 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

European Scientific Journal, *ESJ*

April 2022

European Scientific Institute, ESI

The content is peer reviewed

ESJ Social Sciences

April 2022 edition vol. 18, No. 12

The content of this journal do not necessarily reflect the opinion or position of the European Scientific Institute. Neither the European Scientific Institute nor any person acting on its behalf is responsible for the use of the information contained in this publication.

ISSN: 1857-7431 (Online)
ISSN: 1857-7881 (Print)

European Scientific Journal, ESJ
April 2022 edition Vol.18, No.12
ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Generativity is a Core Value of the ESJ: A Decade of Growth

Erik Erikson (1902-1994) was one of the great psychologists of the 20th century[1]. He explored the nature of personal human identity. Originally named Erik Homberger after his adoptive father, Dr. Theodore Homberger, he re-imagined his identity and re-named himself Erik Erikson (literally Erik son of Erik). Ironically, he rejected his adoptive father's wish to become a physician, never obtained a college degree, pursued independent studies under Anna Freud, and then taught at Harvard Medical School after emigrating from Germany to the United States. Erickson visualized human psychosocial development as eight successive life-cycle challenges. Each challenge was framed as a struggle between two outcomes, one desirable and one undesirable. The first two early development challenges were 'trust' versus 'mistrust' followed by 'autonomy' versus 'shame.' Importantly, he held that we face the challenge of **generativity** versus **stagnation in middle life**. This challenge concerns the desire to give back to society and leave a mark on the world. It is about the transition from acquiring and accumulating to providing and mentoring.

Founded in 2010, the European Scientific Journal is just reaching young adulthood. Nonetheless, **generativity** is one of our core values. As a Journal, we reject stagnation and continue to evolve to meet the needs of our contributors, our reviewers, and the academic community. We seek to innovate to meet the challenges of open-access academic publishing. For us,

[1] Hopkins, J. R. (1995). Erik Homburger Erikson (1902–1994). *American Psychologist*, 50(9), 796-797. doi:http://dx.doi.org/10.1037/0003-066X.50.9.796

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

generativity has a special meaning. We acknowledge an obligation to give back to the academic community, which has supported us over the past decade and made our initial growth possible. As part of our commitment to generativity, we are re-doubling our efforts in several key areas. First, we are committed to keeping our article processing fees as low as possible to make the ESJ affordable to scholars from all countries. Second, we remain committed to fair and agile peer review and are making further changes to shorten the time between submission and publication of worthy contributions. Third, we are looking actively at ways to eliminate the article processing charges for scholars coming from low GDP countries through a system of subsidies. Fourth, we are examining ways to create and strengthen partnerships with various academic institutions that will mutually benefit those institutions and the ESJ. Finally, through our commitment to publishing excellence, we reaffirm our membership in an open-access academic publishing community that actively contributes to the vitality of scholarship worldwide.

Sincerely,

Daniel B. Hier, MD

European Scientific Journal (ESJ) Natural/Life/Medical Sciences

Editor in Chief

European Scientific Journal, ESJ
April 2022 edition Vol.18, No.12
ISSN: 1857-7881 (Print) e - ISSN 1857-7431

International Editorial Board

Jose Noronha Rodrigues,
University of the Azores, Portugal

Nino Kemertelidze,
Grigol Robakidze University, Georgia

Jacques de Vos Malan,
University of Melbourne, Australia

Franz-Rudolf Herber,
University of Saarland, Germany

Annalisa Zanola,
University of Brescia, Italy

Robert Szucs,
Szolnok University College, Hungary

Dragica Vujadinovic,
University of Belgrade, Serbia

Pawel Rozga,
Technical University of Lodz, Poland

Mahmoud Sabri Al-Asal,
Jadara University, Irbid-Jordan

Rashmirekha Sahoo,
Melaka-Manipal Medical College, Malaysia

Georgios Vousinas,
University of Athens, Greece

Asif Jamil,
Gomal University DIKhan, KPK, Pakistan

Faranak Seyyedi,
Azad University of Arak, Iran

Abe N'Doumy Noel,
International University of Social Sciences Hampate-Ba (IUSS-HB) Abidjan RCI, Ivory Coast

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Majid Said Al Busafi,
Sultan Qaboos University- Sultanate of Oman

Dejan Marolov,
European Scientific Institute, ESI

Noor Alam,
Universiti Sains Malaysia, Malaysia

Rashad A. Al-Jawfi,
Ibb University, Yemen

Muntean Edward Ioan,
University of Agricultural Sciences and Veterinary Medicine (USAMV) Cluj-Napoca, Romania

Hans W. Giessen,
Saarland University, Saarbrucken, Germany

Frank Bezzina,
University of Malta, Malta

Monika Bolek,
University of Lodz, Poland

Robert N. Diotalevi,
Florida Gulf Coast University, USA

Daiva Jureviciene,
Vilnius Gediminas Technical University, Lithuania

Anita Lidaka,
Liepaja University, Latvia

Rania Zayed,
Cairo University, Egypt

Louis Valentin Mballa,
Autonomous University of San Luis Potosi, Mexico

Lydia Ferrara,
University of Naples, Italy

Byron A Brown,
Botswana Accountancy College, Botswana

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Grazia Angeloni,
University "G. d'Annunzio" in Chieti, Italy

Chandrasekhar Putcha,
California State University, Fullerton, CA, USA

Cinaria Tarik Albadri,
Trinity College Dublin University, Ireland

Mahammad A. Nurmamedov,
State Pedagogical University, Azerbaijan

Henryk J. Barton,
Jagiellonian University, Poland

Assem El-Shazly,
Zagazig University, Egypt

Saltanat Meiramova,
S.Seifullin AgroTechnical University, Kazakhstan

Rajasekhar Kali Venkata,
University of Hyderabad, India

Ruzica Loncaric,
Josip Juraj Strossmayer University of Osijek, Croatia

Stefan Vladutescu,
University of Craiova, Romania

Anna Zelenkova,
Matej Bel University, Slovakia

Billy Adamsen,
University of Southern Denmark, Denmark

Marinella Lorinczi,
University of Cagliari, Italy

Giuseppe Cataldi,
University of Naples "L'Orientale", Italy

N. K. Rathee,
Delaware State University, USA

Michael Ba Banutu-Gomez,
Rowan University, USA

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Adil Jamil,
Amman University, Jordan

Habib Kazzi,
Lebanese University, Lebanon

Valentina Manoiu,
University of Bucharest, Romania

Henry J. Grubb,
University of Dubuque, USA

Daniela Brevenikova,
University of Economics, Slovakia

Genute Gedviliene,
Vytautas Magnus University, Lithuania

Vasilika Kume,
University of Tirana, Albania

Mohammed Kerbouche,
University of Mascara, Algeria

Adriana Gherbon,
University of Medicine and Pharmacy Timisoara, Romania

Pablo Alejandro Olavegogeascoechea,
National University of Comahue, Argentina

Raul Rocha Romero,
Autonomous National University of Mexico, Mexico

Driss Bouyahya,
University Moulay Ismail, Morocco

William P. Fox,
Naval Postgraduate School, USA

Rania Mohamed Hassan,
University of Montreal, Canada

Tirso Javier Hernandez Gracia,
Autonomous University of Hidalgo State, Mexico

Tilahun Achaw Messaria,
Addis Ababa University, Ethiopia

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

George Chiladze,
University of Georgia, Georgia

Elisa Rancati,
University of Milano-Bicocca, Italy

Alessandro Merendino,
University of Ferrara, Italy

David L. la Red Martinez,
Northeastern National University, Argentina

Anastassios Gentzoglanis,
University of Sherbrooke, Canada

Awoniyi Samuel Adebayo,
Solusi University, Zimbabwe

Milan Radosevic,
Faculty Of Technical Sciences, Novi Sad, Serbia

Berenyi Laszlo,
University of Miskolc, Hungary

Hisham S Ibrahim Al-Shaikhli,
Auckland University of Technology, New Zeland

Omar Arturo Dominguez Ramirez,
Hidalgo State University, Mexico

Bupinder Zutshi,
Jawaharlal Nehru University, India

Pavel Krpalek,
University of Economics in Prague, Czech Republic

Mondira Dutta,
Jawaharlal Nehru University, India

Evelio Velis,
Barry University, USA

Mahbubul Haque,
Daffodil International University, Bangladesh

Diego Enrique Baez Zarabanda,
Autonomous University of Bucaramanga, Colombia

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Juan Antonio Lopez Nunez,
University of Granada, Spain

Nouh Ibrahim Saleh Alguzo,
Imam Muhammad Ibn Saud Islamic University, Saudi Arabia

Ashgar Ali Ali Mohamed,
International Islamic University, Malaysia

A. Zahoor Khan,
International Islamic University Islamabad, Pakistan

Valentina Manoiu,
University of Bucharest, Romania

Andrzej Palinski,
AGH University of Science and Technology, Poland

Jose Carlos Teixeira,
University of British Columbia Okanagan, Canada

Enkeleint - Aggelos Mechili,
National and Kapodistrian University of Athens, Greece

Anita Auzina,
Latvia University of Agriculture, Latvia

Martin Gomez-Ullate,
University of Extremadura, Spain

Nicholas Samaras,
Technological Educational Institute of Larissa, Greece

Emrah Cengiz,
Istanbul University, Turkey

Francisco Raso Sanchez,
University of Granada, Spain

Simone T. Hashiguti,
Federal University of Uberlandia, Brazil

Tayeb Boutbouqalt,
University, Abdelmalek Essaadi, Morocco

Maurizio Di Paolo Emilio,
University of L'Aquila, Italy

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Ismail Ipek,
Istanbul Aydin University, Turkey

Olena Kovalchuk,
National Technical University of Ukraine, Ukraine

Oscar Garcia Gaitero,
University of La Rioha, Spain

Alfonso Conde,
University of Granada, Spain

Jose Antonio Pineda-Alfonso,
University of Sevilla, Spain

Jingshun Zhang,
Florida Gulf Coast University, USA

Rodrigue V. Cao Diogo,
University of Parakou, Benin

Olena Ivanova,
Kharkiv National University, Ukraine

Marco Mele,
Unint University, Italy

Okyay Ucan,
Omer Halisdemir University, Turkey

Arun N. Ghosh,
West Texas A&M University, USA

Matti Raudjarv,
University of Tartu, Estonia

Cosimo Magazzino,
Roma Tre University, Italy

Susana Sousa Machado,
Polytechnic Institute of Porto, Portugal

Jelena Zascerinska,
University of Latvia, Latvia

Umman Tugba Simsek Gursoy,
Istanbul University, Turkey

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Zoltan Veres,
University of Pannonia, Hungary

Vera Komarova,
Daugavpils University, Latvia

Tiffany T. Boury,
Franciscan University of Steubenville, USA

Salloom A. Al-Juboori,
Muta'h University, Jordan

Stephane Zingue,
University of Maroua, Cameroon

Pierluigi Passaro,
University of Bari Aldo Moro, Italy

Georges Kpazai,
Laurentian University, Canada

Claus W. Turtur,
University of Applied Sciences Ostfalia, Germany

Natalia Sizochenko,
Dartmouth College, USA

Michele Russo,
University of Foggia, Italy

Nikolett Deutsch,
Corvinus University of Budapest, Hungary

Andrea Baranovska,
University of st. Cyrill and Methodius Trnava, Slovakia

Brian Sloboda,
University of Maryland, USA

Murtaz Kvirkvaia,
Grigol Robakidze University, Georgia

Yassen Al Foteih,
Canadian University Dubai, UAE

Marisa Cecilia Tumino,
Adventista del Plata University, Argentina

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Luca Scaini,
Al Akhawayn University, Morocco

Aelita Skarbaliene,
Klaipeda University, Lithuania

Oxana Bayer,
Dnipropetrovsk Oles Honchar University, Ukraine

Onyeka Uche Ofili,
International School of Management, France

Aurela Saliaj,
University of Vlora, Albania

Maria Garbelli,
Milano Bicocca University, Italy

Josephus van der Maesen,
Wageningen University, Netherlands

Claudia M. Dellafiore,
National University of Rio Cuarto, Argentina

Francisco Gonzalez Garcia,
University of Granada, Spain

Mahgoub El-Tigani Mahmoud,
Tennessee State University, USA

Miriam Agreda Montoro,
University of La Rioja, Spain

Daniel Federico Morla,
National University of Rio Cuarto, Argentina

Valeria Autran,
National University of Rio Cuarto, Argentina

Muhammad Hasmi Abu Hassan Asaari,
Universiti Sains, Malaysia

Angelo Viglianisi Ferraro,
Mediterranean University of Reggio Calabria, Italy

Roberto Di Maria,
University of Palermo, Italy

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Delia Magherescu,
State University of Moldova, Moldova

Paul Waithaka Mahinge,
Kenyatta University, Kenya

Aicha El Alaoui,
Sultan My Slimane University, Morocco

Marija Brajcic,
University of Split, Croatia

Monica Monea,
University of Medicine and Pharmacy of Tirgu Mures, Romania

Belen Martinez-Ferrer,
Univeristy Pablo Olavide, Spain

Rachid Zammar,
University Mohammed 5, Morocco

Fatma Koc,
Gazi University, Turkey

Calina Nicoleta,
University of Craiova, Romania

Shadaan Abid,
UT Southwestern Medical Center, USA

Sadik Madani Alaoui,
Sidi Mohamed Ben Abdellah University, Morocco

Patrizia Gazzola,
University of Insubria, Italy

Krisztina Szegedi,
University of Miskolc, Hungary

Liliana Esther Mayoral,
National University of Cuyo, Argentina

Amarjit Singh,
Kurukshetra University, India

Oscar Casanova Lopez,
University of Zaragoza, Spain

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Emina Jerkovic,
University of Josip Juraj Strossmayer, Croatia

Carlos M. Azcoitia,
National Louis University, USA

Rokia Sanogo,
University USTTB, Mali

Bertrand Lemennicier,
University of Paris Sorbonne, France

Lahcen Benaabidate,
University Sidi Mohamed Ben Abdellah, Morocco

Janaka Jayawickrama,
University of York, United Kingdom

Kiluba L. Nkulu,
University of Kentucky, USA

Oscar Armando Esparza Del Villar,
University of Juarez City, Mexico

Leila Ghudushauri,
Tbilisi State University, Georgia

George C. Katsadoros,
University of the Aegean, Greece

Elena Gavrilova,
Plekhanov University of Economics, Russia

Eyal Lewin,
Ariel University, Israel

Szczepan Figiel,
University of Warmia, Poland

Don Martin,
Youngstown State University, USA

John B. Strait,
Sam Houston State University, USA

Nirmal Kumar Betchoo,
University of Mascareignes, Mauritius

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Camilla Buzzacchi,
University Milano Bicocca, Italy

EL Kandoussi Mohamed,
Moulay Ismai University, Morocco

Susana Borras Pentinat,
Rovira i Virgili University, Spain

Jelena Kasap,
Josip J. Strossmayer University, Croatia

Massimo Mariani,
Libera Universita Mediterranea, Italy

Rachid Sani,
University of Niamey, Niger

Luis Aliaga,
University of Granada, Spain

Robert McGee,
Fayetteville State University, USA

Angel Urbina-Garcia,
University of Hull, United Kingdom

Sivanadane Mandjiny,
University of N. Carolina at Pembroke, USA

Marko Andonov,
American College, Republic of Macedonia

Ayub Nabi Khan,
BGMEA University of Fashion & Technology, Bangladesh

Leyla Yilmaz Findik,
Hacettepe University. Turkey

Vlad Monescu,
Transilvania University of Brasov, Romania

Stefano Amelio,
University of Unsubria, Italy

Enida Pulaj,
University of Vlora, Albania

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Christian Cave,
University of Paris XI, France

Julius Gathogo,
University of South Africa, South Africa

Claudia Pisoschi,
University of Craiova, Romania

Arianna Di Vittorio,
University of Bari "Aldo Moro", Italy

Joseph Ntale,
Catholic University of Eastern Africa, Kenya

Kate Litondo,
University of Nairobi, Kenya

Maurice Gning,
Gaston Berger University, Senegal

Katarina Marosevic,
J.J. Strossmayer University, Croatia

Sherin Y. Elmahdy,
Florida A&M University, USA

Syed Shadab,
Jazan University, Saudi Arabia

Koffi Yao Blaise,
University Felix Houphouet Boigny, Ivory Coast

Mario Adelfo Batista Zaldivar,
Technical University of Manabi, Ecuador

Kalidou Seydou,
Gaston Berger University, Senegal

Patrick Chanda,
The University of Zambia, Zambia

Meryem Ait Ouali,
University IBN Tofail, Morocco

Laid Benderradji,
Mohamed Boudiaf University of Msila, Algeria

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Amine Daoudi,
University Moulay Ismail, Morocco

Oruam Cadex Marichal Guevara,
University Maximo Gomes Baez, Cuba

Vanya Katarska,
National Military University, Bulgaria

Carmen Maria Zavala Arnal,
University of Zaragoza, Spain

Francisco Gavi Reyes,
Postgraduate College, Mexico

Iane Franceschet de Sousa,
Federal University S. Catarina, Brazil

Patricia Randrianavony,
University of Antananarivo, Madagascar

Roque V. Mendez,
Texas State University, USA

Kesbi Abdelaziz,
University Hassan II Mohammedia, Morocco

Whei-Mei Jean Shih,
Chang Gung University of Science and Technology, Taiwan

Ilknur Bayram,
Ankara University, Turkey

Elenica Pjero,
University Ismail Qemali, Albania

Gokhan Ozer,
Fatih Sultan Mehmet Vakif University, Turkey

Veronica Flores Sanchez,
Technological University of Veracruz, Mexico

Camille Habib,
Lebanese University, Lebanon

Larisa Topka,
Irkutsk State University, Russia

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Paul M. Lipowski,
Creighton University, USA

Marie Line Karam,
Lebanese University, Lebanon

Sergio Scicchitano,
Research Center on Labour Economics (INAPP), Italy

Mohamed Berradi,
Ibn Tofail University, Morocco

Visnja Lachner,
Josip J. Strossmayer University, Croatia

Sangne Yao Charles,
University Jean Lorougnon Guede, Ivory Coast

Omar Boubker,
University Ibn Zohr, Morocco

Kouame Atta,
University Felix Houphouet Boigny, Ivory Coast

Patience Mpanzu,
University of Kinshasa, Congo

Devang Upadhyay,
University of North Carolina at Pembroke, USA

Nyamador Wolali Seth,
University of Lome, Togo

Akmel Meless Simeon,
Ouattara University, Ivory Coast

Mohamed Sadiki,
IBN Tofail University, Morocco

Paula E. Faulkner,
North Carolina Agricultural and Technical State University, USA

Gamal Elgezeery,
Suez University, Egypt

Manuel Gonzalez Perez,
Universidad Popular Autonoma del Estado de Puebla, Mexico

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Denis Pompidou Folefack,
Centre Africain de Recherche sur Bananiers et Plantains (CARBAP), Cameroon

Seka Yapi Arsene Thierry,
Ecole Normale Superieure Abidjan (ENS Ivory Coast)

Dastagiri MB,
ICAR-National Academy of Agricultural Research Management, India

Alla Manga,
Universitey Cheikh Anta Diop, Senegal

Lalla Aicha Lrhorfi,
University Ibn Tofail, Morocco

Ruth Adunola Aderanti,
Babcock University, Nigeria

Katica Kulavkova,
University of "Ss. Cyril and Methodius", Republic of Macedonia

Aka Koffi Sosthene,
Research Center for Oceanology, Ivory Coast

Forchap Ngang Justine,
University Institute of Science and Technology of Central Africa, Cameroon

Toure Krouele,
Ecole Normale Superieure d'Abidjan, Ivory Coast

Sophia Barinova,
University of Haifa, Israel

Leonidas Antonio Cerda Romero,
Escuela Superior Politecnica de Chimborazo, Ecuador

T.M.S.P.K. Thennakoon,
University of Sri Jayewrdenepura, Sri Lanka

Aderewa Amontcha,
Universite d'Abomey-Calavi, Benin

Khadija Kaid Rassou,
Centre Regional des Metiers de l'Education et de la Formation, Morocco

Rene Mesias Villacres Borja,
Universidad Estatal De Bolivar, Ecuador

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Aaron Victor Reyes Rodriguez,
Autonomous University of Hidalgo State, Mexico

Qamil Dika,
Tirana Medical University, Albania

Kouame Konan,
Peleforo Gon Coulibaly University of Korhogo, Ivory Coast

Hariti Hakim,
University Alger 3, Algeria

Emel Ceyhun Sabir,
University of Cukurova, Turkey

Salomon Barrezueta Unda,
Universidad Tecnica de Machala, Ecuador

Belkis Zervent Unal,
Cukurova University, Turkey

Elena Krupa,
Kazakh Agency of Applied Ecology, Kazakhstan

Carlos Angel Mendez Peon,
Universidad de Sonora, Mexico

Antonio Solis Lima,
Apizaco Institute Technological, Mexico

Roxana Matefi,
Transilvania University of Brasov, Romania

Bouharati Saddek,
UFAS Setif1 University, Algeria

Toleba Seidou Mamam,
Universite d'Abomey-Calavi (UAC), Benin

Serigne Modou Sarr,
Universite Alioune DIOP de Bambey, Senegal

Nina Stankous,
National University, USA

Lovergine Saverio,
Tor Vergata University of Rome, Italy

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Fekadu Yehuwalashet Maru,
Jigjiga University, Ethiopia

Karima Laamiri,
University of Moulay Ismail, Morocco

Elena Hunt,
Laurentian University, Canada

Sharad K. Soni,
Jawaharlal Nehru University, India

Lucrezia Maria de Cosmo,
University of Bari "Aldo Moro", Italy

Florence Kagendo Muindi,
University of Nairobi, Kenya

Maximo Rossi Malan,
Universidad de la Republica, Uruguay

Haggag Mohamed Haggag,
South Valley University, Egypt

Olugbamila Omotayo Ben,
Obafemi Awolowo University, Ile-Ife, Nigeria

Eveligh Cecilania Prado-Carpio,
Technical University of Machala, Ecuador

Maria Clideana Cabral Maia,
Brazilian Company of Agricultural Research - EMBRAPA, Brazil

