with clean and open hands", with interpretatives for social justice, economic justice, and national rights at pragmatic levels of causing social harmony or social disorder. In tendering Mother Earth, the pragmatic school of thought is relevant here, with such simple pragmatic school of thought quotes as: "What works is what goes" and "If it is not broken don't fix it" the pragmatist educationist propounders like Charles Sanders Pierce, William James and John Dewey. However, the term "ecocriticism" was coined by by William Pueckhertin in 1978, in his essay work "Literature and ecology: An experiment in ecocriticism."

In due facts, the educational awareness of humanity and their environmental impact assessments, in terms of, how they both interact and affect each other in both positive and negative ways their production outcomes cannot be over-emphasized. For instance, using population as an example, as a pressure on nature's provisions for citizens. It is noted generally, that Nigerians are pro-natalist culturally (that is supporting many or more children), as against Europeans that are Anti-natalist (that is not supporting many or more children) in terms of philosophy of life. The impact of population activities on the environment cannot be overemphasized concerning environmental degradation, lack of resources to go around, and social well-being.

For instance, this population rise reality for Nigeria became noticeable with the instituting of some programs like: The World Population Plan of Action (WPPA) of 1974, The Lagos Plan of Action (LPA) of April 1980, The Monrovia Strategy and The Kilimanjaro programme of action adopted by The African Council of ministers in 1984 and The 1994 International conference on population and Development, that tried to measure Nigerian citizens Human Development Index as propounded by such authoritative institutions as the United Nations Organisation (UNO) and World Health Organisation (WHO). The Malthusian theory projections of population growing at geometric proportions as against food production maintaining an arithmetic production rate was not far from the truth.

In terms of population explosion and its negative impacts on the environment and the safeguarding of the Nigerian citizens Human Development Indices. The Nigerian National Population Policy of 1988 made these projections in its document that:

the protection of the health of mother and child , to reduce the proportion of Women who get married before the age of 18 years by 50 per cent by 1995 and by 80 per cent by the year 2000; to reduce the proportion of women bearing more than four children by 50 per cent by 1995 and 80 per by the year 2000; to Extend the average of family planning service to 50 per cent of women of childbearing age by 1995 and 80 per cent by year 2000; to reduce the number of children a woman is likely to have during her life time , now over 6, to 4 per woman by year 2000 and reduce the present rate of population growth from about 3.3 per cent per year to 2,5 per cent by 1995 and 2.0 percent by the year 2000 (Source: Federal Republic of Nigeria 1988:13-14).

Basically, Ecocriticism is the study of the nexus between literature and ecology from an interdisciplinary perspective (See Ikporukpo C.O.'s "Public-Private – Partnerships and Environmental security in developing countries" In *Journal of The Social Sciences* Vol 13. No.2 September 2015 pp 165-176) wherein researchers and scholars critique texts that depicts environmental concerns and how literature examines and treats the subject matter in question.

The subject matter of Ecocriticism which portrays nature in literary works took its root in the 1960s with the beginnings of the environmental movements and Green Peace movements fostered by Rachael Carson's "Silent Spring in 1962" (Adapted for the Internet from "The Legacy of Rachel Carson's Silent Spring produced by the National Historic Chemical Landmarks program of the American Chemical Society in 2012). But took its heights of momentums in the 1980s which signified the first wave and the second wave of activities in the 1990s and the third wave after the millennial just began in the 2000s AD, with the conferences on Climate change on an annual basis instituted. All of this was rooted in the 1972 Paris Conference on climate change when the first conference on climate change took place, as a basis for further future summits. recast and reference. The Buell's theory of Ecocriticism sums it up where non-fictional ecocritical aesthetics has double accountability; that is, in his words "it means that a text has a double accountability to both matter and discursive mediation." Buell interpreted to say that an ecocritic must be cognizance of the reductive nature of his/her nature in abstract thoughts and for academic dialectics (see Buell 1995: 93).

Ecocriticism is basically preoccupied with the applications of the roles in which criticism and ecology play in relations to literature and societal livings (reference). Ecocritism is characterized by the attempts at investigating environmental concerns as upheld by writers in literature. It also foreshadows nature and environmentalism literature works from an ecocritical panorama. It emphasizes greatly on the relevant factual writing of especially topographical materials such as travel writings, essays, memoirs, and typical of regional literature (see Hanafi in "University Systems in The Arab East: Publish globally and perish locally vs publish locally and perish globally." In current *Sociology. Journal of International Sociological Association*. Vol 59. No. 3. May 2011. pp 291- 309).