Fernando Paulo Oliveira Magalhaes,
Polytechnic Institute of Leiria, Portugal

Valeria Alejandra Santa,
Universidad Nacional de Río Cuarto, Córdoba, Argentina

Stefan Cristian Gherghina,
Bucharest University of Economic Studies, Romania

Goran Ilik,
"St. Kliment Ohridski" University, Republic of Macedonia

Amir Mohammad Sohrabian,
International Information Technology University (IITU), Kazakhstan

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Aristide Yemmafouo,
University of Dschang, Cameroon

Gabriel Anibal Monzón,
University of Moron, Argentina

Robert Cobb Jr,
North Carolina Agricultural and Technical State University, USA

Arburim Iseni,
State University of Tetovo, Republic of Macedonia

Raoufou Pierre Radji,
University of Lome, Togo

Juan Carlos Rodriguez Rodriguez,
Universidad de Almeria, Spain

Satoru Suzuki,
Panasonic Corporation, Japan

Iulia-Cristina Muresan,
University of Agricultural Sciences and Veterinary Medicine, Romania

Russell Kabir,
Anglia Ruskin University, UK

Nasreen Khan,
SZABIST, Dubai

Luisa Morales Maure,
University of Panama, Panama

Lipeng Xin,
Xi'an Jiaotong University, China

Harja Maria,
Gheorghe Asachi Technical University of Iasi, Romania

Adou Paul Venance,
University Alassane Ouattara, Cote d'Ivoire

Nkwenka Geoffroy,
Ecole Superieure des Sciences et Techniques (ESSET), Cameroon

Benie Aloh J. M. H.,
Felix Houphouet-Boigny University of Abidjan, Cote d´Ivoire

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Bertin Desire Soh Fotsing,
University of Dschang, Cameroon

N'guessan Tenguel Sosthene,
Nangui Abrogoua University, Cote d'Ivoire

Ackoundoun-Nguessan Kouame Sharll,
Ecole Normale Superieure (ENS), Cote d'Ivoire

Abdelfettah Maouni,
Abdelmalek Essaadi University, Morocco

Alina Stela Resceanu,
University of Craiova, Romania

Alilouch Redouan,
University Abdelmalek Saadi, Morocco

Gnamien Konan Bah Modeste,
Jean Lorougnon Guede University, Cote d'Ivoire

Sufi Amin,
International Islamic University, Islambad Pakistan

Sanja Milosevic Govedarovic,
University of Belgrade, Serbia

Elham Mohammadi,
Curtin University, Australia

Andrianarizaka Marc Tiana,
University of Antananarivo, Madagascar

Ngakan Ketut Acwin Dwijendra,
Udayana University, Indonesia

Yue Cao,
Southeast University, China

Audrey Tolouian,
University of Texas, USA

Asli Cazorla Milla,
Federal University of Rio de Janerio, Brazil

Valentin Marian Antohi,
University Dunarea de Jos of Galati, Romania

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Tabou Talahatou,
University of Abomey-Calavi, Benin

N. K. B. Raju,
Sri Venkateswara Veterinary University, India

Hamidreza Izadi,
Chabahar Maritime University, Iran

Hanaa Ouda Khadri Ahmed Ouda,
Ain Shams University, Egypt

Rachid Ismaili,
Hassan 1 University, Morocco

Tamar Ghutidze,
Ivane Javakhishvili Tbilisi State University, Georgia

Emine Koca,
Ankara Haci Bayram Veli University, Turkey

David Perez Jorge,
University of La Laguna, Spain

Irma Guga,
European University of Tirana, Albania

Jesus Gerardo Martínez del Castillo,
University of Almeria, Spain

Mohammed Mouradi,
Sultan Moulay Slimane University, Morocco

Marco Tulio Ceron Lopez,
Institute of University Studies, Mexico

Mangambu Mokoso Jean De Dieu,
University of Bukavu, Congo

Hadi Sutopo,
Kalbis Institute, Indonesia

Priyantha W. Mudalige,
University of Kelaniya, Sri Lanka

Emmanouil N. Choustoulakis,
University of Peloponnese, Greece

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Yasangi Anuradha Iddagoda,
Charted Institute of Personal Management, Sri Lanka

Pinnawala Sangasumana,
University of Sri Jayewardenepura, Sri Lanka

Abdelali Kaaouachi,
Mohammed I University, Morocco

Kahi Oulai Honore,
University of Bouake, Cote d'Ivoire

Ma'moun Ahmad Habiballah,
Al Hussein Bin Talal University, Jordan

Amaya Epelde Larranaga,
University of Granada, Spain

Franca Daniele,
"G. d'Annunzio" University, Chieti-Pescara, Italy

Saly Sambou,
Cheikh Anta Diop University, Senegal

Daniela Di Berardino,
University of Chieti-Pescara, Italy

Dorjana Klosi,
University of Vlore "Ismail Qemali, Albania

Abu Hamja,
Aalborg University, Denmark

Stankovska Gordana,
University of Tetova, Republic of Macedonia

Kazimierz Albin Klosinski,
John Paul II Catholic University of Lublin, Poland

Maria Leticia Bautista Diaz,
National Autonomous University, Mexico

Bruno Augusto Sampaio Fuga,
North Parana University, Brazil

Anouar Alami,
Sidi Mohammed Ben Abdellah University, Morocco

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Vincenzo Riso,
University of Ferrara, Italy

Janhavi Nagwekar,
St. Michael's Hospital, Canada

Jose Grillo Evangelista,
Egas Moniz Higher Institute of Health Science, Portugal

Xi Chen,
University of Kentucky, USA

Fateh Mebarek-Oudina,
Skikda University, Algeria

Nadia Mansour,
University of Sousse, Tunisia

Jestoni Dulva Maniago,
Majmaah University, Saudi Arabia

Daniel B. Hier,
Missouri University of Science and Technology, USA

S. Sendil Velan,
Dr. M.G.R. Educational and Research Institute, India

Enriko Ceko,
Wisdom University, Albania

Laura Fischer,
National Autonomous University of Mexico, Mexico

Mauro Berumen,
Caribbean University, Mexico

Sara I. Abdelsalam,
The British University in Egypt, Egypt

Maria Carlota,
Autonomous University of Queretaro, Mexico

H.A. Nishantha Hettiarachchi,
University of Sri Jayewardenepura, Sri Lanka

Bhupendra Karki,
University of Louisville, Louisville, USA

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Evens Emmanuel,
University of Quisqueya, Haiti

Iresha Madhavi Lakshman,
University of Colombo, Sri Lanka

Francesco Scotognella,
Polytechnic University of Milan, Italy

Kamal Niaz,
Cholistan University of Veterinary & Animal Sciences, Pakistan

Rawaa Qasha,
University of Mosul, Iraq

Amal Talib Al-Sa'ady,
Babylon University, Iraq

Hani Nasser Abdelhamid,
Assiut University, Egypt

Mihnea-Alexandru Gaman,
University of Medicine and Pharmacy, Romania

Daniela-Maria Cretu,
Lucian Blaga University of Sibiu, Romania

Ilenia Farina,
University of Naples “Parthenope, Italy

Luisa Zanolla,
Azienda Ospedaliera Universitaria Verona, Italy

Jonas Kwabla Fiadzawoo,
University for Development Studies (UDS), Ghana

Adriana Burlea-Schiopoiu,
University of Craiova, Romania

Alejandro Palafox-Munoz,
University of Quintana Roo, Mexico

Fernando Espinoza Lopez,
Hofstra University, USA

Ammar B. Altemimi,
University of Basrah, Iraq

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Monica Butnariu,
University of Agricultural Sciences and Veterinary Medicine "King Michael I, Romania

Davide Calandra,
University of Turin, Italy

Nicola Varrone,
University of Campania Luigi Vanvitelli, Italy

Luis Angel Medina Juarez,
University of Sonora, Mexico

Francesco D. d'Ovidio,
University of Bari "Aldo Moro", Italy

Sameer Algburi,
Al-Kitab University, Iraq

Braione Pietro,
University of Milano-Bicocca, Italy

Mounia Bendari,
Mohammed VI University, Morocco

Stamatios Papadakis,
University of Crete, Greece

Aleksey Khlopytskyi,
Ukrainian State University of Chemical Technology, Ukraine

Sung-Kun Kim,
Northeastern State University, USA

Nemanja Berber,
University of Novi Sad, Serbia

Krejsa Martin,
Tecnical University of Ostrava, Czech Republic

Magdalena Vaverkova,
Mendel University in Brno, Czech Republic

Jeewaka Kumara,
University of Peradeniya, Sri Lanka

Antonella Giacosa,
University of Torino, Italy

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Paola Clara Leotta,
University of Catania, Italy

Francesco G. Patania,
University of Catania, Italy

Rajko Odobasa,
University of Osijek, Faculty of Law, Croatia

Jesusa Villanueva-Gutierrez,
University of Tabuk, Tabuk, KSA

Leonardo Jose Mataruna-Dos-Santos,
Canadian University of Dubai, UAE

Usama Konbr,
Tanta University, Egypt

Leonid Nakov,
"Ss. Cyril and Methodius University", Republic of Macedonia

Branislav Radeljic,
Necmettin Erbakan University, Turkey

Anita Mandaric Vukusic,
University of Split, Croatia

Barbara Cappuzzo,
University of Palermo, Italy

Roman Jimenez Vera,
Juarez Autonomous University of Tabasco, Mexico

Lucia P. Romero Mariscal,
University of Almeria, Spain

Pedro Antonio Martin-Cervantes,
University of Almeria, Spain

Hasan Abd Ali Khudhair,
Southern Technical University, Iraq

Qanqom Amira,
Ibn Zohr University, Morroco

Farid Samir Benavides Vanegas,
Catholic University of Colombia, Colombia

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Nedret Kuran Burcoglu,
Emeritus of Bogazici University, Turkey

Julio Costa Pinto,
University of Santiago de Compostela, Spain

Satish Kumar,
Dire Dawa University, Ethiopia

Favio Farinella,
National University of Mar del Plata, Argentina

Jorge Tenorio Fernando,
Paula Souza State Center for Technological Education - FATEC, Brazil

Salwa Alinat,
Open University, Israel

Hamzo Khan Tagar,
College Education Department Government of Sindh, Pakistan

Rasool Bukhsh Mirjat,
Senior Civil Judge, Islamabad, Pakistan

Samantha Goncalves Mancini Ramos,
Londrina State University, Brazil

Mykola Nesprava,
Dnopropetrovsk State University of Internal Affairs, Ukraine

Awwad Othman Abdelaziz Ahmed,
Taif University, Kingdom of Saudi Arabia

Manotar Tampubolon,
Universitas Kristen, Indonesia

Giacomo Buoncompagni,
LUMSA University of Rome, Italy

Elza Nikoleishvili,
University of Georgia, Georgia

Mohammed Mahmood Mohammed,
University of Baghdad, Iraq

Oudgou Mohamed,
University Sultan Moulay Slimane, Morocco

European Scientific Journal, ESJ
April 2022 edition Vol.18, No.12
ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Arlinda Ymeraj,
European University of Tirana, Albania

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Table of Contents:

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

ESJ Social Sciences

Macroeconomic Forecasting Examining the COVID-19 Pandemic Using Selected Countries: A Machine Learning LSTM (Long Term Short Term Memory) Approach

Rolando A. Santos
Lakeland Community College, USA
Brian W. Sloboda
University of Maryland, Global Campus, USA

Doi:10.19044/esj.2022.v18n12p1

Submitted: 21 December 2021
Accepted: 18 April 2022
Published: 30 April 2022

Copyright 2022 Author(s)
Under Creative Commons BY-NC-ND
4.0 OPEN ACCESS

Cite As:
Santos R.A. & Sloboda B.W. (2022). *Macroeconomic Forecasting Examining the COVID-19 Pandemic Using Selected Countries: A Machine Learning LSTM (Long Term Short Term Memory) Approach.* European Scientific Journal, ESJ, 18 (12), 1.
https://doi.org/10.19044/esj.2022.v18n12p1

Abstract

The disease COVID-19 caused by the virus SARS-CoV-2 has initially disrupted the Chinese economy after the first cases were reported in December 2019 in Wuhan city in Hubei province of China. The virus continued to spread throughout the rest of the world. This spread of the virus led to the official designation of the COVID-19 pandemic by the World Health Organization (WHO) in late February 2020, which resulted in the disruption of these economies due to the stringent lockdowns and restrictions in travel disease's evolution. The disruptive economic impact is highly uncertain, making it difficult for policymakers to craft an appropriate policy response to these macroeconomic disruptions. To better understand possible economic outcomes, this paper explores the use of the machine learning approach LSTM to assess the economic forecast in some selected countries. The empirical results from this paper demonstrate that there are temporary disruptions in macroeconomics in the short run and these economies rebound. The recovery of each selected country may be different as the forecast would imply.

Keywords: Pandemics, infectious diseases, macroeconomics, machine learning, LSTM

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Section I: Introduction

When the news of the spread of the disease COVID19 caused by the virus SARS-CoV-2[1] hit the United States after being triggered in December 2019 in Wuhan city in Hubei province of China, there were series of closures of business establishments in the middle of March 2020. It started in San Francisco, California, then other states followed, such as Ohio, New York, etc. With these closures, the unemployment rate increased quickly, and so goes the rest of the economy. This paper aims to examine the effects of COVID19 on GDP forecasting and determine its implication to some selected countries using LSTM methodology. The adverse impact of such a pandemic can affect factors like GDP, unemployment, industrial production, and interest rates. This paper would look at the macroeconomic forecasting for selected countries and assess their recovery prospects.

In March 2020, the number of people filed for unemployment had gone up to 6.6 million workers (WSJ, 2020) as the coronavirus hit the United States' economy, marking an abrupt end to the nation's historic, decade-long run of job growth. The number of Americans filing for claims was nearly five times the previous record. Millions of US businesses have announced layoffs or furloughs as their cash flows dry up. Several state and local authorities have ordered nonessential businesses to close in response to the novel coronavirus pandemic, bringing the great American job machine to a sudden halt.

Retail sales, a measure of purchases at stores, gasoline stations, restaurants, bars, and online, fell at a seasonally adjusted 8.7 percent in March 2020 (WSJ, 2020) from a month earlier, the most significant month-to-month decline since the record began in 1992. Clothing store sales have declined by more than half as spending on vehicles, furniture, sporting goods, and electronics has fallen by double digits. The Federal Reserve has also said that US Industrial Production fell by 5 percent in March, the most significant drop since World War II. The initial impact in the housing market was a drastic drop of 30 percent, while the US stock indexes have dropped by approximately 2 percent (WSJ, 2020).

The paper first summarizes the existing literature on the economic impacts of past pandemics. Section 3 outlines the data sources and variables used in the analysis and the machine learning LSTM (Long Term Short Term Memory) Approach. Section 4 describes the results from the use of this model. Section 5 concludes the paper by summarizing the main findings and discussing policy implications.

[1] The World Health Organization (WHO) defines the disease as COVID-19 but the actual virus causing COVID-19 is called the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Section 2: Past Pandemics and The Economic Impacts

There are only a few studies of the economic costs of large-scale outbreaks of infectious diseases. Schoenbaum (1987) is an example of an early analysis of the economic impact of influenza. Meltzer et al. (1999) examined the likely economic effects of the US influenza pandemic and evaluated several vaccine-based interventions. At a gross attack rate (i.e., the number of people contracting the virus out of the total population) of 15-35 percent, the number of influenza deaths is 89 – 207 thousand, and an estimated mean real economic impact for the US economy is $73.1- $166.5 billion.

Studies of the macroeconomic effects of the SARS epidemic in 2003 found a significant impact on economies through large reductions in consumption of various goods and services, an increase in business operating costs, and re-evaluation of country risks reflected in increased risk premiums in thirty countries. Shocks to other economies were transmitted according to the degree of the countries' exposure, or susceptibility, to the disease. Despite a relatively small number of cases and deaths, the global costs were significant and not limited to the directly affected countries (Lee and McKibbin, 2003).

Bloom et al. (2005) used the Oxford economic forecasting model to estimate the potential economic impact of a pandemic resulting from the mutation of the avian influenza strain. They assume a mild pandemic with a 20 percent attack rate, a 0.5 percent case-fatality rate, and a consumption shock of 3 percent. Scenarios include two-quarters of demand contraction only in Asia (combined effect 2.6 percent Asian GDP or US$113.2 billion); a longer-term shock with a more extended outbreak and more considerable shock to consumption and export yield a loss of 6.5 percent of GDP (US$282.7 billion). Global GDP is reduced by 0.6 percent, global trade of goods and services contracts by $2.5 trillion (14 percent). Open economies were typically more vulnerable to international shocks.

Garret (2007) speculated about the possibilities of a future pandemic. The US Centers for Disease Control and Prevention's forecast of fatalities can recover 200,000 and would cost the economy over $160 million or roughly 1.5% of GDP. Because there is almost a complete absence of economic data from the Spanish Influenza (1918-1922), Garrett looked for evidence in newspaper articles printed during the pandemic, particularly at the local levels. Between that and the evidence in earlier economic studies, he found a geographic variation in the disease's effects that is unlikely in our far more interconnected nation a century later. Cities, unsurprisingly, had "higher mortality rates than rural areas of the states." Cities like Little Rock, Arkansas saw general merchant business declines of 40 percent, and even the retail grocery business reduced by one-third. A specific department store reported a more than 50 percent cut in daily income, but at least it was still operating.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Though there was a flu-related "increase in demand for beds, mattresses, and springs," the city's businesses were "losing $10,000 a day on average ($133,500 in 2006 dollars). This is an actual loss, not a decrease in business that may be covered by an increase in sales when the quarantine order is over."

The Memphis Street Railway reported that 124 of its 400 employees were too sick to work on one day. A depopulated telephone company begged the public to make fewer unnecessary calls. Coal mine operators reported a 50 percent cut in production, with some mining camps forced to shut down from raging infections. Garrett explained the possibility of a post-pandemic increase in wage and income growth on "a greater increase in capital per worker, and thus output per worker"—which might not work out the same way from a starting point of 2020 rather than 1920.

Yet most of the 1918 pandemic's effects "were short-term," Garrett concluded. Most businesses suffered a significant revenue loss, especially those in the service sector. However, companies that specialized in healthcare-related products experienced an increase in revenue. It also caused a shortage of labor that resulted in higher wages due to people getting sick and dying.

Keogh-Brown, M. et al. (2008) presented a selection of model results to outline the potential impact of pandemic influenza. Their results suggested that a pandemic of the type experienced in 1957 or 1968/69 would harm GDP of approximately 0.5 percent and would produce losses to household consumption of up to 1 percent, a slight increase in government expenditure, and some minor impacts on exchange rates. Sectoral results from their model are tiny, so the overall economic impact of the pandemic itself would seem to be of relatively minor concern. However, the introduction of a school closure policy, even if restricted to the pandemic's peak only, caused a significant increase in the working population shock and dramatically increased the economic impact of the pandemic. Under a peak pandemic school closure policy, the GDP losses of between 5 percent and 8 percent. Also, household consumption could fall by almost 13 percent during the pandemic, and government expenditure could rise by up to 6 percent in some countries. These results highlighted the power of pandemic mitigation policies, however beneficial from the health perspective, magnified the economic impact. The effect of school closure that they have modeled may prove a worst-case scenario because parents would make alternative arrangements for the care of their children. Conversely, if school closures would last longer than the four weeks assumed in their study, it would reduce some parents' ability to locate child care and remain home longer. Consequently, this would harm the economy. While some mitigation policies would have a detrimental effect on the economy, their results showed that antivirals and vaccines proved very beneficial in dampening the negative

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

economic impacts resulting from the school closures. The economic impact of school closure, together with antivirals and vaccines, was approximately twice as significant as the impact of the disease itself but is much smaller than the economic impact of the scenario that considers school closure. While there is much uncertainty surrounding the nature of future pandemics, their study highlighted the need for further investigation into the potential economic impact of pandemic influenza. Further research into this subject would provide valuable insights for policymakers and form an essential blueprint in the preparedness plan for future pandemics.

Jorda, Singh, and Taylor (2020), pandemics have a long-lasting effect, especially on the real interest rate. The impact of interest on assets could last for decades (20 years on average). In some instances, it would take the natural rate of interest to go back to its original state after 40 years. This trend was consistent in most European countries. However, when it comes to real wages, they tend to increase after a pandemic. The upward trend in real wages was attributed to labor shortages resulting from the deaths.

In brief, the spread of infectious diseases often leads to a substantial decline in consumer demand, especially for travel and retail sales service. Also, if the virus is quite contagious, people may avoid social interactions, as witnessed during the COVID-19 pandemic. The economic impact or the adverse demand shock becomes substantive in countries with more extensive service-related activities and a high density of population, e.g., Hong Kong or Beijing, China. More importantly, the psychological shock ripples throughout the world, not just to the countries of local transmission of the virus because the world is closely connected via international travel.

Section 3: Data and Methodology

Data Sources

The data included the following variables: Real GDP, industrial production, unemployment rate, retail sales, and federal funds rate from January 1995 through February 2021 monthly. The data were obtained from Trading Economics (https://tradingeconomics.com/).[2] We shall use the LSTM (Long Term Short Term Memory) for forecasting purposes and evaluate its performance as a forecasting tool. We will be using countries like the United States, Germany, China, and Australia. We chose these countries to represent each continent , see how well the recovery from the pandemic was, and evaluate its economic impacts using forecasting methods.

[2] The authors used API to extract the data for this paper from Trading Economics.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Methodology

The method of analysis that we will use in this paper is Machine Learning, emphasizing LSTM (Long Term Short Term Memory). The motivation for using the LSTM model because our data is time series. We would like to see the impact of past values as it is incorporated in the current values of the variables involved. LSTM networks are a type of RNN (Recurrent Neural Network). The LSTM modules are typically called cells rather than neurons and contain a series of gates. A diagram of an LSTM cell can be seen in Figure 1. Each LSTM cell (A) has a form of longer-term memory in the form of a cell state that is updated through time. A forget gate (i.e. $h_{t-1)}$ at the new input and the hidden state decides which information in the cell state can be safely ignored. The input gate (x_t) then decides what information from the new input should be added to the cell state to be remembered. The sigmoid function (σ) decides which information is important to keep from the tanh output. Finally, the output gate (h_{t+1}) takes information from the cell state, input, and hidden state and generates the output for the current time step. In this way, LSTM networks can remember information through many timesteps, making them ideal for finding longer-term trends in data. At the same time, the LSTM cell still uses the hidden state and therefore has short-term memory as well. Overall, LSTM networks can be a powerful tool in time series forecasting (Olah, 2015).

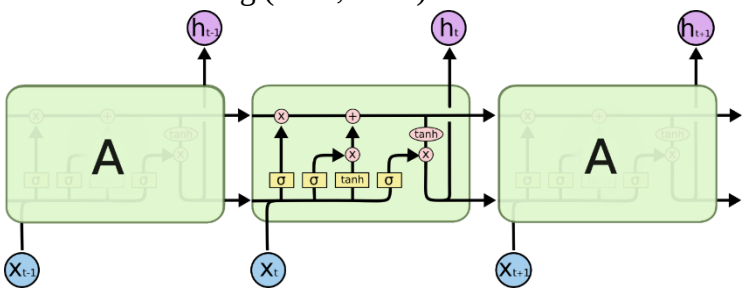


Figure 1: LSTM Structure

Before the data were used to train the LSTM network, they were split into a training set and a test set. The data were split by assigning the first 80 percent to the training set and the last 20 percent to the testing set. Next, the DateTime columns were removed from the training and test sets, leaving four-column data input in each set. Those columns were then normalized to between zero and one using feature scaling. Finally, the training and testing sets were split into input and target arrays. Each row of the input arrays contained a vector of length 249 and represented the input for a single training example. Each row of the target arrays contained a vector of length 4 and represented thefour4 target values for a single training example. Each of the four target values was the next 10 GDP production values directly following

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

the corresponding input vector of 249 values. The time window of inputs and outputs is then shifted by four values so that the first value in a given input vector is the same as the 11th value in the previous input vector. The outputs and targets do not overlap but rather are continuous in time.

The Keras Python library was used to build, train and test the LSTM network. The LSTM model was built upon Keras's sequential class. A single hidden layer of 50 neurons and an output layer of 6 neurons were added. The "Adam" optimizer was chosen for training. Once built, the LSTM was trained and tested using the training and test sets, respectively. The model underwent 25 epochs of training with a batch size of 10, a dropout rate of 0.2, and the "Adam" optimizer function. In addition to the test results, a 10-fold cross-validation process was used to evaluate the model. This entire building, training, and testing process was conducted twice with the time-interpolated data sets and once with the linearly interpolated data sets. 3. Results The single-layer LSTM network received 192 timesteps of the US GDP and its input vectors and forecasted 2 timesteps into the future. Each timestep was one month, so the model received just over 10 months of data as input and forecasted up to one month into the future. Both the single-layer models and the 5-layer model to which they were compared had 50 neurons in each hidden layer. The RMSE is the standard deviation of the residuals and measures how well a regression fits a set of data.

Section 4: Empirical Results of the Model

The actual versus forecasted plots of each country (Germany, China, Australia, and the US) showed similar results (see Figure 2,4,6 and 8). It mimics the actual values, especially in the case of Germany and Australia. China, on the other hand, the forecasted values reflect the trend but are more volatile and not as smooth as compared to other countries. In all the selected countries, the dip due to the pandemic was captured differently from each other. In some cases, the dip in the forecasted values is not as deep compared to other countries. A good example of this would be the United States which it showed the dip but not as deep as the actual impact of the pandemic (see Figure 8).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Figure 1: Germany Validation Loss:

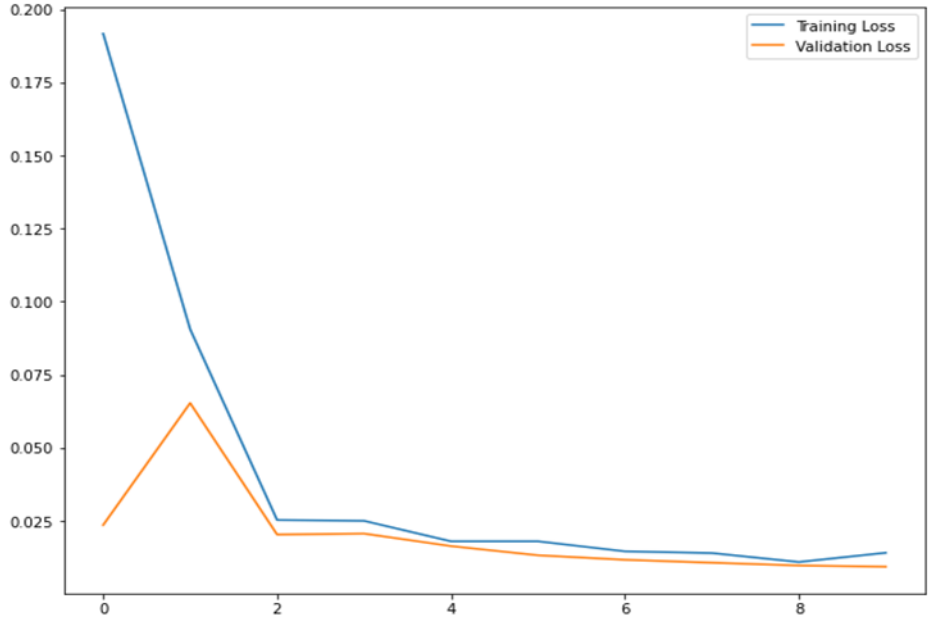


Figure 2: Germany Actual vs. Predicted:

MSE: 1.6361
RMSE: 1.2791

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Figure 3: China Validation Loss:

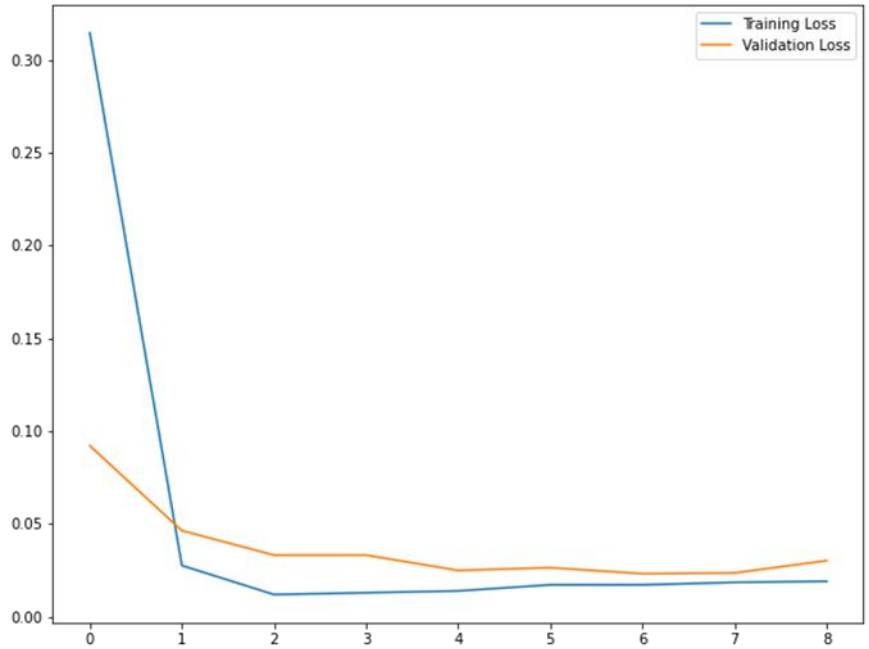
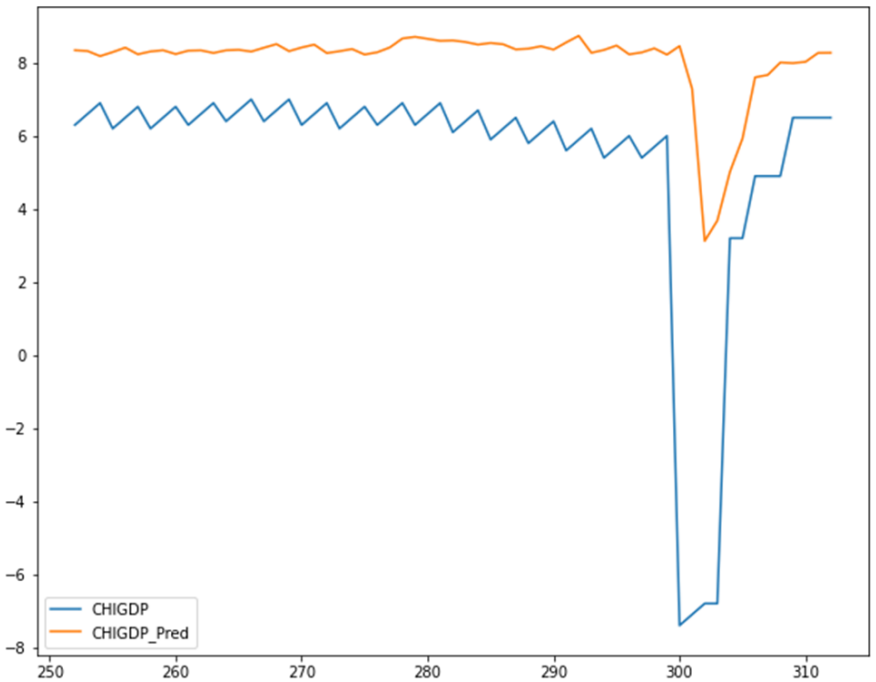


Figure 4: China Actual vs Predicted LSTM:



MSE: 15.0971
RMSE: 3.8855

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Figure 5: Australia: Training vs. Validation Loss

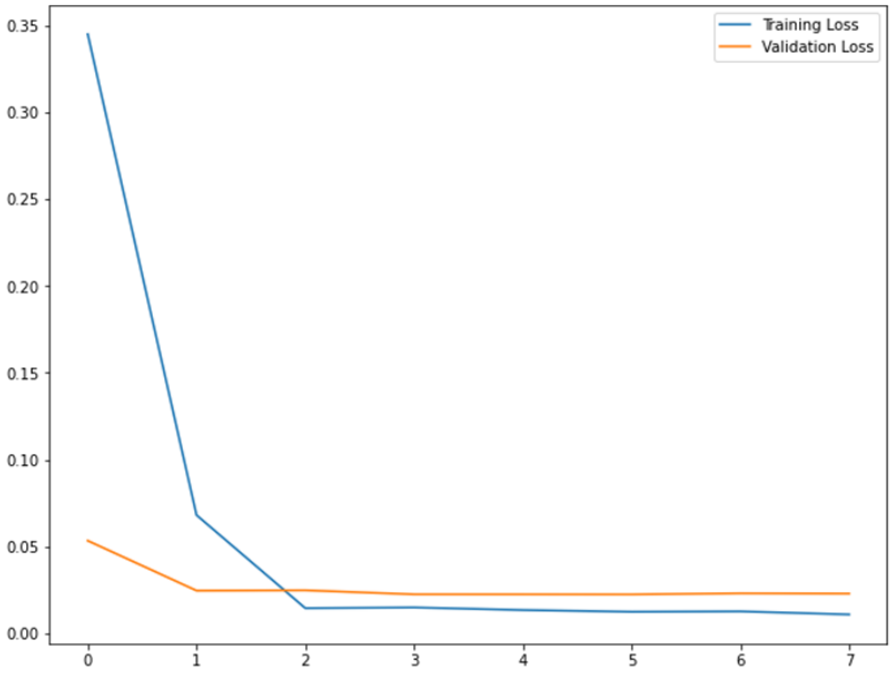
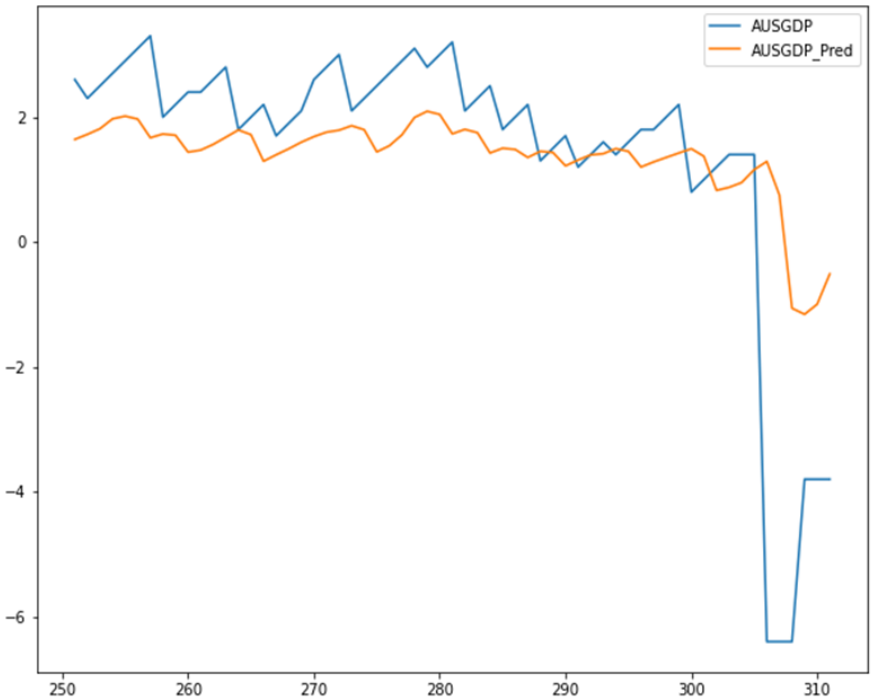


Figure 6: Australia: Actual vs. Predicted Value



MSE: 3.2043
RMSE: 1.7900

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Figure 7: US Training vs. Validation Loss

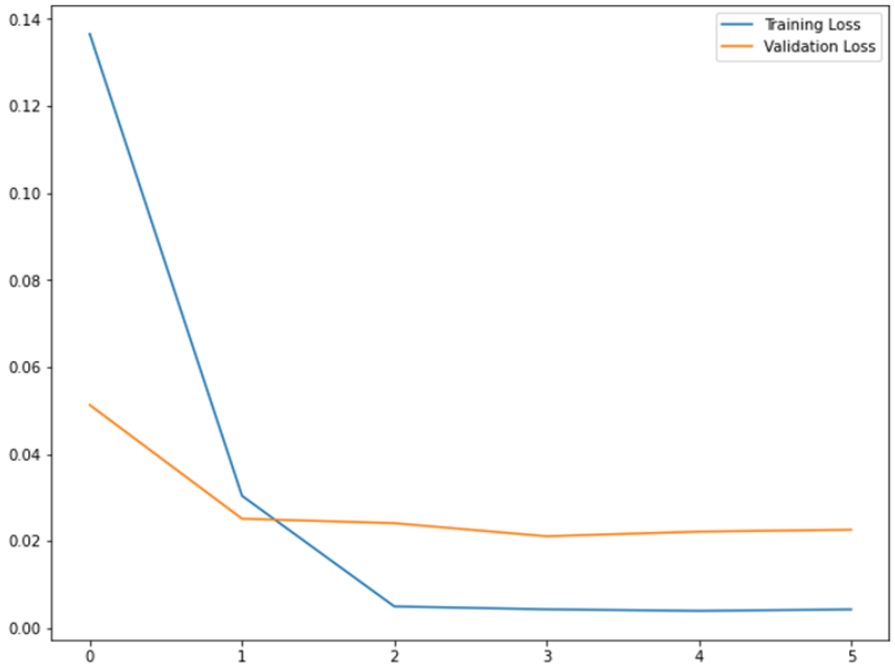
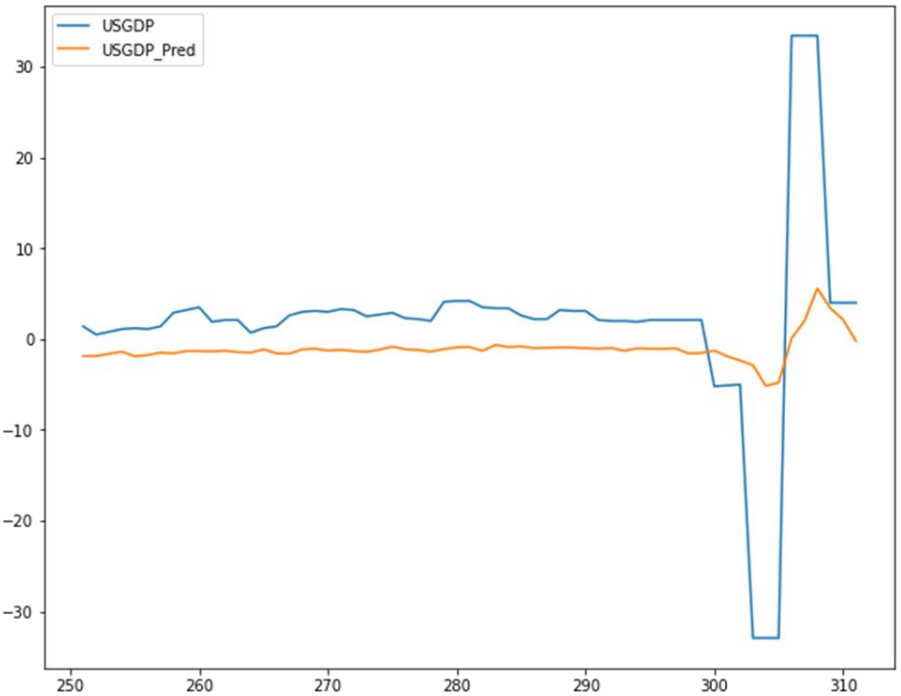


Figure 8: Actual vs Predicted US (LSTM)



MSE = 99.3383
RMSE = 9.968

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Table 1 shows results from testing the two single-layer LSTM models with the test sets and compares their performance of the pre-existing 5-layer LSTM network. The RMSE is the standard deviation of the residuals and measures how well a regression fits a set of data. The assumption is that the lower the MSE (Mean Square Error) or RMSE (Root Mean Square Error), the more robust the model is. There is no specific ideal number for MSE, but the lower, the better. In addition to the test data, 10-fold validation was used to evaluate the model. The training and validation loss results for each country are shown in Figures 1, 3, 5, and 7. The results for each are that both the training and validation loss decrease over various epoch repetitions. This indicates that the model is fit, and the likelihood of forecast error is minimal. Although the actual forecast of the actual values shows a similar trend, the shock from the pandemic was not captured significantly. The RMSE calculation for the US is 9.9 percent which is significant, indicating that the prediction error is not that big.

Table 1: MSE and RMSE for Selected Countries:

	MSE	**RMSE**
Germany	1.6361	1.2791
China	15.0971	3.885
Australia	3.2043	1.79
USA	99.338	9.968

As to the forecasted values beyond the observed data, the US and China exhibited a remarkable forecast by 2022 and 2023. China's growth on average initially would be around 8-9 percent which is consistent with other forecasts, while the US has an average growth rate of 3-4 percent in 2021-2022. However, by 2023, growth rates are bound to increase on an average of 20-30 percent, which is expected to happen due to pent-up demand after a pandemic. Economists surveyed by *The Wall Street Journal* project US gross domestic product will grow by 6.4 percent this year (WSJ, 2020). Germany and Australia showed much less aggressive growth than their US and China counterparts. The growth is positive but not as robust as compared to the latter. In the case of Australia, we have seen a future decline in their growth rates but this is in a further future forecast. Caution must be taken for the long-term forecast as it may not necessarily be feasible even using this long-term, short-term memory method.

Section 5: Conclusion and Final Thoughts

The remarkable performance observed through deep learning-based approaches to the prediction problem is due to the "iterative" optimization algorithm used in these approaches to find the best results. By iterative, we mean to obtain the results several times and then select the most optimal one,

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

i.e., the iteration that minimizes the errors. As a result, the iterations help an under-fitted model be transformed into a model optimally fitted to the data. The actual versus forecasted values seem to show a robust fit, as evidenced by the RMSE. Each country has different forecasted values beyond the actual data that is given. US and China indicated a more robust recovery phase while Germany and Australia have a tone-dow down recovery growth. Although this paper was written while the pandemic was still ongoing, the results indicated some consistency with what other forecasters would have speculated.

References:

1. Brainerd, E. & Siegle, M. V. (2003). The Economic Effects of the 1918 Influenza Epidemic. Discussion Paper n. 3791. Centre for Economic Policy Research. London: CEPR.
2. Doherty, B. (2020). *Coronavirus Economics History Health*.
3. Bloom, E., V. d. Wit, et al., (2005). Potential economic impact of an Avian Flu pandemic on Asia. ERD Policy Brief Series No. 42. Asian Development Bank, Manila. http://www.adb.org/Documents/EDRC/Policy_Briefs/PB042.pdf.
4. Chou, J., Kuo, N. F., & Peng, S. L. (2004). Potential impacts of the SARS outbreak on Taiwan's economy. *Asian Economic Papers*, *3*(1), 84-99.
5. Cuddington, J. T., (1993a). Further results on the macroeconomic effects of AIDS: The dualistic, labour-surplus economy. *World Bank Economic Review 7*(3), 403-17.
6. Cuddington, J. T., (1993b). Modeling the macroeconomic effects of AIDS, with an application to Tanzania. *World Bank Economic Review 7*(2), 173-89.
7. Garrett, T. A. (2007). Economic effects of the 1918 influenza pandemic. *Federal Reserve Bank of St. Louis*, *26*.
8. Hyams, K. C., F. M. Murphy, et al., (2002). Responding to chemical, biological, or nuclear terrorism: The indirect and long-term health effects may present the greatest challenge. *Journal of Health Politics, Policy and Law 27*(2), 273-91.
9. Jordà, Ò., Singh, S. R., & Taylor, A. M. (2020). *Longer-run economic consequences of pandemics* (No. w26934). National Bureau of Economic Research.
10. Keogh-Brown, Marcus, McDonalds, Scott et al. *The Macroeconomic Costs of A Global Influenza Pandemic.* Available at: https://www.gtap.agecon.purdue.edu/resources/res_display.asp?RecordID=2755.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

11. Lee, J.W & McKibbin, W. (2004). Estimating the Global Economic Costs of SARS. in S. Knobler, A. Mahmoud, S. Lemon, A. Mack, L. Sivitz, and K. Oberholtzer (Editors), *Learning from SARS: Preparing for the Next Outbreak*, The National Academies Press, Washington DC (0-309-09154-3)
12. Litterman, R. B. (1979). Techniques of Forecasting Using VAR. Working paper no.115 Federal Reserve Bank of Minneapolis, Minneapolis, MN Nov 1979.
13. Meltzer, M. I., N. J. Cox, et al., (1999). The economic impact of pandemic influenza in the United States: priorities for intervention. *Emerging Infectious Diseases 5*(5), 659-71.
14. Siami-Namini, S., Tavakoli, N., & Namin, A. S. (2018, December). A comparison of ARIMA and LSTM in forecasting time series. In *2018 17th IEEE International Conference on Machine Learning and Applications (ICMLA)* (pp. 1394-1401). IEEE.
15. Olah, C. (2015). Understanding LSTM. Colahs Blog, https://colah.github.io/posts/2015-08-Understanding-LSTMs/.
16. Schoenbaum, S. C., (1987). Economic impact of influenza. The individual's perspective. *American Journal of Medicine 82*(6A), 26-30.
17. Sunstein, C. R., (1997). Bad Deaths. *Journal of Risk and Uncertainty 14*(3), 259-82.
18. *Wall Street Journal* (2020). Trump and the Stock Market.
19. Viscusi, W. K., J. K. Hakes, et al., (1997). Measures of mortality risks. *Journal of Risk and Uncertainty 14*(3), 213-33.
20. Yildirim, D., Toroslu, I., & Fiore, U. (2021). Forecasting Directional Movement In Forex data using LSTM with Technical and Macroeconomic Indicators. Financial Innovation.