Having introduced Ecocriticism, it is pertinent to consider literature as a basis of literary appreciations and applications, as features of abstractions academic register and living ordeals. What is Literature? What are the different types/aspects/parts and elements of literature? How do these elements enhance the Industry 4.0 (4IR)? To answer this question(s) in brief, literature can be defined as any written or scribbled works especially those adduced to be of considerable superior or lasting of artistic merit (reference). It is composed of books and writings published on a particular subject matter, e.g. "the literature on environment epidemiology." Literature could also be leaflets and other printed materials used to advertise products or give advice. Literature has its etymological roots from the Latin word "LITTERA" or "LITTERATURA" – meaning Letter or knowledge of books. Literature could also be stories written in verse or prose usually for theatrical or stage performance wherein conflicts and emotions are vividly expressed through monologue, dialogue and action. There are different types of literary appreciations, amongst which are:

*DRAMA *FABLE *FAIRYTALES *FANTASY *FICTION *HISTORICAL FICTION
*FACTION *BIOGRAPHIES *AUTOBIOGRAPHIES *POETRY *PROSE *SCIENCE
FICTION *JOURNALISTIC WRITINGS. Any literary work basically has (5) five aspects thus: (a) PLOT (b) SETTINGS (c) CHARACTERS (d) POINT-OF-VIEW (e) THEME (f) TONE (reference) that a literary work can be compartmentalized and interpreted for easier grasping.

This is further enhanced by (9) nine elements of literature that conveys what a body of literature is about, where it is coming from and what it intends to project in the imaginations/ abstract thinkings or real-life postulations. The (9) nine elements are (1) MAIN THEME (2) CHARACTERS (3) SETTINGS (4) CONFLICT/TENSION (5) CLIMAX (6) RESOLUTION (7) PLOT (8) PURPOSE (9) CHRONOLOGY. All of these particles of literature divisions are literary devices that helps spice up any artistic work(s) to be recommended as worthy of note. Literary works are body of experiential cumulations that express emotions, visual realities or abstractions usually from the authors perspective. They stand as, that is literature, references or human registers for further inquiries or research work for ecocriticism, they come as pointers to regional flora, fauna and typographical features. They tell the life of man/woman in their natural habitat.

From the above explanation, it should be understood that there is also another kind of writings from the scientific community, which is called Scientific writing Literature, with a common thread of likeness running through such writings from the scientific community. Wherein, such scientific journal articles are usually divided into the following sections: (i) ABSTRACT (ii) INTRODUCTION (iii) MATERIALS/METHODS (iv) RESULTS (v) DISCUSSION (vi) REFERENCES. With the different divisions usually labelled as such, although many a times the introduction and sometimes the abstract sections are not labelled as such, that is skipped off. Basically, there are three (3) types of scientific literature publications thus: (1) SCHOLARLY ARTICLE (2) REVIEW ARTICLE (3) CONFERENCE PAPER. With generally speaking two (2) sources of knowledge acquisitions for scientific papers stated below as primary scientific literature sources and secondary scientific literature sources thus: recast.

(A) PRIMARY SOURCES OF SCIENTIFIC JOURNALS

- i. Oral account
- ii. Transcripts
- iii. Original Transcripts
- iv. Government Documents
- v. Court Records
- vi. Scanning the literature
- vii. Organizing and analyzing
- viii. Systemic reviews
- ix. The literature review Toolbox

(B) SECONDARY SOURCES OF SCIENTIFIC JOURNALS

5. Books
6. Dictionaries and Encyclopedia
7. Biographies
8. Political commenter
9. Blog posts
10. Grey literature
11. Helps (e.g. Authorities, Experts, Organizations/Institutions)
12. Peer Reviewed Journal Articles
13. Feature writeups

In actual fact, when making sub divisions of scientific literature journal style write-ups, they often come in this format:

(1) TITLE (2) AUTHOR(S) and AFFILIATIONS (3) ABSTRACT (4) INTRODUCTION (5) METHODS (6) RESULTS (7) DISCUSSIONS (8) ACKNOWLEDGEMENTS (9) AND LITERATURE CITED. Many a scholar and students of scientific writings, by omission or commission in writing a scientific literature review do: define; identify and explain facts or phenomenon. Without many a time adumbrating the causes and effects of their research work in their scientific literature reviews, a lacuna that is fairly common.