ESJ Social Sciences

Urban and Social Regeneration in Abruzzo: An Open Problem and a Possible Way Forward

Professor Roberto Veraldi, M.Sc.
Mrs. Sandra Carballar, M.Sc.
University G. D'Annunzio, Chieti-Pescara, Italy

Doi:10.19044/esj.2022.v18n12p15

Submitted: 10 January 2022
Accepted: 30 March 2022
Published: 30 April 2022

Copyright 2022 Author(s)
Under Creative Commons BY-NC-ND
4.0 OPEN ACCESS

Cite As:
Veraldi R. & Carballar S. (2022). *Urban and Social Regeneration in Abruzzo: An Open Problem and a Possible Way Forward*. European Scientific Journal, ESJ, 18 (12), 15. https://doi.org/10.19044/esj.2022.v18n12p15

Abstract

Urban and social regeneration occurs through the recovery of disused built-up areas, requalifying them with respect to environmental sustainability and the recovery of the relational relationship between social actors. In the last few years, the practices of sociourban regeneration have made great strides, establishing themselves as an opportunity to promote policies of social participation, stimulating employment, and local entrepreneurship. Sociourban regeneration can thus be defined as a set of actions that focuses on the recovery of sociality and the requalification of an urban space. The regeneration process takes place by means of rehabilitation interventions at the level of infrastructures and services, thereby limiting the consumption of land in order to protect environmental sustainability. Regeneration also allows the community to re-appropriate and re-live the regenerated spaces with clear improvements in the quality of life and in the social, economic, and environmental spheres. This paper focuses on exploring the relationship between urban and social regeneration and economic growth in Abruzzo (Italy) by using a set of indicators that measures equitable and sutainable well-doing (Bes). A descriptive analytical method was adopted to evaluate the level of urban quality in order to identify the most appropriate interventions leading to sustainable local development. The main finding indicates that Abruzzo shows interesting potential, but it has yet a long way to go in the area of urban and social regeneration.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Keywords: Social regeneration, urban regeneration, social policies, labour policies

I. Introduction

Abruzzo can be considered a paradigmatic region. From the post-war period to the present day, it has basically experienced two paths of economic growth. The first was the transition from a situation of extreme backwardness to one of great productive development, which has placed the region in a prestigious position among all the regions of southern Italy and seventh in Italy for added value and employment in the industrial sector. The second turning point occurred during the 2000s for a whole series of reasons such as globalization, technological intensity, competition from emerging countries, and innovative processes which curbed its productive momentum.

The emergence of the Abruzzo's structural model can be traced back to two phenomena. On the one hand, it is becoming increasingly convenient for large companies to relocate parts of their production to geographical areas where they can cut labour costs, increase productivity, and reduce the trade union conflicts typical of large companies, which can be explained by the crisis linked to the Fordist concept of vertical cycle production. On the other hand, it is the skills and productive knowledge existing in the area that pushes former artisans and workers to turn into small entrepreneurs. This is due to the low barrier to entry in low-added value sectors and the abundance of financial resources.

Abruzzo's evolutionary path, characterized by the legitimization of the role of small enterprises and the stimulating presence of large enterprises not engaged in basic sectors, reaches a turning point in the territorial implications of major changes in the international economic scenario. As a result, the financial crisis of 2007/2008 made the general economic picture even more complex. However, the economic model entered into crisis before this last event (Mulino, 2014). There is no doubt that an initial cause of the slowdown in production can be attributed to the end of European financial subsidies linked to the so-called Objective 1.

Another aspect to focus on is innovation. The great economic transformations, in addition to the phenomenon of globalization, have as their reference point the digital economy, technology, and innovation in general. This is a profound change that is pushing towards more advanced production structures so as not to remain trapped, as it has happened, in low growth.

More so, the changes that have taken place over the last few years have introduced a number of elements of uncertainty into the Abruzzo 'economic model', which cannot be conceived and assessed using the tools of the past. Firstly, there is the problem of revitalising the system of widespread industrialisation. The foreign projection of SMEs is one of the gaps that must

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

be bridged. It is also important to note that small enterprises represent the backbone of the production system, which is an important reality in the economic landscape of Abruzzo. Furthermore, greater versatility and technological standards have ensured competitive equilibrium. As a result, the evolutionary path requires that the romantic vision of the role of small enterprises is put aside since it passes through the removal of the constraints that hinder their growth. The spread of new technologies implies an investment-risk combination that in some cases may not be compatible with a modest production scale. Thus, entrepreneurial dwarfism is no longer seen as an asset. Secondly, it seems appropriate to define the Abruzzo 'model' within a strategic vision, which indicates priorities, resources, and objectives to be pursued. Also, it is significantly important to seize the opportunities offered by the European "Recovery Fund" programme, which focuses on the transition towards digital technologies and sustainability. In this context, urban regeneration can be a driver of new growth, massive public investment, and new quality jobs.

This paper aims to make a contribution to the urban and social regeneration studies at regional level by analyzing the relationship between economic growth and territory. Methodologically, a descriptive analytical approach based on socioeconomic indicators was adopted to quantify the levels of urban quality.

The structure of this paper is as follows: In the second section, the main links among territory, economic growth, as well as the salient features of the sociourban regeneration issue in Abruzzo are outlined. In the following section, the descriptive evidence from the Abruzzo's economic evolution and the data used in the analysis are presented. The methodology and the main results are given in the fourth section. The last section contains the conclusions.

II. Theoretical Framework

There is a very close relationship between territory and economic growth. It is a significant link between the prospects of urban centers and development prospects. The territory cannot be conceived as a mere physical-technical space, but as a place where local development processes are activated and paths of interaction between the economy, society, and the environment are established (Njuguna et al., 2014; Ipole & Okpa, 2019). Even in a dynamic context, such as the current one in which the principles of globalization prevail from an economic point of view, territorial management maintains its importance intact. Although the competition had the role of companies as a reference point in the past, the territory provides the tools for a sustainable, high-profile economy today. If the territory fails, businesses fail also. A well-organized urban center in terms of public services, logistics, and

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

social infrastructure helps to create significant competitive advantages (Ali & Rafique, 2015). Subsequently, in addition to spatial organization, microeconomic and macroeconomic aspects must be considered in order to better identify the factors of growth at regional level, including factors that appear complementary and intrinsically linked to the territory (Fratesi & Senn, 2009).

On the basis of these considerations, the territory becomes a crucial variable in explaining the opportunities that are seized in some regions and the constraints placed on the development process. In addition, space ceases to be a source of cost for businesses to take on the role of a favorable environment for them. This creates external economies and a meeting point between market forces which allows the formation of social relations (Garofalo & Mazzoni, 1994).

The link between the two areas of analysis shows that the question of the regeneration of urban centers cannot be dealt with separately from the economic question. The two phenomena which seem to condition each other appear to be somewhat interdependent and manifest the need for a study that is as integrated as possible (Favaretto, 2000).

On the one hand, the urban center contains factors relating to architectural and construction quality, primary services, and problems connected with land use or environmental degradation. On the other hand, the knowledge of certain economic indicators may provide significant elements for a complete assessment of the area.

In addition, the knowledge of certain economic indicators can provide significant elements for a comprehensive assessment of the area. Certainly, the largest urban centers are also places where local interrelationships can enable the formation of an innovative milieu or nodes of interchange and flows in global networks. The connections between urban centers and economic phenomena are highlighted in Figure 1. As can be seen from the figure in the circuit highlighted, PIL, employment, external projection, characteristics of the productive system, infrastructural endowment, tourist intensity, and welfare system are the indicators that are considered most appropriate to outline the characteristics of urban centers from the economic point of view.

Therefore, it is this mix of knowledge that prompts a rethink of urban and building policies, which must necessarily be anchored to economic issues. Consequently, urban centers should be perceived not only as simple spaces but also as a broader container where actors, the availability of resources, territorial perspectives, and individual and collective needs converge. This is a top-down approach where other indicators of a more particular and specific nature can be added to those mentioned above. These include the entrepreneurship index which measures the ratio between the number of businesses and the resident population; the size index which indicates the

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

number of employees in relation to the total number of businesses; and the entrepreneurial dynamism rate which is the ratio between the birth rate and the death rate of businesses. Particular attention can also be paid to the study of small and medium-sized enterprises that are present in a delineated area. This can be done through the concentration index, which provides the number of employees of small enterprises within the considered territory compared to the number of employees at regional level. A further indicator to be taken into account is the sectoral specialization index, which aims to identify the intensity of productive specialization of the small enterprises operating in the area so as to include them in the circuit of enterprise networks.

Figure 1. The main areas of evaluation
Source: Mascarucci (2011)

Also with regard to the strictly territorial aspect, there are indicators capable of highlighting the functional characteristics of the urban center. An example comes from social infrastructures (institutions, health, culture, etc.) that are fundamental for improving the productivity of the labour force and raising the rate of entrepreneurship (Perloff, 1963). This type of infrastructure is obviously different from the tangible infrastructure (road network, motorways, ports, airports) and the intangible infrastructure that affects the innovation rate of the area. A further element of analysis is the "social mobility" index referring to the use of public transport. Other important indicators are outlined as follows:

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

a. the endowment of services of the urban center, which includes the surface of green areas on the total urbanized land and the surface of other public services, i.e., the use of urban land;
b. b. the rate of urbanization of the territory, which is obtained by measuring the agricultural and productive surface area on the total urbanized land;
c. c. the accessibility of the territory, which is calculated on the basis of the number of incoming cars;
d. d. the naturalness of the territory, which expresses the restricted surface area over the total urban area.

Once the cognitive elements of the territorial area, its potential, and possible criticalities have been defined, it is possible to prepare a cost-benefit analysis aimed at assessing the most appropriate interventions. Basically, it is a question of identifying the valuation gaps, which should be the focus of the strategic plan, with projects that are sustainable in terms of urban planning and economic viability.

Figure 2 shows a possible virtuous circuit aimed at illustrating the interdependence between the two disciplinary profiles with the final objective of sustainable local development. Cost-benefit analysis appears to be significantly important. It not only helps to define the content of the strategic action to be pursued but it also assesses the net social benefits of the intervention program. It is based on the principle of "Paretian equilibrium", which leads to the evaluation of the social value of the intervention in a specific area without diminishing the benefit of other areas. The reasons that underline the importance of the economic study in the context of urban centers include the following: to grasp the economic and social trends of the territory, to identify the vocations and peculiarities, and to outline the priorities on which to focus so as to enrich the cognitive trajectory of the urban center in order to live it in a more concrete way.

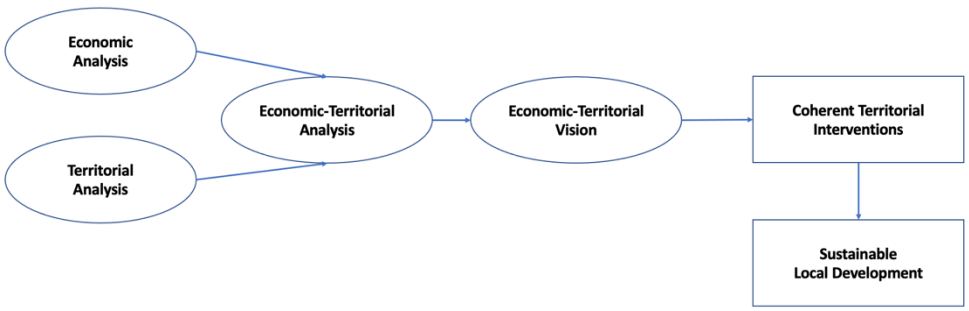


Figure 2. Economy, territory and sustainable development
Source: Mascarucci (2011)

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

In recent years, as a result of the pandemic, both European (Next Generation EU) and national (PNRR) documents have focused on two key conditions for economic growth, namely digitization and sustainability. Digital transformation implies an organizational revolution on the part of businesses and public administration in order to overhaul business processes and administrative activity. However, the central issue indicates that there will be no prospects for growth if these do not have a matrix of sustainability. In a framework of economic incentives, environment and sustainability represent an opportunity to be cultivated as reference points for the new generations. Generally speaking, the reduction of carbon emissions in production processes cannot be postponed and the objective of reducing emissions by 55-60% by 2030 must be pursued.

At the same time, there is a need to use sustainable materials because of the assumption that sustainability can now be seen as a change in the production paradigm, thereby influencing markets and consumer activity. In other words, it is an essential component for the future of the economy and for being able to compete in innovative terms, knowing how to combine profits and social responsibility for companies. In addition, the theme of sustainability has always been present in economic literature. As early as 1981, the economist Daly Herman (1981) defined the criteria as:

- the principle of sustainable efficiency: resources must be consumed at a rate that allows the environmental system to replenish them;
- the principle of absorption capacity: the production of goods must not generate waste and pollution that cannot be absorbed by the system in a reasonable short time; they must not produce cumulative effects. The cycle of transformations of natural capital is in equilibrium if the speed of the resource consumption phase is equal to the speed of the regeneration phase.

The issue of regeneration of urban centers is part of this broad problem. Regeneration is the tool to direct the transformation of urban centers towards the criteria of environmental sustainability. This is in line with strong positive implications with regard to the risks linked to climate change (Barbarossa et al., 2013).

In this context, the environment takes on a priority value. This is because it is not one of the many problems to be tackled on the territory, but the great issue of the future that will define the forms of economic and social development. Thus, for a long time, the lack of attention paid to the environment implied that the effects of urban planning choices on economic issues were overlooked, forgetting that many inequalities, including social inequalities, have an environmental matrix (Uzobo & Dawodu 2015; Mostafa 2018; Quansah et al., 2020). An effect of the environment-territory-economy

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

nexus is the stimulus that the environment can exert on internal demand through the joint action of consumption and investment. From this point of view, the economic effects may concern two specific dimensions (Agnoletti & Bocci 2014). The first, which is of a proactive nature, involves the use of land for productive and residential purposes, as well as the transformation of the building stock and infrastructural choices. The second, which is of a constraining nature, involves the limitation of building activity. However, it determines the increase in environmental and landscape quality derived from it.

The concept of urban quality therefore takes on a high profile meaning and is understood as the capacity of the urban environment to satisfy the different needs emerging from the territory in an integrated form, i.e., in qualitative and quantitative terms (Martincigh, 2003). More so, the final result of material and immaterial needs is the intersection between supply and demand. This is observed between the demand for liveability and efficiency expressed by the local community and the capacity of the city (urban center) to satisfy it (Bagnasco, 2005).

Accordingly, urban quality interprets different individual and collective needs and becomes an expression of social, environmental, economic, and cultural components. This is based on a qualitative conception as a result of the encounter between environmental quality, social quality, and the quality of life (Agnoletti & Bocci, 2014).

Figure 3 below explains the implications of the notion of urban quality. Also, in addition to the aspects mentioned above, other factors are derived such as the natural and anthropic system, the socioeconomic system, and cultural elements.

In this context, the need for intervention on the regeneration of urban centers appears to be growing. Legislative Decree No. 32 of April 18, 2019, defines urban regeneration as the "systematic complex of urban and building transformations in urban areas on areas and building complexes characterized by urban, building, environmental and socioeconomic degradation". Furthermore, it is not only a matter of material adjustments but the objective is a social regenerative action aimed at improving the living conditions of citizens and at generating a sort of virtuous circle between regeneration and development. The aim is to regenerate society by improving the living conditions of citizens and generating a virtuous circle between regeneration and development. An example of this are disused industrial buildings. Regeneration means transforming these abandoned factories into a new use linked to safety and environmental protection and, importantly, stimulating new investment and economic growth. In other words, it means re-appropriating and reviving the community of regenerated spaces on a human

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

scale with positive effects on the quality of life and the social and economic context.

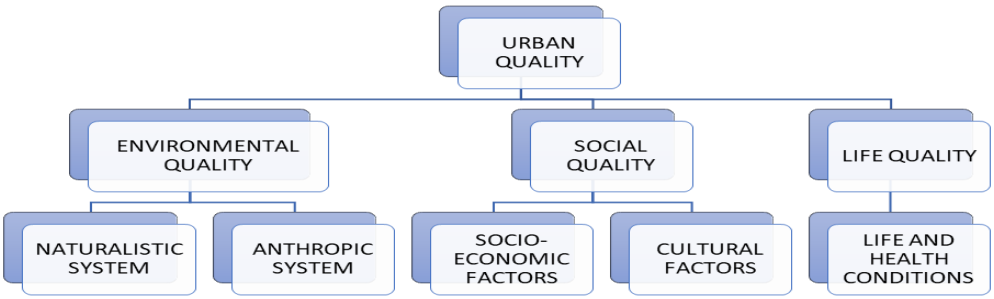


Figure 3. The components of urban quality
Source: De Ciutiis (2008)

In order to be more precise, the National Plan for Sustainable Urban Regeneration indicates the following objectives:

- the securing, maintenance and regeneration of the public and private building stock to reduce seismic and hydrogeological risk;
- the drastic reduction of land consumption and waste of buildings in terms of energy and water, through energy and ecological districts;
- the re-evaluation of public spaces, urban green spaces and neighborhoods services;
- the rationalization of digital infrastructures;
- the safeguarding and revitalizing of historic town centers.

This complex but useful action can be seen from an economic point of view which include the following:

- a reduction in energy expenditure with the possibility of shifting resources to other areas of the economy, both at municipal and regional level;
- improvements in the labour market, thanks to the formation of new areas of employment;
- the preservation of the cultural heritage with positive effects on tourism;
- the creation of an urban habitat conducive for social life through reduced pollution and greater safety.

III. Data and Descriptive Evidence

It is important to focus on the first economic phase, which is development, because it was during this period that the modern Abruzzo was

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

born and the productive characteristics that are still the region's strong points today were formed. From the 1970s to the 1990s, a sort of industrial route to development was outlined (Mauro, 2019), with a process of convergence towards the most advanced areas of the country. In 1991, the industrialization index was almost twice as high as in the "Mezzogiorno" and is slightly higher than the national average (Table 1).

Table 1. Industrialization index (1951 – 2001)

	1951	1961	1971	1981	1991	2001
Abruzzo	**4,4**	**5,4**	**7,7**	**10,7**	**11,5**	**10,9**
L'Aquila	3,7	4,4	6,1	9,4	8,6	8,2
Pescara	5,5	6,9	8,0	8,5	9,9	7,6
Chieti	4,3	5,0	8,1	11,1	12,5	12,2
Teramo	4,6	6,0	9,0	17,3	14,8	14,7
South	4,1	4,5	5,4	6,2	5,4	5,7
Center-North	11,8	14,9	15,6	16,4	14,6	13,9
Italy	9,3	11,1	12,1	12,8	11,3	11,0

Source: our elaboration on ISTAT data.

PIL confirms this growth even more, as it goes from a value of around 13 thousand billion lire to around 26 thousand billion lire, an increase of 100%. In this regard, if productivity and employment rates are combined (Figure 1), Abruzzo's evolutionary trend clearly emerges (Svimez 2000).

PIL confirms this growth even more, as it goes from a value of around 13 thousand billion lire to around 26 thousand billion lire, an increase of 100%. In this regard, if productivity and employment rates are combined (Figure 4), Abruzzo's evolutionary trend clearly emerges (Svimez, 2000).

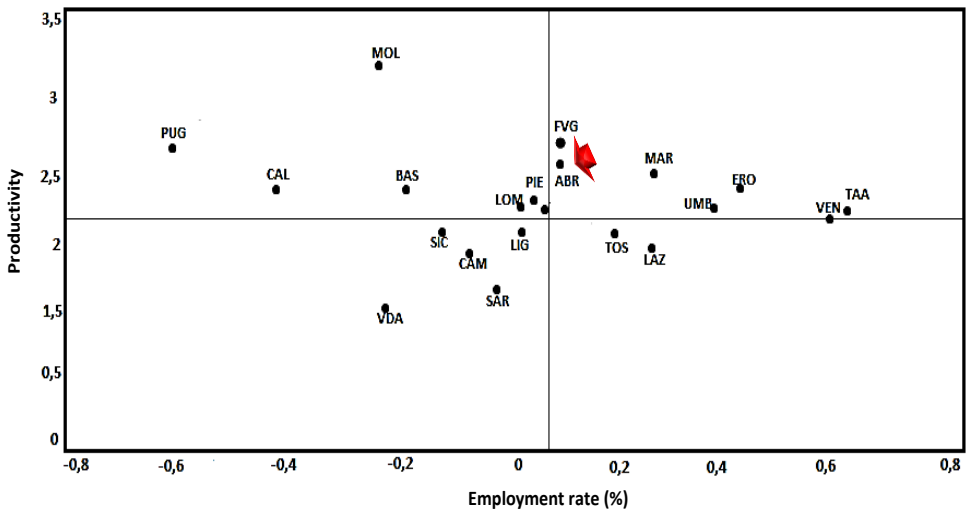


Figure 4. Productivity and employment rate (1970-1998)
Source: Svimez (2000, 2001)
Note: The list of the Italian regions and their acronyms are shown in Table 1.A (Appendix).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

The performance of the labour market also provides some interesting indications that confirm the above. Figure 5 illustrates the phenomenon very well, considering that the unemployment rate in the region shows a positive gap of about 14 points with respect to the "Mezzogiorno" (Svimez, 2000).

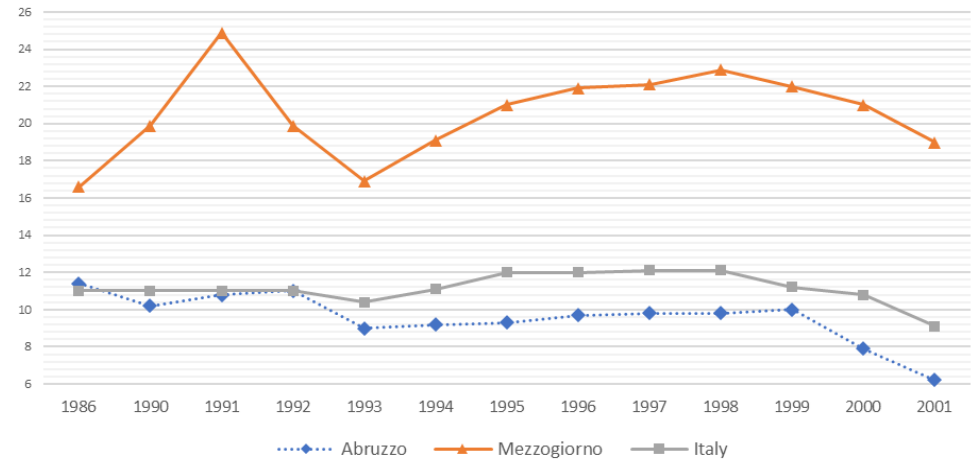


Figure 5. Unemployment rate (1986-2000)
Source: Svimez (2000, 2001)

There are essentially two factors that explain this impressive development. The first refers to the extraordinary diffusion of a multitude of small enterprises in the territory, based on a theoretical scheme that leads to the logic and functioning of industrial districts (Becattini, 2000). In other words, the industrial system is made up of small independent enterprises, organized on a local basis, which tends to specialize in a particular production phase according to the relationships that exists between competition and cooperation (Pyke, 1992).

The industrial atmosphere, following the Marshallian conception, productive specialization, collective enterprise, tacit and codified knowledge, seem to be the formative elements of the district. Through the concentration of enterprises, Schumpeterian-type competition is stimulated on the one hand and, on the other hand, cooperation mechanisms along the value chain. By virtue of these characteristics, the district is directly linked to the territory, which becomes both an asset, because it is the site of production and social settlement, and a project, because it is the expression of entrepreneurial initiatives. Well, from this point of view, the ISTAT (1997) surveys put Abruzzo in a position that can be described as positive. The Institute of Statistics calculates 19 SLL (local labour systems) and 6 industrial districts for the region, with a specialization in textiles-clothing, leather and footwear, and household goods. Considering the criterion of gradualness, type 2 industrialized areas, that is, with a lower entrepreneurial concentration,

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

employ more than 50% of the workforce compared to between 10% and 33% for the regions of the Third Italy.

The establishment of large multinational companies is the other component of the impetuous development. Thus, these companies are attracted by the presence of widespread incentives and a network of contextual economies that make the region preferable to other areas in the "Mezzogiorno" (infrastructure, absence of organized crime, institutions). The location of these businesses has significant effects on the territory. Firstly, the backwardness circuit is broken according to the scheme described by Hirschman (1968); secondly, a sort of industrial culture spreads in the area, which leads to the stimulation of innovation; finally, the spin-off phenomena are produced in the area as a result of the innovative growth of locally small and medium-sized enterprises, which aim to take advantage of the induced activity required by large companies for individual work phases. The model described allows the region not only to increase employment levels and GDP, but also to project the region towards international markets, resulting in an export/GDP ratio of around 27% compared to 12% in the "Mezzogiorno" and slightly above the national average.

Abruzzo, as a result of its powerful development, was the first region to leave the incentive mechanisms with a GDP per capita of around 90% of the European average. Hence, this is much higher than the maximum value of GDP per capita of 75% required by EU bodies in order to have access to subsidized financing. The exit from Objective 1 leaves the Abruzzo system in a state of incompleteness, in the sense that many SMEs would have had further need of incentives to consolidate the exit path and to introduce innovative elements. The resulting cost burden in terms of credit, taxation, and labour entails considerable difficulties for a rather young productive apparatus in need of growth. This interrupts the virtuous incentive-business-territory circuit, based on a widespread system of SMEs, which had been the driving force behind the region's industrial development. Thus, this leaves an entrepreneurial and territorial path of undoubted interest halfway through. Thereafter, there are major structural transformations that are accompanying all economic systems and imposing new production models and intense innovation processes, as in the case of globalization. The very entry of emerging countries, particularly China, into the market is affecting some typical Italian-made products. This creates a profound asymmetry with the industrial districts of Abruzzo in terms of trade union constraints, environmental standards, labour costs, and currency dumping. It should be noted that with the introduction of fixed exchange rates and the euro, one of the possibilities experimented in the past of relying on the price factor (devaluation) to stimulate exports has also disappeared.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

The reference is to a production structure unbalanced towards small enterprises, which are unable to achieve critical mass to face change and competition. In fact, as the data on exports show, the sectors most affected are those with low-added value such as textiles-clothing, furniture, and leather. In particular, the first sector suffers a strong contraction in international trade. ISTAT data show that in the 2008/2020 period, the sector in question, together with leather and accessories, suffered a 65% drop in exports. This is in contrast to Italy which recorded a 12.8% growth in the same period. It should be noted that this sector once held a very respectable position in Abruzzo. In 1995, for example, its incidence on total foreign sales was 10%, placing it third in the regional ranking; in 2020, the incidence dropped to 3.1%, occupying seventh place. For the province of Teramo, the sector, while still occupying a leading position, has fallen by 33%.

The gap highlighted above between a few large companies and many micro and small enterprises who are engaged in traditional activities helps to explain the region's lag in terms of productivity and innovation. With regard to the productivity argument, analyzing the number of hours worked in the manufacturing sector and setting the year 2000 equal to 100. This is a weak trend that emerges in the region and is lower than the same average in Italy (Figure 6).

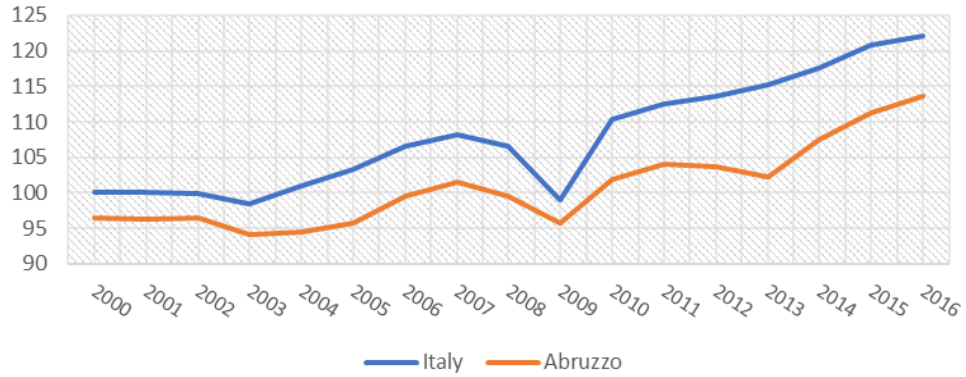


Figure 6. Labour productivity in the manufacturing sector (2000 = 100)
Source: our elaboration on Istat data

The study of the European Commission underlines a similar problem when measuring competitiveness index. The analysis covers 268 European regions and takes into account indices related to efficiency, innovation, and some basic indicators (health, stability, institutions). However, the lowest value occurs in the item 'Institutions', while overall Abruzzo ranks 264th.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Table 2. Regional competitiveness index (2019)

	Abruzzo
Total RCI 2019	34,2 (213)
GDP per capita (UE28=100)	83,1 (153)
Institutions	-1,65 (264)
Infrastructure	-0,71 (176)
Health	0,47 (54)
Higher education	-0,78 (224)
Labor market efficiency	1.26 (238)
Innovation	-0.50 (179)

Source: European Commission

The trend in Figure 3 and the results of the European survey clearly show how important it is to direct production towards levels of higher efficiency and specialization in order to avoid a slow but progressive vulnerability.

Consequently, the first key to understanding the economic evolution of Abruzzo seems to emerge from the above considerations. The changes described help to explain many local productions and to restrict the flow of exports to the rest of the world by SMEs. The slowdown in growth occurred before the great financial crisis of 2007/2008. This is reflected in the evolution of GDP in the period 2001-2007. As Svimez (2018) notes, the cumulative change in GDP is 4.2% against a national average of 8.5% (Mezzogiorno 4.5%). It is clear that that there is a turning point in the development path, marking the passage from a phase of high growth to another of lower evolutionary intensity.

The 2007/2008 financial crisis prompts further reflection. Certainly, the crisis is global, starting with the real estate market (the so-called subprime) in the United States and then spreading to the internal financial market and the real economy. The effects of the crisis on stock markets, GDP, employment, and credit are devastating. At the European level, in 2009, GDP fell by more than 4% and unemployment rose to more than 10%. The deficit/GDP ratio worsened with an average of 6.4%, which practically double the Maastricht benchmark of 3%. Obviously, Italy is suffering the negative consequences of the crisis, and Abruzzo even more so in view of its characteristics as a manufacturing economy that is open to international trade. The Abruzzo model is further weakened by this situation, both in terms of production and employment. By surveying all the Italian regions in terms of GDP and employment units, Figure 7 shows how Abruzzo (also due to the effect of the earthquake that hit the L'Aquila area) has suffered a rather substantial drop in the national ranking of the most affected regions.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

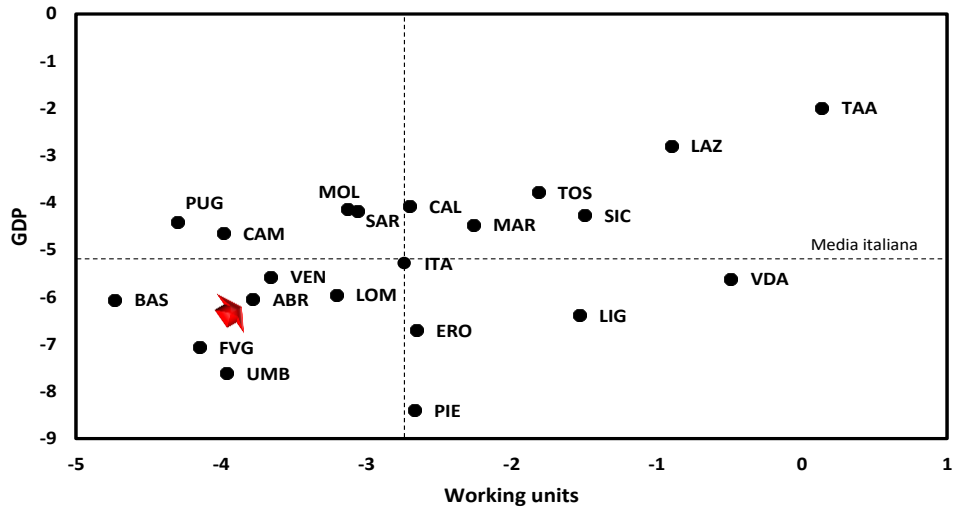


Figure 7. The effects of the crisis in Abruzzo
Source: our elaboration on Istat data.
Note: The list of the Italian regions and their acronyms are shown in Table 1.A (Appendix).

Subsequently, the following years up to the most recent ones do not substantially change the economic development of the region. The pace of recovery appears rather slow and the consequences on the unemployment rate emerge with particular clarity from Figure 8, which considers the 2008-2019 time span. This is a rather significant interval to identify a path, certainly not exciting, that brings the already mentioned rate from 6.6% in 2008 to 11.2% in 2019.

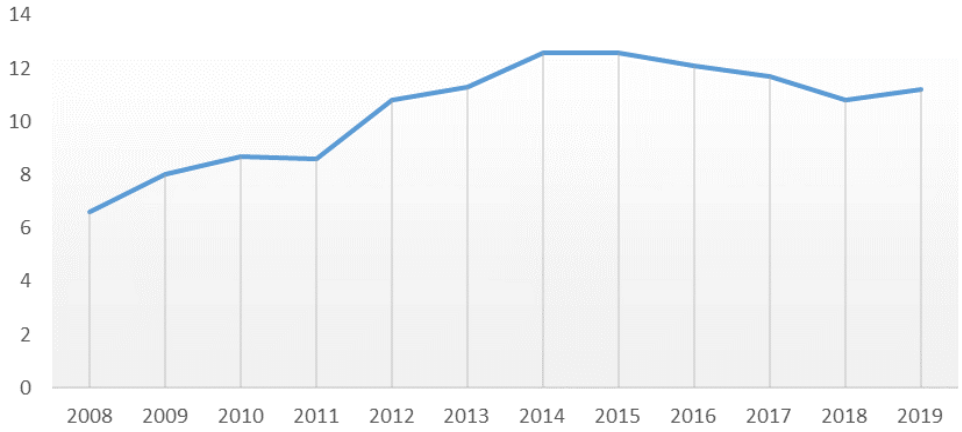


Figure 8. Abruzzo unemployment rate (2008-2019)
Source: Istat

Concerning data relating to the urban quality, the data of the Italian National Institute of Statistics (ISTAT) about equitable and sustainable well-

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

being (Bes) will be used. Also on the regional level, the Bes project aims at evaluating the progress of society not only from an economic perspective, but from a social and environmental perspective too. By adopting a multidimensional approach, the database collects information on 152 indicators related to production and economic activity as well as measures of inequality and sustainability.

IV. Methodology and Results

There are different methodologies to quantify the levels of urban quality. There are also numerous indicators for defining fair and sustainable well-being which ranges from the environment to economic well-being, from education to landscape and cultural heritage, and from the quality of services to health and safety. As was previously mentioned, this paper relies on descriptive analytical method according to which selected socieconomic indicators are important factors to provide a record of the urban and social regeneration. The aim is to complement the indicators related to economic activity discussed in the above section with measures of the key dimensions of well-being, together with measures of inequality and sustainability.

Intervention in the most degraded urban fabric, which is characterized by obsolete buildings in terms of both energy impact and earthquake resistance, is one of the central themes of the regeneration process. Some indicators dedicated to Abruzzo in comparison with Italy help to better understand the phenomenon. A general figure concerns the share of degraded territory on the total land surface. According to ISTAT, this index is 5.11% (Italy 7.6%), with a fragmentation of natural and agricultural land of 35.8%. Even other indicators seems to be more significant such as the percentage of people living in urban dwellings with structural (humidity) or overcrowded problems. The percentages are respectively 16.3% and 29.7% for Abruzzo (Italy 13.2% and 33.5%).

The importance of tackling the problems of urban decay and stopping the consumption of public land and new territory can be seen in Tables 3 and 4. Table 3 considers the number of unauthorized buildings per 100 authorized buildings. The figure of 31.2 is almost double that of Italy (17.7) and is not comparable with the North. ISTAT has also calculated the per capita land consumption given by the ratio of m^2/inhabitant, where Abruzzo has a consumption index higher than the national average.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Table 3. Unauthorized building

	2016	2017	2018	2019
Abruzzo	**36,4**	**36,3**	**33,0**	**31,2**
Mezzogiorno	48,2	49,3	48,3	45,2
Center	19,2	21,4	19,1	17,5
North	6,4	6,2	6,1	5,9
Italy	19,6	19,9	18,9	17,7

Source: Istat

Table 4 investigates the density of historical green areas, that is the area in m^2 of historical green areas and urban parks of considerable public interest in provincial capitals per 100 m^2 of urbanized area. Once again, the region occupies a rearguard position (0.7) compared to all the other districts considered.

Table 4. Historical green density

	2016	2017	2018
Abruzzo	**0,7**	**0,7**	**0,7**
Mezzogiorno	1,1	1,1	1,1
Center	1,6	1,6	1,6
North	2,4	2,4	2,4
Italy	1,8	1,8	1,8

Source: Istat

The issue of landscape deterioration also emerges from the analysis of the percentage of people aged 14 and above. Thus, landscape deterioration caused by excessive building is one of the five most worrying environmental problems out of the total number of people aged 15 and above.

Table 5. Concern about landscape deterioration

	2016	2017	2018	2019	2020
Abruzzo	**12,3**	**12,7**	**12,1**	**10,5**	**10,9**
Mezzogiorno	11,3	11,6	12,0	10,5	11,1
Center	15,1	14,8	14,1	12,5	11,6
North	17,8	17,9	15,7	13,8	13,8
Italy	15,0	15,1	14,1	12,4	12,5

Source: Istat

The indices examining the population exposed to the risk of landslides and floods per 100,000 inhabitants are also worthy of attention. For Abruzzo they are 5.8% and 6.1%, respectively, which is against 2.2% and 10.4% in Italy.

Another element for reflection that can be linked to the previous indicators in terms of its environmental implications stems from the data contained in Tables 6 and 7, which examine, on the one hand, the number of agritourism farms per 100 km^2 and, on the other hand, the percentage of waste sent to landfills out of the total urban waste collected. In the former, the possibility of reaching the levels experienced in the central and northern areas

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

of the country seems rather remote. Abruzzo has an incidence, in 2019, of 5.1% compared to a central Italian average of 15.7%. In the second case, the region's landfilling, at 34.4%, is much closer to the southern average (31.2%) than to the northern or Italian average (10.6% and 20.9%).

Table 6. Agritourism companies

	2016	2017	2018	2019
Abruzzo	**5,3**	**5,3**	**5,2**	**5,1**
Mezzogiorno	3,6	3,7	3,7	3,9
Center	13,4	14,2	14,4	15,7
North	8,7	8,8	8,9	8,9
Italy	7,5	7,7	7,8	8,1

Source: Istat

Table 7. Urban waste

	2016	2017	2018	2019
Abruzzo	**33,2**	**41,3**	**37,6**	**34,4**
Mezzogiorno	42,4	40,2	36,3	31,2
Center	26,9	23,7	24,3	29,1
North	11,9	12,3	10,8	10,6
Italy	24,7	23,4	21,5	20,9

Source: Istat

Another set of indicators covers water dispersion, air quality, and renewable energy. The average values are not homogeneous. Water dispersion (Table 8) shows rather high values, underlining the need for immediate action in the distribution of drinking water. With regard to air quality (Table 9), however, the assessment tends to change. Measurements exceeding the health reference value defined by the World Health Organization for total annual average concentrations of PM2.5 (concerning urban and suburban traffic) show that Abruzzo is in a relatively better position than the other regions. The improvement between the years 2018 and 2019 seems interesting, when the percentage goes from 90.9 (high) to 72.8. The same applies if the indicator refers to the incidence of electricity consumption from renewable sources on the total gross domestic consumption (Table 10). The corresponding 2018 value of 51% is preferable to the national average, being about 17 points higher.

Table 8. Municipal water network dispersion

	2015	2018
Abruzzo	**47,9**	**55,6**
Mezzogiorno	47,9	47,9
Center	48,2	48,7
North	33,2	34,3
Italy	41,4	42,0

Source: Istat

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Table 9. Air quality

	2016	2017	2018	2019
Abruzzo	**85,7**	**80,0**	**90,9**	**72,8**
Mezzogiorno	69,9	69,5	79,8	73,4
Center	80,6	75,4	80,0	74,4
North	94,0	94,8	94,8	91,2
Italy	83,8	82,4	86,8	81,9

Source: Istat

Table 10. Electricity from renewable sources

	2016	2017	2018
Abruzzo	**45,9**	**44,6**	**51,0**
Mezzogiorno	41,5	41,4	42,4
Center	27,9	26,6	28,6
North	30,6	27,7	32,3
Italy	33,1	31,1	34,3

Source: Istat

There is an important relationship between per capita income and environmental impact (OECD, 2002; Cantore, 2010). The regeneration of urban centers represents an opportunity to contain inequalities and promote social inclusion. In other words, it can reduce situations of marginalization and social degradation in a context of better environmental and social quality. Indeed, through its impact on the quality of life, the redevelopment of public spaces can help to increase the sense of belonging to an inhabited place and, above all, reduce the disparities between rich and marginalized areas, thus promoting social cohesion. Without taking into account the devastating effects of the pandemic emergency, the percentage of people living in poverty or social exclusion is quite high in Abruzzo. The incidence is 30.1%, almost three points higher than the national average (27.3%), while the risk of poverty hovers around 19% (ISTAT, 2020).

More precise indications come from the analysis of income inequality (Table 11) based on difficulties in reaching the end of the month (Table 12) and of housing deprivation (Table 13). All these aspects are considered useful to complete the picture of the so-called economic well-being and inclusion factor. Considering the income element, ISTAT calculates the ratio between the total equivalent income received by the 20% of the population with the highest income and that received by the 20% of the population with the lowest income. This ratio is equal to 4.7, lower than that of the South (7.2) and similar to that of the North (4.8), testifying to the existence of inequalities, although not so marked when compared with other areas of the country.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Table 11. Income inequality

	2016	2017	2018
Abruzzo	**5,0**	**4,6**	**4,7**
Mezzogiorno	6,7	7,0	7,2
Center	5,4	5,5	5,2
North	4,9	4,9	4,8
Italy	5,9	6,1	6,0

Source: Istat

The examination of the other two indicators shifts the question as it shows more negative situations for the region. The data concerning the number of families, that believe they are experiencing difficulties in making ends meet (Table 12), is characterized by a non-positive evaluation. 12.8% of the families in Abruzzo show "great difficulties", unlike the North, which records the lowest value (3.9%) and the national average (8.2%).