These kind of writeup (Scientific writing herein) belong to the scientific community, the esoteric readers and the learned ones which on a linear progression brings us to the fourth (4th) Industrial Revolution (4IR) which this conference paper is trying to explain. But before I delve into the analysis of the 4th Industry Revolution, it is important to mention that there were notable epochs of English writings literature. The most important eight (8) periods of English literature are stated below:

- (1). Old English (Anglo-Saxon period) 450-1066AD
- (2). Middle English period 1066-1500AD
- (3). The Renaissance period 1500-1600AD
- (4). The Neo-Classic period 1600-1785AD
- (5). The Romantic period 1785-1832AD
- (6). The Victorian age period 1832-1901AD
- (7). The Edwardian period 1910-1914AD
- (8). The Georgian period 1910-1946

The fourth Industrial Revolution (4IR) as a component of scientific discoveries refers to the: Internet working; space and satellite connectivity; advance analytics; automations and advance manufacturing technology that invariably and on a constant is transforming global business practices for years now, which cannot be over looked or waved aside with the hand. what in this researcher's words are "The imaginations is real, the acts are vividly seen and the future is probable". The fourth industrial revolutions (4IR) has come to stay in the annals of global reels of posterity due to its impacts in scholastics, professions and everyday routine activities of contemporary environments in which humanity has found itself.

The impacts of the fourth Industry (4IR) revolutions are in Advances of computer bases; Artificial Intelligence and Robotics; material science engineering that can fasten the move towards more eco-friendly goods and services sectors of all kinds. Industry 4.0 is the next stage in the world of digitization of the manufacturing sector, moved by disruptive trends and technologies inclusive of: human displacements, fast data collection analytics, high spatial satellite connectivity, Ground and systemic analytics, Human to machine interactions and advance/improvements in Robotic engineering. All of which has consequences for increased human productivity with smart technologies like AI (Artificial Intelligence) and automation aiding professional lives, whereby humans can make fast and smart choices ever than before.

The history of Industry 4.0 started off in 2011 from a growing concerned project in the high-tech strategy of the Federal Republic of Germany Government that promotes and enhances the computerization of manufacturing, whereby, that year in a Hannover fair District activities the term industry 4.0 was publicly introduced. The targets of the 4th Industrial Revolution (4IR) is to help introduce: Automated Decision making; Interconnected machinery; Data collection Analytics for increased productivity across the value chain, and enabled efficient production of goods and services. The energy factors behind the (4IR) Industry 4.0 are cyber physical systems or intelligent computers, the 3rd Industry 3.0 propellers were due to preliminary automation and machinery engineered. For the second Industry 2.0 (2IR) the propels were Electricity powered engineering and lastly the first

Industry 1.0 was steam-propelled machinery aided by coal sources. The idea and concept of industry 4.0 (4IT) was coined by Klaus Schwab in 2016, who also doubles as the founder of the World Economic Forum, with the book he wrote bearing the same title of the global forum. Hence, the energy factors behind the Industry 1.0, Industry 2.0, Industry 3.0, the fourth Industry 4.0 (which is this paper is concerned about) and the futuristic Industry 5.0 are: COAL, GAS, ELECTRONICS, NUCLEAR AND INTERNET AND RENEWABLE ENERGY respectively. The industry 4.0 will involve great dramatic technologies expansion and social changes of great positive trends and disruptive trends as well.

Historically, measurably between the stop of the thirty years war and the Battle of Waterloo, the European continent has undergone significant transformations that saw five of the modern world's great revolutions: SCIENTIFIC REVOLUTION; INDUSTRIAL REVOLUTION; AMERICAN REVOLUTION; FRENCH REVOLUTION; and the ROMANTIC REVOLUTION. As of today, the United States of America and Canada are the leaders of the fourth Industry 4.0 (4IR), in the Americas. While Fifth Industrial Revolution 5.0 is coined words by: BLOGGERS, SOCIAL NETWORKS; RESEARCHERS, AND ACADEMIC for a proposed by hypotheticals of the next development stages after the ongoing industrial 4.0. The fifth industry 5.0 will have as incorporated such concepts as "SUSTAINABILITY"; HUMAN CENTREDNESS AND "CONCERNS FOR THE ENVIRONMENT" with additions of transformations of industrial structure through the use and utilization of AI-Artificial Intelligence; IoT- Internet of Things; Big Data; which has been debated in the fourth Industrial Revolution of the World Economic Forum of 17th February, 2023.