Table 12. Difficulties in making ends meet

	2016	2017	2018	2019
Abruzzo	**14,6**	**10,7**	**7,9**	**12,8**
Mezzogiorno	17,0	13,7	15,8	15,3
Center	7,7	5,9	6,6	3,9
North	6,3	4,6	3,6	4,2
Italy	10,9	8,6	9,7	8,2

Source: Istat

The table highlights another aspect, which can be grasped by looking at the period 2016-2019. The downward trend of the value from 2016 onwards was interrupted during the last year of the survey, which shows a considerable leap forward (from 7.9% to 12.8%). The explanation lies in the stagnation of the economy, both in terms of PIL and employment.

The feeling one gets from Table 13 is that Abruzzo has a sad negative record in the field of severe housing deprivation. ISTAT detects this phenomenon on the basis of people living in overcrowded dwellings and presenting structural problems in the dwellings (ceilings, window frames), problems with lighting, and lack of running water in basic services (bath/shower). It was considered that the percentage of 11.9% does not need any particular comment, not so much because of the size of the value, but because of the large gap that separates the Abruzzo indicator from the other Italian regions.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Table 13. Severe housing deprivation

	2016	2017	2018	2019
Abruzzo	**12,8**	**9,9**	**9,1**	**11,9**
Mezzogiorno	9,7	6,8	6,5	6,0
Center	6,8	5,1	5,7	5,1
North	6,3	4,6	3,6	4,2
Italy	7,6	5,5	5,0	5,0

Source: Istat

In connection with the above considerations, another question seems to emerge from the process of regeneration of urban centers. This question concerns the role that the center can assume in the future. It is felt that the industrial city model has been exhausted and that an alternative model based fundamentally on the production of knowledge or on production processes of an immaterial nature is gaining the upper hand.

Obviously, the issue in Abruzzo is less relevant than in large cities, but some empirical observations make it possible to extend considerations to smaller urban centers. The survey comprises of two stages of analysis. The first concerns the percentage of employed persons with a higher education qualification than the actual employment in the total number of employed persons. The incidence is, in 2019, 30.3%, which is about 6 points above the national average (Table 14). The second relates, in substance, to precarious employment as it considers the number of employees who in the next six months consider it likely that they will lose their job and have difficulty in finding another similar one (Table 15).

Table 14. Over-educated workers

	2016	2017	2018	2019
Abruzzo	**30,0**	**30,0**	**31,6**	**30,3**
Mezzogiorno	23,2	23,9	24,9	25,6
Center	27,2	27,8	27,4	27,3
North	22,6	22,8	23,4	23,6
Italy	23,8	24,2	24,6	24,9

Source: Istat

Table 15. Perception of employment insecurity

	2016	2017	2018	2019
Abruzzo	**8,1**	**8,4**	**7,4**	**6,9**
Mezzogiorno	9,7	8,9	7,9	8,0
Center	7,1	6,7	5,6	5,4
North	6,3	5,4	5,1	4,6
Italy	7,4	6,6	6,0	6,7

Source: Istat

Above all, the first indicator demonstrates the region's potential in the field of the knowledge economy, a potential that is not being fully unleashed as shown in Table 14. This is partly due to the particular production structure,

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

which is characterized by many smaller enterprises. The share of added value of small manufacturing enterprises operating in Abruzzo in the total manufacturing added value is about 10 points lower than the national average, i.e., 32.8% compared to 42.1% in Italy. On the other hand, research and development expenditure as a percentage of PIL in 2017 was 1% compared to 1.37% in Italy. The focus on the number of companies with innovative product and process activities does not substantially change the picture described. In fact, even in this circumstance the percentage of innovative enterprises per 100 enterprises is 33.1%, while the national equivalent is five points higher.

Urban centers, particularly those of higher rank, can in perspective be considered to play the dual role of knowledge hub and consumer hub (Carrillo, 2004; Penco, 2012). Therefore, the relationship between the two poles is described in Figure 9. Abruzzo is home to a number of high-profile scientific research centers and qualified training facilities. The presence of three universities also ensures that the training and knowledge pathway has a significant impact on the development process.

Several empirical studies have provided fairly clear evidence of the existence of a positive relationship between the stock of human capital and the resulting economic growth. The production of knowledge and high skills is a prerequisite for attracting new investment and fueling demand. The university-business link, the geographical location of urban centers, the transport network, and the quality of services and logistics are all factors that can accompany economic growth (Simon, 1998; Audretsch, 2003).

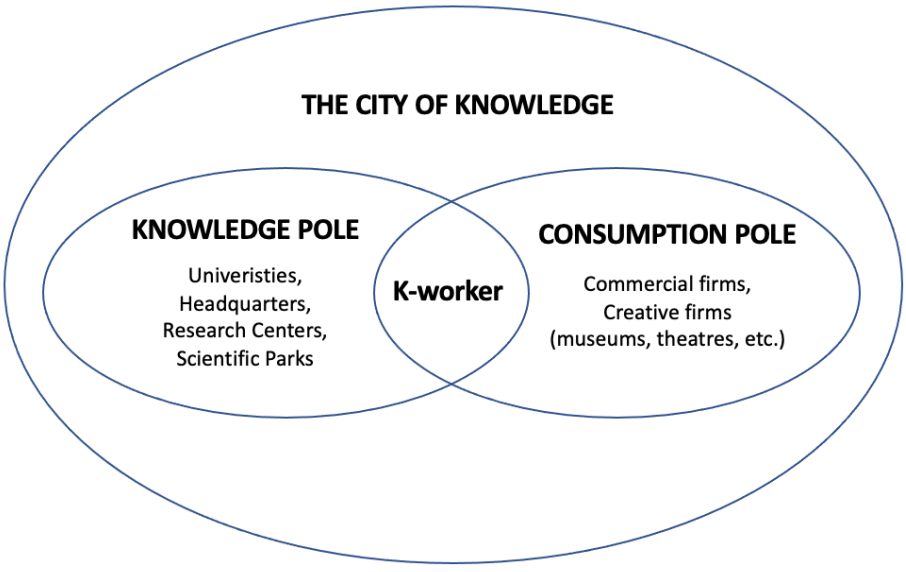


Figure 9. Possible roles of urban centers
Source: Cappellin et al. (2012)

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

With regard to consumer services, the density of the urban center can favour forms of consumption such as cultural, sports, museums, and restaurants. In this context, the regeneration of the tourist-cultural heritage becomes a lever for development and social inclusion. Abruzzo has a heritage of undoubted value with areas of extremely high natural and environmental content and oases of non-reproducible resources linked to the intrinsic value of the land. There are three national parks, a nature park, and small territorial parks. An invaluable heritage capable of activating a tourism policy is based on the link between sustainability and economic and social inclusion. Such a link can be of great importance in revitalizing even the smallest urban centers, especially at a time when the demand for tourism is tending to shift in an environmental and cultural direction. However, an analysis of the parameter relating to the current expenditure of municipalities on culture reveals a sense of dissatisfaction with the commitment of administrators to this sector. Thus, this is important not only because it creates wealth because of its links with various other productive sectors, but also because it strengthens relations with inland areas and territories. However, the per capita value of accrued payments for the valorization and protection of cultural assets and activities is characterized by its modest size and appears much lower than the national average (Table 16). In 2018, the index is just 8.9 euros per inhabitant, while in Italy the similar index is 19.4.

Table 16. Current expenditure of municipalities on culture

	2015	**2016**	**2017**	**2018**
Abruzzo	**9,1**	**9,1**	**8,1**	**8,9**
Mezzogiorno	9,4	8,9	8,8	8,9
Center	24,8	23,1	23,3	24,0
North	24,3	24,4	24,4	25,3
Italy	19,2	18,8	18,8	19,4

Source: Istat

Conclusion

Abruzzo, as is well known, has a network of medium-sized cities in which the capacity to generate income, offer collective services, and attract investment is concentrated. Due to its morphological structure, most economic activities are concentrated along the coastal area, not producing inconsiderable congestion. This high concentration of geographical-physical, anthropic, and economic conditions is expressed in the coexistence of systems of widespread industrialization and areas of marginality, and a series of demographic and productive systems around the Chieti-Pescara conurbation, the regional capital, the medium-sized towns (Avezzano, Lanciano, Sulmona, Vasto), the small coastal centers, and the protected areas in the parks (Landini, 1997).

For Abruzzo too, the regeneration of its urban centers is an important field of intervention, which requires an articulated approach because of its

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

environmental, social, and economic implications. In this context, Abruzzo has an important cultural and environmental heritage. However, there are significant weaknesses resulting from the indicators relating to urban decay, consumption of public land, and inequalities.

Ultimately, regenerating urban centers means moving in the direction of a model that has as its primary objective the quality of life (Veraldi, 2002) and also "the transformation of social relations in space and the reproduction of identities and cultures linked to a place" (Moulaert, 2009).

Aspects related to sustainability, preservation, and enhancement of environmental resources have become central issues in building such a model. As can be seen from this study, the link with the processes of social and entrepreneurial participation is the other side of the coin. In this sense, the effects on the real economy can be significant. It is not, therefore, a mere process of spatial organization or a simple budgetary administration. It is an innovative fact that requires participation and political intelligence. Thus, it is a sort of social capital that involves all the players in the area.

Future research should validate the relationship between urban and social regeneration and economic growth using an empirical and comparative methodology, by relying on a more comprehensive database containing data for several regions.

References:

1. Ali, R. & Rafique, S. (2015). The challenges of disability in Pakistan: listening to the voices of mothers. *European Scientific Journal 11*(32): 364-375.
2. Agnoletti, C. & Bocci, C. (2014). *Gli effetti economici e distributivi degli interventi di riqualificazione urbana*. XVII Congresso nazionale Associazione italiana di Valutazione, Napoli.
3. Audretsch, DB. (2003). Innovation and spatial externalities. *International Regional Science Review 26*(2): 167-174.
4. Bagnasco, C. (2005). *Piano e qualità urbana*. Appunti su alcuni aspetti metodologici. Aracne, Roma.
5. Barbarossa, L., La Rosa, D., Martinico, F., & Privitera, R. (2014). *La rigenerazione urbana come strumento per la costruzione della città sostenibile*. Università di Catania, Catania.
6. Becattini, G. (2000). *Il distretto industriale*. Rosenberg & Sellier, Torino.
7. Cantore, N. (2010). Obiettivi e metodi del delinking ambientale. In Ferlaino F (a cura di) *Strumenti per la valutazione ambientale del territorio*. Franco Angeli, Milano.
8. Carrillo, JC. (2004). Capital cities: a taxonomy of capital accounts for knowledge cities. *Journal of Knowledge Management 8*(5): 28-46.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

9. Cappellin, R., Ferlaino, F., & Rizzi, P (eds.) (2012). *La città nell'economia della conoscenza*. Franco Angeli, Milano.
10. De Ciutiis, F. (2008). *Interventi di trasformazione, qualità urbana e valorizzazione immobiliare*. Dipartimento di Pianificazione e Scienza del Territorio, Università Federico II, Napoli.
11. Favaretto, I. (2000). *Le componenti territoriali dello sviluppo*. Carocci, Roma.
12. Fratesi, U. & Senn, L. (2009). Regional growth, connections and economic modelling: an introduction. In Fratesi U, Senn L (eds.) *Growth and innovation of competitive regions. The role of internal and external connections.* Springer-Verlag, Berlin.
13. Garofalo, G. & Mazzoni, R. (1994). *Sistemi produttivi locali: struttura e trasformazione*. Franco Angeli, Milano.
14. Herman, ED. (1981). *Lo stato stazionario. L'economia dell'equilibrio biofisico e della crescita morale*. Sansoni, Firenze.
15. Hirschman, AO. (1968). *La strategia dello sviluppo economico*. La Nuova Italia, Firenze.
16. Ipole, PA. & Okpa, JT. (2019). Working conditions and employees' productivity in Cross River State Civil Service, Nigeria. *European Scientific Journal 15*(8): 132-143.
17. Istat (1997). *I sistemi locali del lavoro 1991*. Istituto Poligrafico e Zecca dello Stato, Roma.
18. Istat (2020). *Italian data for UN-SDGs. Sustainable development goals of the 2030 agenda*. Istat, Roma.
19. Landini, P. (ed.) (1999). *Abruzzo, un modello di sviluppo regionale*. Società Geografica Italiana, Roma.
20. Martincigh, L. (2003). *Qualità urbana e mobilità sostenibile*. Urbanistica Tre, Dipartimento di Studi Urbani, Università degli Studi Roma Tre, Roma.
21. Mascarucci, R. (ed.) (2011). *Fattibilità e progetto. Territorio, economia e diritto nella valutazione preventiva degli investimenti pubblici*. Franco Angeli, Milano.
22. Mauro, G. (2019). *L'evoluzione economica dell'Abruzzo. Uno sguardo su settant'anni di cambiamenti*. Casa Editrice Carabba, Lanciano.
23. Mostafa, SAF. (2018). The role of sport programs in peace building. Anthropological study at El-Zhour Club in Cairo. *European Sceintific Journal 14(*29): 244-264.
24. Moulaert, F. (2009). Social Innovation: Institutionally Embedded, Territorially (Re)produced, in MacCallum D, Moulaert F, HillierJ, Vicari S. (eds.) *Social Innovation and Territorial Development*. Ashgate, London.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

25. Mulino, M. (a cura di) (2014). *L'economia abruzzese nella crisi globale*. Il Mulino, Bologna.
26. Njuguna, RK., Makau, MS., & Kerre, FP. (2014) The moderating effect of industrial context on the relationship between brand equity and consumer choice in branded bottled water Nairobi, Kenya. *European Scientific Journal 10*(4): 337-349.
27. OECD (2002). *Indicators to measure decoupling if environmental pressure from economic growth*. OECD, Paris.
28. Penco, L. (2012). Le grandi città come poli di consumo immateriale e poli di produzione della conoscenza. In Capellin R, Ferlaino F, Rizzi P (eds.) *Le città nell'economa della conoscenza*. Franco Angeli, Milano.
29. Perloff, HS. (1963). How a region grows. *Supplementary paper n. 17*. Committee for Economic Development, New York.
30. Pyke, F. (1992). *Industrial development through small-firm cooperation: theory and practice*. International Labour Office, Ginevra.
31. Quansah, C., Frimpong, A., & Nensah, RO. (2020). Factors influencing the effects of large-scale land acquisition on the livelihood of smallholder farmers in the Pru District of Ghana. European Scientific Journal 16(11): 159-177
32. Simon, C. (1998). Human capital and metropolitan employment growth. *Journal of Urban Economics 43*(2): 223-243.
33. Svimez (2000). *I conti economici delle regioni italiane dal 1970 al 1998*. Il Mulino, Bologna.
34. Svimez (2001). Rapporto Svimez 2001 sull'economia del Mezzogiorno. Il Mulino, Bologna.
35. Uzobo, E. & Dawodu, OA. (2015). Ageing and health: a comparative study or rural abd urban aged health status in Bayelsa State, Nigeria. *European Scientific Journal 11*(14): 258-273.
36. Veraldi, R. (2002). *Politica sociale e analisi del territorio. Un caso concreto nella provincia di Teramo: il quartiere Annunziata*. Homeless Book, Faenza.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Appendix

Table 1.A. Italian regions and their acronyms

Region	Acronym
Abruzzo	ABR
Basilicata	BAS
Calabria	CAL
Campania	CAM
Emilia-Romagna	ERO
Friuli-Venezia Giulia	FVG
Lazio	LAZ
Liguria	LIG
Lombardia	LOM
Marche	MAR
Molise	MOL
Piemonte	PIE
Sardegna	SAR
Sicilia	SIC
Toscana	TOS
Trentino Alto Adige	TAA
Umbria	UMB
Valle d'Aosta	VDA
Veneto	VEN

ESJ Social Sciences

Transformational Leadership, Market-Oriented Culture, and Implementation of Total Quality Management Practices: Proposed Conceptual Model

Desalegn Urgessa Yadeta
Faculty of Business and Economics,
Kotebe University of Education, Ethiopia
Matiwos Ensermu Jaleta
Mesfin Workineh Melese
College of Business and Economics,
School of Commerce, Addis Ababa University, Ethiopia

Doi:10.19044/esj.2022.v18n12p42

Submitted: 03 March 2022
Accepted: 25 April 2022
Published: 30 April 2022

Copyright 2022 Author(s)
Under Creative Commons BY-NC-ND
4.0 OPEN ACCESS

Cite As:
Yadeta. D.U. Jaleta M.E. & Melese M.W. (2022). *Transformational Leadership, Market-Oriented Culture, and Implementation of Total Quality Management Practices: Proposed Conceptual Model.* European Scientific Journal, ESJ, 18 (12), 42.
https://doi.org/10.19044/esj.2022.v18n12p42

Abstract

The focus of this study was to consolidate the existing knowledge on leadership, market-oriented culture, and TQM by proposing a conceptual model providing a starting point for researchers and practitioners seeking to implement market-oriented culture and TQM in organizations and offering suggestions for future research. A systematic literature review was undertaken to review works published on transformational leadership, market-oriented culture, and TQM practices. The review's key findings show that transformational leadership is required for successful TQM implementation and market-oriented culture in organizations and is critical to sustaining their improvement. This research is based on a systematic literature review of works published on transformational leadership, market-oriented culture, and TQM practices. Transformational leadership is critical for both market-oriented culture and TQM implementation success. There is a need to develop a new model of transformational leadership that encompasses the leadership behavior needed for both market-oriented culture and TQM.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Keywords: Total Quality Management; Transformational Leadership; Market; Culture; Market-Oriented Culture

1. Introduction

In a competitive market, an organization's orientation to market and quality becomes crucial for staying competitive in an uncertain and competitive business environment. The philosophy of total quality management (TQM) and market-oriented culture (MOC) has been identified as the two most important strategies for small-to-medium size enterprises (SMEs), manufacturing and services firms and; has become a prerequisite for success in the global market (Wang, Chen, & Chen, 2012; Kiessling, Isaksson, & Yasar, 2016; Pereira-Moliner, Pertusa-Ortega, Tarí, López-Gamero, & Molina-Azorin, 2016). TQM and market-oriented culture are essential tools for achieving competitive advantage and strengthening organizational competitiveness. TQM is an integrated approach that; consists of principles and practices, whose goal is to improve the quality of an organization's goods and services by continuously meeting and exceeding customer needs in the most competitive ways. It focuses on enhancing customer satisfaction (Alharbi, Yusoff, & Al-Matari, 2017; Simani, 2017). On the other hand, market-oriented culture has been an antecedent to creating superior customer value, increased competitive capacity, and enhanced financial performance (Narver & Slater, 1990; Kohli & Jaworski,1990). Therefore, TQM and a market-oriented culture can constitute a vital firm strategy and provide a competitive advantage in responding to a competitive business environment.

Since successful TQM implementation and market-oriented culture are highly dependent on the firm's employees and inter-functional coordination (Herold, Fedor, Caldwell, & Liu, 2008; Narver & Slater, 1990; Reed, Lemark, & Mero, 2000), it is essential to comprehend the underlying culture of TQM practices and market-oriented culture. Leaders play a crucial role in establishing such quality (Judge & Piccolo, 2004; Herold et al., 2008) and market-oriented culture (Pulendran, Speed, & Widing, 2000). Leadership commitment and leader's communication skills have been highlighted as critical managerial attributes for successful TQM and market-oriented culture implementation (Narver, Slater, & Tietje, 1998; Kohli &Jaworski,1990). In this sense, a leader's typical characteristics are charting compelling vision, collaboration, delegation, and the ability to motivate employees. Overall, Powell (1995); Harris and Ogbonna (2001)suggested that quality and market-oriented firms need to have transformational leaders at the top, who behave according to expected culture and disseminate the good quality and market-oriented principles.

Considering market-oriented culture and total quality management as an intangible resource, transformational leadership plays a fundamental role

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

in gaining a competitive advantage. From this perspective, transformational leadership focusing on participative decision-making is decisive. In response to the environment's changes, transformational leadership becomes more critical in playing a boundary-spanning role and flexible to achieve a competitive advantage around its central competencies (Pulendran et al., 2000; Yukl, 2012). In this sense, a market and superior customer value are related to transformational leadership focused on value creation.

2.1. Theoretical Underpinnings

The resource-based theory has acknowledged the role of the leader in managing organizational resources. Still, it has yet to specifically examine the transformational leadership style as an administrative resource capability (Barney, 1991). We extend resource-based theory by examining transformational leadership style as organizational resource capability influences the implementation success of TQM and market-oriented culture. Considering transformational leadership as a resource capability, we also developed propositions regarding transformational leadership links with TQM and market-oriented culture.

2.2. Total Quality Management (TQM)

According to Dale (2003),"TQM is the mutual cooperation of everyone in an organization and associated business processes to produce products and services which meet and hopefully exceed the needs and expectations of customers"(p.26), while Oakland (2003)defined it as "A comprehensive approach for improving competitiveness and flexibility through planning, organizing and understanding each activity, and involving everyone at each level. This suggests that TQM provides quality the highest priority and monitors the production process while maintaining the well-being of the human aspect of the organization. Different TQM frameworks were developed empirically (e.g., Pradhan, 2017; Zhang, Waszink, & Wijngaard, 2000; Samson & Terziovski, 1999). A wide range of antecedents and outcomes of TQM were examined using the different TQM frameworks. Studies on antecedents of TQM include information systems (Siam, Alkhateeb, & Al-Waqqad, 2012), organizational strategy (Prajogo & Sohal, 2010), and culture (Rad, 2006). Similarly, studies on the outcome of TQM include organizational innovation (Kim, Kumar, & Kumar, 2012), operational performance (Samson & Terziovski, 1999), organizational design, and competitive advantage (Pereira-Moliner *et al*., 2016; Powell, 1995).

The literature above demonstrates more of a common consensus regarding the components of TQM though there are differences among them. For this work, we consider the following five TQM practices such as (1) strategic planning, (2) people management, (3) customer focus, (4) process

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

management, and (5) information and analysis (Samson & Terziovski, 1999). This TQM model was developed based on the most universal and a pervasive method known as MBNQA (Samson & Terziovski, 1999).