Literature Review

This paper explores three theories of imperatives in understanding the linkages of Ecocriticism, literature and industry 4.0 (4IR). These theories explored are: SOCIAL CONFLICT THEORY; NEEDS THEORY and GLOBALIZATION THEORY.

The 21st century lovers of the 2000s AD or The New Millennials are engrossed and encumbered as terms of being called "New Agers"; "Global Citizens"; "Internetters"; "The end of history beings". All of which are governed by "The knowledge Economy" in which they live and do business in a "Global village." These era of the 21st century that anyone finds his/herself is in fraught with gargantuan facts, figures, fraternity as well as frictions and fights. The starting points will be in the Documents of The Universal Declarations of Human Rights (UDHR) passed on 10th December, 1948 by the 3rd General Assembly of the United Nations organisation (UNO) with eight (8) abstentions from the (USSR, Ukraine Soviet Socialist Republic, The Byelorussia Soviet Socialist Republic, Poland, Yugoslavia, Saudi Arabia, South Africa and Canada). The United Nations Organisation (UNO) Division on Human Right had had 2years to work on forming the UDHR text from January 1947, with the wife of U.S.A President Eleanor Roosevelt who was the USA Delegate to the United Nations General Assembly and Chairperson of the Human Right Commission, appointed an eight (8) nation Drafting Committee that comprised (Australia, Chile, China, France, Lebanon, The USSR, The United Kingdom, and The United States of America) to work on this document. The urgent call for this Document (UDHR) is that the 21st century livings has impacted in turns of encroachments on individual spaces, family spaces, Communal lives spaces, State Sovereignty spaces and Transnational effects due to INTERNET, SATELLITES usages - good or bad effects, as the case might present itself intrapersonal or interpersonal or intra-state or Interstate wise. There is need to study these new global trends of things.

The Social Conflict Theory

The Social Conflict Theory is predicated on the Social Contract between: The leaders and Lead, between Deregulations and Regulations structure, between communal livings as against individualism, as against Statehood/Nationalism and Transnationalism/Supranationalism. This era of the 21st century in which modernizations, liberalism, market forces economies are causing a lot of upheavals whether Intrahumans, Interhumans or Extrahumans (Ecological/Environmental issues) activities that have both positive and negative effects on humans' kind.

It is for this purpose that humanity must sort out itself in terms of grasping the former problems and the new arousing ones that have cropped up in the 21st Century, herein, comes Ecocriticism, literature and the Industry 4.0 (4IR). Humanity must be made conscious at all levels of Intra/Interbehavioural activities; Terrestrial/Extraterrestrial activities that are now part of global realities. The issues of nuclear usages, Biological/Chemical usages, Internet/Satellite usages/Space Debris concerns, State Sovereignty erosion, Land mined/Land made products; Ecological/ Environmental degradations.

These realities have brought about issues of Human rights, Community/People's rights and Terror index. For instance, Cingranelli-Richards Human Rights Data index set (CIRI) and political Terror Scale (PTS), Amnesty International index (AI) are some of the indicators used in understanding global livings and phenomenon that institutes facts, figures and frictions and fraternity amongst and between people's, the state and global organisations. Such indicators range from Authoritarianism, Transnational governance; Good Democratic governance; physical integrity index; Disappearances; political killings; Political imprisonments, Tortures Socio-Economic rights, cultural rights, language rights et cetera et cetera.

To resolve some of these kinds of issues, International Documents and National Documents must be in place and enacted (if there aren't any), to safe guard lives as the global Internet/Satellite age unfolds. If not, there would be encroachments of individual Rights, Communal rights, People's rights, State/National rights and international organisations right. It is for this harmonious livings that the intelligentsia, Scholars, Scientist, Brain jugglers and Teasers must resolve today via instituting International Institutionalism, upholding of veritable and workable International/National Documents, an involving of a continuous schools Developments of tangible and intangible materials like a living school's curriculum that are updated from time to time, capacity buildings and Trainings for State Governments organisations (SGOS), Non-governmental organisations (NGOs), Organized Private Sectors Involvements (OPS) and the informal sector through implementations of robust and holistic policies, programmes and projects. This brings us to The Need Theory.

The Need Theory

The Need Theory is a concept derived from Human Security needs theory. It is fashioned from the facts that every human being needs some basic needs to survive or function properly in any giving and sane society for sustenance and dignity of human self.