Strategic Planning: The strategic planning process allow organizations to recognize customer requirements, enables employees to be fully aware of, and is involved in achieving organizational quality goals (Lakhe, 1994; Mosadeghrad, 2012; Samson & Terziovski, 1999).

People Management: People management addresses the extent of employee competency, commitment, involvement, and empowerment in TQM (Mosadeghrad, 2012) and thereby contributes to attaining the organizational objectives and recognizing their attainments. According to Samson and Terziovski (1999), people management addresses "how well the human resource practices tie into and are aligned with the organization's strategic directions" (p. 396). This implies how well-integrated employee health, safety, training, development, involvement, and empowerment are all addressed within the concept of people management in TQM.

Customer Focus: Mosadeghrad (2012) also stressed that customer focus examines how the organization determines customers' expectations and requirements, builds relationships, measures satisfaction, and utilizes their feedback in enhancing the quality of products. The first aspect of customer focus is determining customers' needs, preferences, and expectations (Mosadeghrad, 2012; Zhang et al., 2000). The second aspect of customer focus addresses the issue of how organizations create relationships with customers (Lakhe & Mohanty, 1994; Zhang et al., 2000; Gallear & Ghobadian, 2004).The third aspect of customer focus is measuring customer level of satisfaction or complaints (Mosadeghrad, 2012).

*Process Management***:** Process management refers to key processes designed, executed, controlled, and enhanced to support the company's strategic direction and action plans, abundantly please customers, and attain superior performance (Mosadeghrad, 2012; Samson & Terziovski, 1999). As part of process management, an organization's operating procedures should be documented and standardized to ensure the reliability of the outcome (Mosadeghrad, 2012).

Information and Analysis: Organizations manage the process well by using reliable information to achieve performance and quality goals (Tummala, 1996 & Al-Damen, 2017). Information and analysis from the TQM context address the degree of benchmarking undertaken in the organization on all possible areas influencing competitiveness (Samson & Terziovski, 1999).

2.3. Market-Oriented Culture

The marketing literature is full of market orientation perspectives and definitions, yet customer orientation is significant at the core of this concept.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Accordingly, market-oriented organizations focus on customers' desires, needs, and particular conditions (e.g., lifestyles must be the primary emphasis of the market-oriented organization). It is fundamental as it creates a common objective in which all organizational departments and efforts work in unity to satisfy customer needs through innovation and continuous process improvement (Kohli & Jaworski, 1990; Harris & Ogbonna, 2001). Market orientation is conceptualized in different ways in marketing literature by other authors. For instance, Kohli and Jaworski (1990) conceptualized market orientation in three sets of activities (e.g., organizational-wide generation of market intelligence focusing on current and future customer requirements, disseminating the intelligence across departments, and organizational-wide responsiveness to it). This viewpoint believes that market-oriented firms embrace a collection of behaviors that place the main focus on customers (Zhang, Bruning, & Sivaramakrishnan, 2007). This definition implies that market orientation encourages the generation of intelligence and its dissemination (i.e., the use of data about customers and competitors) and integrated cross-functional processes and the execution of a strategic organizational response to market opportunities.

On the other hand, it is argued that a firm's ability to respond to the market effectively depends on the degree of the firm's knowledge of its customers and competitors. In line with this argument, Narver and Slater (1990)conceptualized market-oriented culture in terms of customer orientation, competitor orientation, and inter-functional coordination from an organizational culture perspective that creates necessary behavior to create superior value for customers. Supporting the conceptualization of market orientation as organizational culture, Zhang, Bruning, and Sivaramakrishnan (2007) mentioned what a market-oriented firm needs to be by saying, "A market-oriented firm needs to have both a customer and competitor-oriented organizational culture that encourages and facilitates all of the activities involved in acquiring information about the customers and competitors in the target market and disseminating the information throughout the business" (p.135).

Accordingly, market orientation refers to the kind of organizational culture. It is not merely a set of activities and procedures separate from the organizational culture where the organization emphasis on customers, competitors, and various functional departments within the firm to take coordinated, responsive actions and where all employees are committed to the ongoing creation of superior customer (Narver et al., 1998). Narver et al.(1998)further argue that the behavior and customer value commitment will not last long unless it emanates from an organization's culture. A body of opinion shows that market orientation is a multi-dimensional concept, where each of the three sub-constructs of market orientation promotes different

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

cultures. Their combination focuses on internal coordination and external adaptation. On the other hand, Narver and Slater (1990)affirmed that market-oriented dimensions are conceptually related strongly to each other and; subsumed under one broader construct i.e., market-oriented culture. In this study, we adopt an aspect of market orientation as an organizational culture, where attention is given to the values, beliefs, and attitudes collectively held by an organization's members. In the organizational context, it is believed that a focus on current and potential customers must get priority over the other dimensions of market-oriented culture. In our understanding, market-oriented culture is a set of beliefs that puts customers' interests first. At the same time, it focuses on the organization's knowledge of the need to acquire information about competitors and create cross-functional activities to satisfy customers' needs.

Customer Orientation: Customer orientation requires firms to find out the current needs of the customer through market information focusing on current customer needs, preferences, and satisfaction (Slater & Narver, 2015; Olavarrieta & Friedmann, 1999). It creates knowledge about current and potential customers through the information acquisition process and then disseminates this information within the organization (Kohli & Jaworski, 1990; Narver & Slater, 1990; Zhang et al., 2007).

Competitor Orientation: A culture of competitor orientation refers to a value of an accurate and timely understanding of the firm's current and future competitors (Narver & Slater, 1990; Adidam, Banerjee, & Shukla, 2012). It focuses on analyzing the firm's direct and indirect competitors by collecting information including their actions, intentions, and changing behavior, comparative market information of services, advertising, price, market trends, market opportunities, and trends about the existing and potential competitors' business creating knowledge about current and potential competitors through an information acquisition process and disseminate it within the organization (Kohli & Jaworski, 1990; Narver & Slater, 1990; Cavallo, Sanasi, Ghezzi, & Rangone, 2021).

Moreover; competitor-oriented firms identify their strengths and weaknesses by directly comparing themselves against principal competitors and creating maximum customer value superior to other competitors(Ozsashin, Zehir, Acar, & Sudak, 2013; Zhang et al., 2007; Cavallo et al., 2021).

Inter-functional coordination: It is widely accepted that anyone in the organization has the responsibility to create value for customers because value creation is not the responsibility of the specific unit (Narver & Slater, 1990; Ozsashin et al., 2013; Kumar, Subramanian, & Yauger, 1998). Inter-functional coordination is based on the competitor and customer information. It comprises the value and activities of the organization's coordinated efforts,

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

typically involving more than the marketing department for sharing strategic information and other resources along with collaboration and integration of different functional units to create superior value for the buyers (Narver & Slater, 1990; Harris & Ogbonna, 2001; Ozsashin et al., 2013). In this sense, inter-functional coordination has strong relationships with the other components of market orientation; and customer and competitor orientations.

2.4. Transformational leadership and market-oriented culture

Narver et al.(1998)contended that leadership is crucial to achieve and maintain a cultural transformation in an organization with particular reference to market-oriented culture and its dimensions. Similarly, Kohli and Jaworski(1990)theorize the importance of senior management leadership in developing market-oriented culture. Pulendran et al.(2000) also empirically support the senior managers' willingness to take risks and commitment to market intelligence ongoing generation and use.

Leadership can take steps to support employees to see their colleagues as customers, enable information interchange, and encourage empathy among employees (Gonzalez & Guillen, 2002). Particularly, transformational leadership, through one of its dimension, intellectual stimulation encourages employees to suggest and initiate new products in response to changes in customer needs and market trends and encourage employees to view the change in customer needs and trends in a competitive environment as an opportunity (Jansen, Vera, & Crossan, 2009). Employees also support a transformational leader's goal of adaptation to change in customer needs (Jansen et al., 2009)and market trends by questioning existing products and facilitating the development and practice of market-oriented culture and its dimensions.

Proposition 1: Transformational leadership will significantly positively influence Market-oriented culture.

2.5. Transformational Leadership and TQM Practices

Transformational leadership offers a clear, well-projected vision that would assist organize resources and focusing on the objective to accomplish the results; centers on how organizations can optimally meet the requirements of internal and external customers; promote quality improvement goals, strategies, and, projects, and notify the organization what it should aspire for in quality matters (Lakhe & Mohanty, 1994; Kotter, 1995a). Furthermore, they create total quality culture by designing organizational structure; promoting policies, processes, and; procedures that reflect quality; creating awareness among employees regardless of levels and responsibilities about quality developing customer-based measures of performance; promoting

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

strong communication lines; and customer-oriented values and beliefs (Lakhe & Mohanty, 1994; Rougan, 2015).

Transformational leaders use intellectual stimulation, inspiration, and emotional appeal to motivate and move employees beyond self-interest to vigorously pursue an organization's vision (Crossan, Vera, & Nanjad, 2008). They also communicate an inspiring and compelling picture of what the future will look like if a goal of the organization is achieved. Furthermore, they can help create an environment that supports multilevel collaboration across functional teams and, open communication through vision, motivation, and moral clarity (Zuraik & Kelly, 2018). Numerous TQM studies considered leadership a fundamental enabler behind the practical implementation of other TQM dimensions (e.g., Kumar & Sharma, 2018). Many writers also agree that transformational leadership behavior, such as creating vision and promoting change, is generally closer to TQM leadership (e.g., Dale, 2003; Oakland, 2003).

Transformational leaders may be the minimum requirement to adopt and maintain TQM (Kumar & Sharma, 2018). They establish quality goals and strategies, establish a learning environment, motivate, communicate and empower employees to properly implement TQM (Kumar & Sharma, 2018). Transformational leadership creates customer focus values by enhancing organizational members' awareness of fulfilling customer needs and clarifying task requirements to minimize role ambiguity (Liaw, Chi, & Chuang, 2010). They also outline quality goals for customer satisfaction and long-term relationships with suppliers (Kumar & Sharma, 2018), enabling organizational members to consider different perspectives to fulfill customer needs. Specifically, there are many ways in which transformational leaders facilitate the implementation of TQM. For example, it focuses on envisioning, advocating change, inspirational motivation, risk-taking, collaboration, innovation, and individual empowerment through individual consideration (Herold et al., 2008; Judge & Piccolo, 2004). TQM emphasizes human resource management, strategic planning, customer focus, supplier relationship and; continuous process improvement (e.g., Fotopoulos & Psomas, 2009). From the above discussion, a closer look at transformational leadership and; TQM share many similarities. Hence, the transformational leader's role in developing an organization's vision and its clear articulation foster the implementation of TQM initiatives (Omar, 2017). Moreover, according to (Özsahin, Zehir, & Acar, 2011), leadership facilitates learning by role modeling their behavior, charting a vision in which employees engage themselves, showing considerate care for employees, and communicating change; and other organizational issues to their employees and rewarding positive contributions.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Intellectual stimulation is an exceptionally fundamental capability of change leaders involving the ability to take risks in the process of decision making and; make immediate decisions. Transformational leaders are prepared to take risks, consider mistakes as an opportunity to learn, and encourage organizational members to take risks by allowing them to experiment and make mistakes. In this way, they foster the implementation of changes by developing the change capabilities of their own and organizational members. They facilitate learning and knowledge exchange among organizational members to create and sustain continuous process improvement. They make a work climate where organizational members feel empowered to find improvement approaches to accomplish their job by encouraging their participation by emphasizing the crucial role of cooperation in accomplishing collective tasks and offering them a chance to learn from shared experience (Jung, Chow, & Wu, 2003). Through one of its components (e.g., intellectual stimulation), transformational leaders encourage innovation and facilitate learning which enhances the implementation of TQM practices (Omar, 2017). When a transformational leader stimulates organizational members' effort to create and innovate new things by questioning the existing assumptions; and approaching existing problems in new ways, innovative approaches are getting deep-rooted (Jung et al., 2003). Such behavior tends to enhance employee initiatives and implement new programs and ideas such as TQM to increase the efficiency of their organization (Rad, 2006). It also helps to influence teamwork through collective learning, information sharing, advocating change, envisioning change, and encouraging innovation (Yukl, 2012) to implement TQM successfully.

Through one of the other components of transformational leadership (e.g., individual consideration), they understand the abilities, skills and, knowledge of the followers; and respond by providing quality training, performance feedback, reward and, empowering followers at all organizational levels (Bass, 2000a; King, 2017). This encourages the involvement of followers in decision-making processes regarding continuous improvement and customer satisfaction goals by adapting learning requirements to the potential of each employee (Mikkelsen & Olsen, 2018) and thereby inspiring the implementation of TQM.

In addition to theoretical propositions, the majority of the few empirical shreds of evidence were consistent with the theoretical literature on the relationship between transformational leadership and; the implementation of TQM practices. For instance, Chan, Tiwari, Ramlan, and Ahmad (2016), Barbosa, Gambi, and Gerolamo (2017), and Alharbi and Yusoff (2012) found that transformational leadership was positively related to TQM practices. Argia and Ismail, (2013); Chan and Ng (2012)also stated that transformational leadership dimensions had a significant positive relationship with TQM

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

practices. Kumar and Sharma (2018)analyzed sample data from Indian firms and found that transformational leadership was positively linked to the two-dimension of TQM which were continuous process improvement and innovation. Questioning the universal applicability of TQM, a comparative study was conducted between two nations in which transformational leadership was positively related to the implementation of TQM practices for America-based firms. In contrast, in the same study negative relationship was found between transformational leadership and TQM practices for China-based firms (Cho & Jong, 2014).

Proposition 2: Transformational leadership will have a significant positive influence on implementing TQM Practices.

The conceptual model depicting the relationships among the concepts of this work is presented in figure 1.

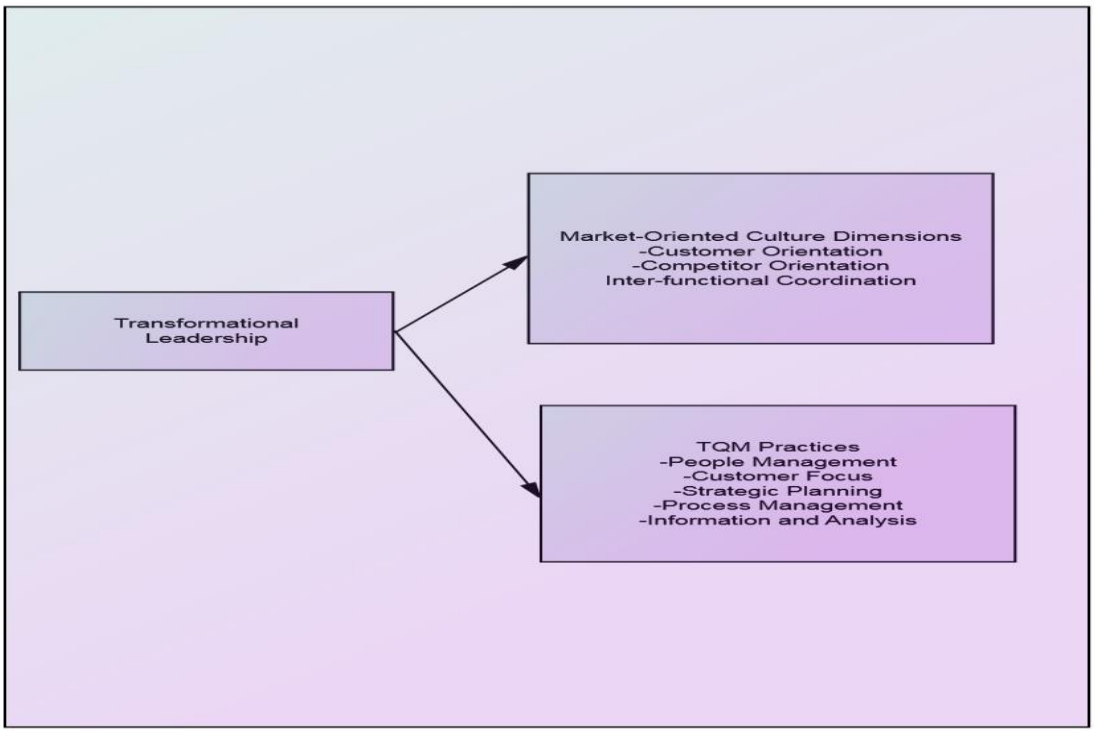


Fig. 1 Proposed Conceptual Model

2.6. Discussion and Conclusion

For an organization to progress toward implementing market-oriented culture and TQM, it is important to understand the factors that influence its implementation. The literature on TQM and market-oriented culture commonly claims the need for managerial leadership and commitment to effectively execute both market-oriented culture and TQM management philosophy. However, it is challenging to find strong arguments to

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

demonstrate whether managerial leadership is desirable for implementing a market-oriented culture and TQM. This paper discusses theoretical arguments that substantiate the requirement of managerial leadership for both a market-oriented culture and TQM efforts to be successfully implemented.

This study focused on transformational leadership as a critical driver of both market-oriented culture and the implementation of TQM practices. The literature reveals that transformational leadership is a critical determinant of the success of TQM practices and market-oriented culture. Transformational leaders intend to appeal to followers' fundamental values and requirements and inspire them to surpass their self-interest and pursue collective goals (Kark, Chen, & Shamir, 2003). They tend to display a higher level of ethical behavior and moral development (Turner, Barling, Epitropaki, Butcher, & Milner, 2002). Given these behaviors and competence to invoke a more substantial commitment from followers (Avolio, Bass, & Jung, 1999), transformational leaders may be particularly well equipped to persuade organizational members of their strong commitment to both market-oriented culture and the implementation of TQM practices.

References:

1. Adidam, P. T., Banerjee, M., & Shukla, P. (2012). Competitive intelligence and firm's performance in emerging markets: An exploratory study in India. *Journal of Business & Industrial Marketing*, *27*(3), 242–254.
2. Al-Damen, R. A. (2017). The impact of Total Quality Management(TQM) on organizational performance case of Jordan oil petroleum company. *International Journal of Business and Science*, *8*(1), 192–202.
3. Alharbi, K., Yusoff, R. Z., & Al-Matari, E. M. (2017). The moderating effect of organizational climate on the relationship between total quality management(TQM) and organizational sustainability: The case of the hotel industry in Saudi Arabia. *International Business Management*, *11*(2), 350–356.
4. Alharbi, M., & Yusoff, R. Z. (2012). Leadership styles and their relationship with quality management practices in public hospitals in Saudi Arabia. *International Journal of Economics and Management Sciences*, *1*(10), 59–67.
5. Argia, H. A. A., & Ismail, A. (2013). The influence of transformational leadership on TQM implementation in the higher education sector, *3*(1), 136–146.
6. Avolio, B., Bass, B., & Jung, D. (1999). Re-examining the components of transformational and transactional leadership using the multifactor leadership questionnaire. *Journal of Occupational and Organizational*

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Psychology, *72*, 441–462.

7. Barbosa, F. M., Gambi, L. do N., & Gerolamo, M. C. (2017). Leadership and quality management – a correlational study between leadership models and quality management principles. *Gestao. Producao., Sao Carlos*, *24*(3), 438–449.
8. Barney, J. (1991). Firms' resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99–120.
9. Bass, B. M. (2000). The future of leadership in learning organizations. *Journal of Leadership and Organizational Studies*, *7*(3), 19–40.
10. Cavallo, A., Sanasi, S., Ghezzi, A., & Rangone, A. (2021). Competitive intelligence and strategy formulation : Connecting the dots. *Competitive Review:Journal of International Business*, *31*(2), 250–275.
11. Chan, P. H., & Ng, P. K. (2012). Identifying the link between leadership styles and TQM practices: A conceptual framework. In *2nd International conference on Design and concurrent Engineering at Melaka, Malassia*.
12. Chan, S. W., Tiwari, S. T. D. S., Ramlan, R. binti, & Ahmad, M. F. (2016). The relationship between leadership styles and quality management practices in Malaysian manufacturing firms. In *Proceedings of the 2016 International Conference on Industrial Engineering and Operations Management Kuala Lumpur, Malaysia, March 8-10, 2016* (pp. 2167–2173).
13. Crossan, M., Vera, D., & Nanjad, L. (2008). Transcendent leadership : Strategic leadership in dynamic environments. *Leadership Quarterly*, *19*, 569–581.
14. Dale, B. G. (2003). *Managing quality* (Fourth Edition). Oxford: Wiley-Blackwell.
15. Fotopoulos, C. B., & Psomas, E. L. (2009). The impact of "soft " and " hard " TQM elements on quality management results. *International Journal of Quality and Reliability Management*, *26*(2), 150–163.
16. Gallear, D., & Ghobadian, A. (2004). An emprical investigation of the channels that facilitates a total quality culture. *Total Quality Management*, *15*(8), 1043–1067.
17. Gonzalez, T. F., & Guillen, M. (2002). Perspectives leadership ethical dimension : A requirement in TQM implementation. *The TQM Magazine*, *14*(3), 150–164.
18. Harris, L. C., & Ogbonna, E. (2001). Leadership style and market orientation : An empirical study. *European Journal of Marketing*, *35*(5/6), 744–764.
19. Herold, D. M., Fedor, D. B., Caldwell, S., & Liu, Y. (2008). The effects of transformational and change leadership on employees' commitment

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

to a change : A multilevel study. *Journal of Applied Psychology*, *93*(2), 346–357.