These needs are designated as: FOOD, SHELTER, CLOTHINGS, EDUCATION, HEALTH MANAGERMENTS, SECURITY OF LIFE AND PROPERTY and A FUNCTIONAL JOB or WORK PLACE. It is from these requirements that one of the programmes of the Federal Governments of Nigeria is called NEEDS that is acronym for National Economic Empowerment Development Strategy, instituted during the administration of former president Olusegun Obasanjo. In terms of total global continental assessments. Africa is lacking behind in providing these basic needs in so many ways as

indicators provides. As a matter of fact, the continent of Africa is lacking in raising of mortality rates, life span rates, educational standards rates, rights to basic amenities to mention but a few.

For these reasons, the African national Governments must institute International Institutionalism that are favourable to them, especially the United Nations Organisation, the African Union Commission, Development/ International Financial Institutions (DFIs and IFIs) in raising the notch a little higher and save the continent of Africa such backward appellations as "The backyard of Global Economy", "The Dark Continent", which has made many scholars to insinuate that there is a recolonization process in subtle ways going on in the continent of Africa by Super/Great powers-rightly or wrongly deduced.

For Africa and indeed global indicators to rise above global problems, the United Nations Organisation propoundments of 26% National Budget allocations to the educational sector by all National/States must be adhered to. This is because truly speaking no nation can rise above its educational sector. As the "global village" integrates Socio-Economically, global citizens must be taught to be conscious of: "A green Economy" A "Blue Economy" and a Digital Economy "to save not just themselves but planet Earth from all forms of degradations of mind, matter, materials and manners.

Here in Nigeria, the Human Development Indices does not exonerate Nigeria's National policies on many grounds of impacts assessments or achievements. For instance, in terms of human security needs, with out of school children reaching 20 million of its populations, lacking basic universal education, inadequate food security, housing and structural deficits. For Nigeria and indeed Africa to come out of this quagmire, STEM-Science, Technology, Engineering, Mathematics as national policies in her educational sector has to be debated, deliberated, and decided upon for impact assessments of targets, goals and achievements on its road maps of economic recovery and National Blueprints, so as not to be left behind in the global scheme of things.

The Globalization Theory

Globalization Theory is promised on Economic integrations of regional blocs; Economic liberalism or laissez faire, market forces tradings; universalism and advancements in High Technology. There is no denying the fact that Globalization Theory is a reality in our 21st Century 2000ADs, in terms of drives and avenues of integration but also encourages pitting of trenches as civilizations clashes together in trying to marry each other's ideas, systems and ideologies aided by Technological advancements. What made the social scientists Francis Fukuyama to coin the term "End of civilization" or "clash of civilizations" in one of his seminal essays works on humanities and social sciences writings. Whether, this is the last generation or there is another intergalactic generation coming is left for posterity to decide. But, the essence of the next generation with much cataclysms and catalysts all encapsulated in it's ways, means, manners and approaches to science and technology. Industry 4.0 (4IR) that this conference paper is all about will decide, perhaps or perhaps not there is a coming generation from this present one of the 21st century or they would just end it all by omission or commission, that is, succinctly put, the human factor or the technological factor will be the either or decides.

The trends of globalization as well as industry 4.0 (4IR) are both positive and negative depending on how the integration procedurals and processes unfolds for nation states and bloc politics. There is absolute needs for Industry deregulations and regulations *pari-passu* or else, humanity would be encapsulated and captained on a rudderless ship sailing on high waters like Floatsams or jetsams with no specific call of duty or points of destinations to access

covered nautical miles. As of a truth, Internet usages Explosion, Satellite Communications, Intergalactic travels are modern day realities of the 21st Century that no nation state or regional blocs entity can overlook or wave off by the hand, if at least for security reasons (other most reasons too) concerns for them to adequately monitor, control and direct the state of affairs in their immediate domains or spheres of influences.

Methods

This conference paper is a research work by this researcher that uses Experts In-depth - Interviews (IDI) of industry stakeholders both in the Governmental sectors and the organized private sector (OPS). It hopes to explain the facts of Deregulation policies and frame works for regulations of the industry 4.0 (4IR) especially as we have it in Nigeria.

Also, focus group discussions of students' population in higher institutions on Lead City University and University of Ibadan in the city of Ibadan is sourced from random selects of students to access the industry 4.0 in general, as it affects them positively in their research, studies and school life experiences.

Finally, the paper uses secondary sources of experiences/experiments already carried out by Industry stake holders like Nigeria Communication Commission based around Secretariat Area Ibadan, The Data bases of Nigeria Information Technology Data Agency (NTTDA) with offices at the Federal Secretariat, Ikolaba Ibadan and the organized private sectors like United Bank of Africa (UBA, DUGBE main) and Zenith Bank Dugbe District of Ibadan, Oyo State, Nigeria.

Results

The results findings are:

- ★ Internet usages explosions is on gradual basis of rise in Ibadan through awareness.
- ★ Students are becoming more aware of Industry 4.0 (4IR) with the school's main library becoming electronic easy accesses for various uses.
- ★ Robotics is gaining ground in the city of Ibadan with a Robotics centre called R-A-I-N (Robotics, Artificial Intelligence in Nigeria) in Iyaganku Districts of Ibadan dedicated to this Artificial Intelligence growth and Development.
- ★ Also, with the just concluded Ibadan Network of Entrepreneurs exhibitions and conference held on Monday 2nd of October, 2023, the informal sector is being gradually incorporated by bits and pieces on gradual basis for electronic commerce (e-commerce).

Conclusion

This paper was gotten an awareness that the fraction of internet usages for e-edu (electronic education); e-commerce (electronic commerce), e-tainment (electronic entertainment) is small compared to those that are still yet to be incorporated into the system. This is obvious because Nigeria still has educational deficit in the education sector due to lack of adequate and upgrading of curriculum developments of mostly public schools/Institutions in the state. There is needs for structural developments in physical buildings dedicated to e-libraries (i.e. electronic libraries) in strategic places all over the city of Ibadan for easy access, consultations and affordability, which equal applies to all global SMART CITIES, which we all desire for free flow of International Relations.

Also, the resolution of the industry is still at a very low monitoring and regulations, this can be deduced from the events of 20-10-2020 ENDSARS protests in Nigeria, where the youths and younger generations where able to galvanize the social media platforms before,

during and after the ENDSARS Protests with the relevant Authorities or governments of Nigeria not being fully aware of what was going on. It tends to point at security lapses for Nigeria's Security Agencies, Communication Agencies, Information Agencies. One cannot tell or know if the freedom of information Bill is holding the Governments of Nigeria back from monitoring roles or the tenets of the 1999 constitutions of the Federal Republic of Nigeria comes to play that allows for freedom of expressions and rights to peaceful assembly. In all, the Industry 4.0 (4IR) is a veritable tool for educations, mass information of citizens and National orientations.

The National government needs to introduce STEM- Science, Technology, Engineering and Mathematics in school's curriculum and extra curriculum activities. In introducing STEM into the educational sector and other critical sectors, the governments have to be wary of retrenchments, the use of cost recovery, both of which can be channelled into agro-allied production sector and the goods and services sector all bolstered by a framework of entrepreneurship and the informal sector coordinates.

Also, in introducing STEM-, Technology, Engineering and Mathematics, the National governments of Nigeria and indeed Africa should understand the carbon footprints in the energy sector. And what is our National Determined Contributions to climate change which brings us to the next factors,

It is noticeable that weak institutional reforms for law makings and implementations, monitoring evaluations reports , deregulations/regulations abounds in less developed countries in terms of environmental/ ecological degradations/ protections .Africa as indeed Nigeria needs to up its game in this sector, because, survival ,subsistence and sustainability developments depends on its workable institutional reforms which is needed .A dialectic, holistic and multidisciplinary approach is needed to keep on the right tracks of doing things. Africa as indeed Nigeria need promote international institutionalism.

In bringing about industrializing revolutions in Africa and of course Nigeria , it should be incorporated P-P-P: Private Public Partnerships via grasping these needed principles of good governance of cooperations amongst SGOs, NGOs, INGOS, that is, state government organisations, non-governmental organisations and international non-governmental organisations such technical and legal terms as: commuting of ownerships to private ownerships; Equity and Restitutions; Local permits and licenses; Periodical transfer of property rights; Formal arrangements managements by the private sector; Private concern community- based participations; Long term investments fundings for forest Trust Fundings; Agro – forest leasings; Annual Rentings/Lease contracts is needed not to muddle up the whole trends and developmental processes. There should be mapped out spaces and sectorial delineations of obligations and duties for all to know what it entails, that is the be it and all of it and continuous space for improvements.

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