20. Jansen, J. J. P., Vera, D., & Crossan, M. (2009). Strategic leadership for exploration and exploitation : The moderating role of environmental dynamism. *The Leadership Quarterly*, *20*(1), 5–18.
21. Judge, T. A., & Piccolo, R. F. (2004). Transformational and transactional leadership : A meta-analytic test of their relative validity. *Journal of Applied Psychology*, *89*(5), 755–768.
22. Jung, D. I., Chow, C., & Wu, A. (2003). The role of transformational leadership in enhancing organizational innovation : Hypotheses and some preliminary findings. *The Leadership Quarterly*, *14*, 525–544.
23. Kark, R., Chen, G., & Shamir, B. (2003). The two faces of transformational leadership : Empowerment and dependency. *Journal of Applied Psychology*, *88*(2), 246–255.
24. Kiessling, T., Isaksson, L., & Yasar, B. (2016). Market orientation and CSR : Performance implications. *Journal of Business Ethics*, *137*, 269–284.
25. Kim, D., Kumar, V., & Kumar, U. (2012). Relationship between quality management practices and innovation. *Journal of Operations Management*, *30*(4), 295–315.
26. King, K. (2017). *A comparison between administrative leadership in higher education and change-oriented leadership in Banks*.
27. Kohli, A. K., & Jaworski, B. J. (1990). Market orientation : The construct, research propositions, and managerial implications. *Journal of Marketing*, *54*(1), 1–18.
28. Kotter, J. P. (1995). Leading Change:Why transformational efforts fail. In *Harvard Business Review* (pp. 59–67).
29. Kumar, K., Subramanian, R., & Yauger, C. (1998). Examining the market orientation-performance relationship : A context-specific study. *Journal of Management*, *24*(2), 201–233.
30. Kumar, V., & Sharma, R. R. K. (2018). Leadership styles and their relationship with TQM focus for Indian firms : An empirical investigation.International Journal of Productivity and Performance Management. *International Journal of Productivity and Performance Management*, *67*(6), 1063–1088.
31. Lakhe, R. R., & Mohanty, R. P. (1994). Total quality management concepts , evolution and acceptability in developing economies. *International Journal of Quality &Reliability Management*, *11*(9), 9–33.
32. Liaw, Y.-J., Chi, N.-W., & Chuang, A. (2010). Examining the Mechanisms Linking Transformational Leadership , Employee Customer Orientation , and Service Performance : The Mediating

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Roles of Perceived Supervisor and Coworker Support. *Journal of Business Psychology*, *25*, 477–492.
33. Mikkelsen, A., & Olsen, E. (2018). The influence of change-oriented leadership on work performance and job satisfaction in hospitals – the mediating roles of learning demands and job involvement. *Leadership in Health Services*.
34. Mosadeghrad, A. M. (2012). Towards a theory of quality management : an integration of strategic management , quality management and project management Ali Mohammad Mosadeghrad. *International Journal of Modelling in OOperation Management*, *2*(1).
35. Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *Journal of Marketing*, *54*, 20–35.
36. Narver, J. C., & Slater, S. F. (2004). The effect of a market orientation on business profitability. *Journal of Marketing*, *54*(4), 1–22.
37. Narver, J. C., Slater, S. F., & Tietje, B. C. (1998). Creating a market orientation. *Journal of Market Focused Management*, *2*, 241–255.
38. Oakland, J. S. (2003). *Total quality management text with cases* (Third Edition). Oxford: Butterworth Heinemann.
39. Olavarrieta, S., & Friedmann, R. (1999). Market-oriented culture , knowledge-related resources , reputational assets and superior performance : A conceptual framework. *Journal of Strategic Marketing*, *228*, 215–228.
40. Omar, H. O. (2017). *Transformational leadrship in quality management*. University of Montana.
41. Özsahin, M., Zehir, C., & Acar, A. Z. (2011). Linking leadership style to firm performance : the mediating effect of the learning orientation. *Procedia Sociall and Behavioral Sciences*, *24*, 1546–1559.
42. Ozsashin, M., Zehir, C., Acar, A. Z., & Sudak, M. K. (2013). The effects of leadership and market orientation on organizational commitment. *Procedia-Social and Behavioral Sciences*, *99*, 363–372.
43. Pereira-Moliner, J., Pertusa-Ortega, E. M., Tarí, J. J., López-Gamero, M. D., & Molina-Azorin, J. F. (2016). Organizational design, quality management and competitve advantage in hotels. *International Journal of Contemporary Hospitality Management*, *28*(4), 1–44.
44. Powell, T. C. (1995). Total quality management as competitive advantage: A review and emprical study. *Strategic Management Journal*, *16*(1), 15–37.
45. Pradhan, B. L. (2017). Confirmatory Factor Analysis of TQM Implementation Constructs : Evidence from Nepalese Manufacturing Industries. *An International Journal of Management Review*, *12*(1), 26–56.
46. Prajogo, D. I., & Sohal, A. S. (2010). The relationship between

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

organization strategy , total quality management (TQM), and organization performance — the mediating role of TQM. *European Journal of Operations Research*, *168*, 36–50.

47. Pulendran, S., Speed, R., & Widing, R. E. (2000). The antecedents and consequences of carket orientation in Australia. *Australian Journal of Management*, *25*(2), 1–27.
48. Rad, A. M. M. (2006). The impact of organizational culture on the successful implementation of total quality management. *The TQM Magazine*, *18*(6), 606–625.
49. Reed, Lemark, D. J., & Mero, N. P. (2000). Total quality management and sustainable competitive advantage. *Journal of Quality Management*, *5*, 5–26.
50. Rougan, D. (2015). A Study on TQM Development , Performance and Sustenance in Service Industries through Effective Communication , Critical Success Factors and Market Orientation. *IOSR-Journal of Business and Management*, *17*(1), 1–12.
51. Samson, D., & Terziovski, M. (1999). The relationship between total quality management practices and operational performance. *Journal of Operations Management*, *17*(1), 393–409.
52. Siam, A. Z., Alkhateeb, K., & Al-Waqqad, S. (2012). The role of information systems in implementing Total Quality Management. *American Journal of Applied Science*, *9*(5), 666–672.
53. Simani, W. L. (2017). TQM perspectives under the competitive strategies and the organization performance in Kenyan manufacturing sector. *Journal of Strategic Management*, *16*(2), 1–20.
54. Slater, S. F., & Narver, J. C. (2015). Customer-led and market-oriented : Let's not confuse the two. *Journal of Strategic Management*, *266*(December 1998), 1001–1006.
55. Tummala, V. M. R. (1996). Strategic quality management , Malcolm Baldrige and European quality awards and ISO 9000 certification core concepts and comparative analysis. *International Journal of Quality and Reliability Management*, *13*(4), 8–38.
56. Turner, N., Barling, J., Epitropaki, O., Butcher, V., & Milner, C. (2002). Transformational leadership and moral reasoning. *Journal of Applied Psychology*, *87*(2), 304–311.
57. Wang, C., Chen, K., & Chen, S. (2012). Total quality management, market orientation and hotel performance : The moderating effects of external environmental factors. *International Journal of Hospitality Management*, *31*(1), 119–129.
58. Yukl, G. (2012). Effective leadership behavior : What we know and what questions need more attention. *Academy of Management Perspective*, 66–85.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

59. Zhang, Z., Waszink, A., & Wijngaard, J. (2000). An instrument for measuring TQM implementation for Chinese manufacturing companies. *International Journal of Quality & Reliability Management*, *17*(7), 730–755.
60. Zhang, D. di, Bruning, E. R., & Sivaramakrishnan, S. (2007). *Differential influences of market and entrepreneurial orientation on firm performance*.
61. Zuraik, A., & Kelly, L. (2018). The role of CEO transformational leadership and innovation climate in exploration and exploitation. *European Journal of Innovation Management*.

ESJ Social Sciences

A Proposed E-learning Technology Management Model for Universities in Response to the COVID-19 Global Crisis

Dr. Mohamed Elsayed Elnaggar
Associate Professor of Educational Technology
Faculty of Educational Studies, National Egyptian E-learning University
Prof. Dr. Rasha Saad Sharaf
Professor of Comparative Education and Education Administration
Faculty of Education - Helwan University

Doi:10.19044/esj.2022.v18n12p58

Submitted: 06 April 2022
Accepted: 26 April 2022
Published: 30 April 2022

Copyright 2022 Author(s)
Under Creative Commons BY-NC-ND
4.0 OPEN ACCESS

Cite As:
Elnaggar M.E. & Sharaf R.S. (2022). *A Proposed E-learning Technology Management Model for Universities in Response to the COVID-19 Global Crisis.* European Scientific Journal, ESJ, 18 (12), 58. https://doi.org/10.19044/esj.2022.v18n12p58

Abstract

The overall purpose of the study is to propose an e-learning technology management model that responds to the outbreak of the coronavirus disease 2019 (COVID-19) and that has led to the closure of almost all the world's universities in 2020/2021, leading to many complications in arranging for remote teaching and learning processes. The basic design of the study included the analysis of different technology management models in terms of scope and integration. In addition to a survey directed to several international higher education and e-learning experts as well as a thematic analysis for qualitative data obtained from experts' comments and views. The major findings, from both quantitative and qualitative analysis, structured the design of the model that has the advantage of mobilizing all university resources towards the achievement of intended learning outcomes. It focuses on six domains for e-learning technology management: a) planning, b) governance and administration, c) capacity building, d) development, e) interactive teaching and learning, and f) assessment and evaluation. Hence, the proposed e-learning technology management model provides better access, and more economic management of resources, and maximizes return on investment with better learning outcomes at higher education institutions.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Keywords: Technology management, e-learning, higher education, COVID-19, technology infrastructure

Introduction

Most modern Higher Education Institutions (HEIs) face the challenge not only of educating people who represent the human capital needed for the overall development of society but also of generating knowledge that will have a direct impact on society. In this sense, their third mission (in addition to education and scientific research) builds on a meaningful transfer of the results of Research and Development (R&D), providing real solutions to social and industrial problems (Gür et al., 2016). In order for this to occur, HEIs must generate suitable university management processes from within, enabling them to achieve a transfer of technology to support innovation processes (Aceves et al., 2013; Bernardt et al, 2002; Borges & Filion, 2013; Cabrera & Soto, n.d.; Rip, 2011). Therefore, it is essential that appropriate management processes are developed in relation to technologies that emerge within research projects, as part of university management (Díez et al., 2015).

Many universities have taken a new direction in the 21st century with the expansion of globalization, which requires HEIs to redefine their roles, objectives, goals, and functions. They are increasingly expected to act as dynamos of socio-economic growth and political, cultural, social, and technological progress. For this reason, in today's society quality in higher education is measured in terms beyond education itself (Castro et al., 2017, 132).

Similarly, Higher education institutions are increasingly expected to support and monitor the generation, appropriation, and/or adoption of technologies to solve problems identified by society and industry. This can give rise to emerging technologies, meaning technologies in the initial phase of development whose lack of historical data prevent the generation of risk projections and analysis, whose acceptability in the market is unclear, whose ethical challenges are unknown, and whose use is untested. These features of emerging technologies imply a high component of risk and uncertainty (Gavankar et al., 2014). However, emerging technologies are also the most likely to cause major shifts and growth in the market. It is thus a challenge for HEIs not only to identify emerging technologies but also to develop and promote their use. Studies on this issue (Bhattacherjee, 1998; Tegarden et al., 2012) have shown that HEIs which successfully manage emerging technologies evince certain characteristics (Villa, 2015).

Since Higher education regulators demand standards of excellence, therefore the problem under investigation is to design a strategic model of university management as a management tool. It is indisputable that self-

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

evaluation should guide HEI processes and act as an administrative instrument for institutional managers (Castro et al., 2017, 133).

University technology management (UTM) is used for inventorying, monitoring, evaluating, enhancing, optimizing, and securing technology in HEIs (Gaynor, 1999; Jiménez et al., 2007; Tapias G., 2000). Castrejón et al. (2014) argue that the technology management developed in university research groups (UTM) is a triggering element for competitiveness, with various aspects of UTM considered in innovation systems and supported holistically (time, resources, processes, and proper management from all areas of the university) to strengthen and enhance results. University technology management is strengthened through university-industry-society collaboration and, in addition, when higher education institutions (HEI) focus on their "third mission", namely their direct role in economic development and their impact on society (Arvanitis & Villavicencio, 1994; Friedman & Silberman, 2003; Howland et al., 2007; E. Villa at al., 2015). To achieve that mission, a new model of an entrepreneurial and research-driven university emerges as pillar of the knowledge society. This entails challenges such as: a) impelling the development of society as a product of social and economic progress, which is achieved through the effective application of knowledge; and b) showing that higher education can support processes of creation, dissemination and appropriation of knowledge. HEIs that do not embrace these challenges risk being left behind (Díez et al., 2015; Pineda, 2013). To succeed in this new paradigm, universities rely on technology management processes, specifically from university research groups (Geisler, 1995; Mowery & Shane, 2002; Siegel et al., 2003; Silva & Nuño, 2014).

Hence, according to a key study by Syryamkin and Syryamkina, “technology management in HEIs involves the following specific components: business strategy in a high-tech enterprise; identifying and evaluation of engineering capacities; transfer and commercialization of new technologies; marketing; intellectual property; legal protection strategies; commercialized scientific research; research planning and management of a high-tech enterprise; economic evaluation of innovative projects; cooperation with regulatory authorities; export control of technologies; international co-operation; and economic and technological security” (Syryamkin & Syryamkina, 2015, 469).

Technology management also involves the following innovative strategic cycle in education and cognitive management: science – innovation – production – competitive products – market – profit – science. The meaning of the cycle is that science leads to innovation, which leads to production, which generates profit, which once again will fund science and continue to produce innovative production. This is the procedure of performing scientific research and competitive products, ensuring the success of a company. Thus,

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

there are two key components in this process: innovative technologies and skilled personnel (Zinov, et al., 2010, 576).

Furthermore, technology management entails an audit to assess opportunities for growth, the competitiveness of the technological solutions used, and the overall structure and effectiveness of a company. Technology management also assumes "lifelong education" as the guiding principle of staff training, supporting basic, continuing, formal, non-formal and informal modes of education, and opposing rigid frameworks based on new "non-systemic" educational institutions, such as corporate universities and mobile forms of supplementary education. (Syryamkin & Syryamkina, 2015).

Now, technology has become the main possible solution with the experience of the global COVID-19 pandemic lockdown. Overnight, education institutions (among which are universities) as well as other business and services organisations, are closed. An unprecedent challenge, happening for the first time in history. Nevertheless, to stop education and learning is not an option. Hence, all universities worldwide, were looking for unconventional ways of sustaining their teaching and learning activities in alternative ways. Online education has become the only option. No matter how ready governments are for this option, it was an imposed solution that has revealed the technological gap and divide causing inequalities among socio-economic groups that lack proper access to technological infrastructure and means. No clear policies or strategies was regarded optimal simply because the level of readiness of universities differ from one institution to another. Moreover, The US National Research Council (1987) described technology management as "a process, which includes planning, directing, control and coordination of the development and implementation of technological capabilities to shape and accomplish the strategic and operational objectives of an organization". Technology management is becoming more important for solving problems within organizations.

This had a serious effect on higher education as universities had complete lockdown and closed their campuses. Despite the instant response of higher education institutions to substitute face-to-face sessions with online education, these closures affected learning and examinations as well as the safety and legal status of international students in their host country. Perhaps most importantly, the crisis raises questions about the value offered by a university education which includes networking and social opportunities as well as educational content. To remain relevant, universities will need to reinvent their learning environments so that digitalization expands and complements student-teacher and other relationships (Schleicher, 2020, 4).

On-campus teaching and learning were interrupted by Covid-19 as schools and universities adopted physical distancing measures. In early 2020, UNESCO announced that school closures in a few countries had suspended

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

education activities for millions of students in various locations. Late March 2020, i.e., a few weeks after the World Health Organization had acknowledged the outbreak, national school closures had impacted almost one and a half billion students (UNESCO, 2020).

By the end of July 2020, only a very small number of universities had reopened. Soon after, most schools and universities around the world suspended in-person instruction, and many of them adopted alternative modalities of education delivery, including using online learning and relying on radio, television, mobile applications, and printed materials (Reimers & Marmolejo, 2022, 5).

Some of these alternative education arrangements represented innovative uses of existing technologies, which were the result of novel forms of collaboration and partnership among various kinds of organizations, including collaborations between schools and school systems and universities (Reimers & Schleicher, 2020).

The resulting limited options available to learn during the pandemic led to a growing concern over the impact of the pandemic on learning loss, student mental health, student disengagement with learning, and potential dropout, and over the long-term impact of these conditions on students and societies, as well as concern over growing disparities in the opportunity to learn (Reimers & Marmolejo, 2022, 6).

Also, COVID-19 Pandemic have many Educational Challenges, and universities put emergency action plan aimed at transitioning the delivery of courses into a virtual environment for their own students, including Online Delivery of Teaching-Learning, Development, and Deployment of Online Resources, Professional Development, Research, and Supporting Policy and General Outreach. (Al Nuaimi, Zainal, & Marmolejo, 2022, 228-231)

Study problem

As a result of the current coronavirus (COVID-19) crisis worldwide, the importance of e-learning has become clearer than ever. All universities are struggling to apply distance education technology given the fact that most are closed with no physical access whatsoever for students. This has demonstrated the importance of technology management for e-learning. Nowadays, millions of students attend online lectures, work on assignments, and watch on- and offline videos and material related to their courses of study. Only universities with a solid technology management strategy can survive in these difficult times. Hence, the research problem can be expressed in the following question: ***How can a reliable post-pandemic technology management model be designed to meet the distance e-learning education needs of universities worldwide?***

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Study objectives

The objective of this study is to develop an e-learning technology management model for higher education by

1. Identifying basic features of e-learning in higher education;
2. Reviewing models that influence e-learning technology management in universities;
3. Proposing a model for e-learning technology management in higher education;
4. Validating the model through a survey of e-learning and higher education experts.

Literature review

The education sector is undergoing a major transformation in the digital era. Students across the world are no longer interested in unidirectional 'chalk and board' teaching methods as they desire the learning process to be integrated and upgraded (Kupriyanova, et al., 2014). Online tools (i.e. e-learning) provide an opportunity for HEIs to facilitate, simplify, and contextualize the entire process of learning. Mohammadi (2015) argues that e-learning offers better access to a global student body without geographical limitations. All students can access courses from renowned institutions like Oxford and Harvard without any proximity requirement. Al-Qahtani and Higgins (2013) argue for the scalability benefit of e-learning, claiming that it benefits HEIs by saving a great deal of cost and time and letting them focus on better-quality delivery of knowledge. Cole et al. (2014) estimate that the effective utilization of an e-learning system has the potential to increase the information retention rate of students by 25–60%. Frehywot et al. (2013) point to other benefits of e-learning systems for both students and institutes, including personalization, quick lesson delivery, instant upskilling, and improved pace.

Hence was the need for technology management models to regulate the use of technology for education-related activities within and beyond higher education institutions. In this regard, Alshaher (2013) provides a technology management model for e-learning systems based on McKinsey's 7S Model, which includes the dimensions of Strategy, Structure, Systems, Style, Staff, Skills, and Shared Values. Alshaher argues that the multidimensional model ensures the readiness of the e-learning system and recommends that teaching institutions use the same model because it delivers a single composite score. If all the items in the model are postulated as a single first-order construct, then the mode will create ambiguity in ensuring the contribution of a specific element towards the overall construct. Researchers found that this model does not comprehensively support some of the teaching and learning requirements, particularly with regard to interactivity and students' active role in learning in

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

addition to being a rather inward model that did not take into consideration the external factors (like technology infrastructure and students access to internet off campus) and role of stakeholders into the e-learning process including employers and community members.

Naumova et al. (2017) provide another descriptive e-learning technological model by which existing techniques of learning are directed towards the reinforcement of electronic boards and other modern technical means. This model focuses on helping students overcome specific problems in their educational activities. He suggests using this model as it allows the student to undertake vigorous cognitive activities by analyzing current situations. It is also one of the most widely used teaching methods in the world. Yet, this model also focuses on the management of teaching and learning primarily with disregard for technology tools, skills, stakeholders, infrastructure, and other external factors.

Odii et al. (2013) propose another technological environment for e-learning. This comprises various modes and learning tools, including participation, content, instruction, structure, and evaluation. This model supports the development of detailed learning processes and activities with library support for students engaging in detailed learning through integrated collaboration tools. The interactive tools can be used along with activity tracking aimed at integrating personal diaries and learning events. This model though is more comprehensive but was seen by researchers as teacher-centered in nature where it focuses on the perspective of teaching staff and their needs in terms of delivery of teaching of different teaching and learning activities. It did not include students or other stakeholders' roles in the model as well as external factors that might affect the effectiveness of the model operation, particularly for off-campus teaching and learning activities within distance education mode during the lockdown.

Eraqi et al. (2011) provide an e-learning model for professional organizations, also indicating how it can be customized for use in educational institutes. They claim that the model can be used to raise the employability and academic skills of graduate students. It comprises three levels through which students not only gain the required information but also the desired educational support from tutors. Also, Morales et al. (2018) developed a model of technology and innovation management in higher education that included the factors of Systems Thinking, Globalization Dynamics, Complexity, University, and Risk. They also designed an educational model for universities based on the technology and innovation model which included the factors Internet, Regulations, Multimedia, and Global Networks, Work-based Learning, Integrated Learning, Problem-based Learning, Innovative Environment Learning, Cooperative Learning, Experiential Learning, Blended Learning, and Contextual learning. Another one of the most

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

commonly used technology management models is the Six-Facet Model. It includes six main parameters: a) planning, b) implementation, c) training, d) change, e) technology evaluation, and, f) product and process integration. Yet, these models remain to be inward-looking models not considering the specific nature of distance online education and e-learning as well as external factors that are essential for the success of teaching and learning practices that contribute to the educational program competencies and intended learning outcomes.

Due to the growing importance of E-learning for educational institutes in the digital era, particularly after the pandemic, researchers found the need for the development of a comprehensive technology management model that builds on and integrates previous models and adds further requirements that pandemic has exposed for a complete distance education e-learning model. Tas & Yeloglu (2018) described the need in higher education to include several management modules – technology management, knowledge management, and strategic management – in the first or second academic years of undergraduate courses. Ways to make technology programs more effective include examining more case studies about technology management in organizations, inviting more specialists to universities to relate the real-world experience, and giving students real technology management problems to solve. Internships for technology management undergraduates also help them network and form a bridge between university and industry. Such efforts support long-range planning by universities.

Owston et al. (2013) identify five main technological factors that are advised to consider when designing e-learning systems for educational institutes. Mtebe & Raisamo (2014) suggest authoring packages in which the instructors can overcome the difficulties involved with programming languages. Porter et al. (2014) posit that the learning management system must be designed effectively to monitor all learners' performance. Wanner & Palmer (2015) stress the importance of content management systems to deliver learning content to students and to facilitate tracking and data retrieval services. Education institutes must ensure the compatibility, maintainability, modularity, usability, and accessibility of the e-learning system (Kirkwood & Price, 2014). Researchers felt the need for further investigation to examine the validity and effectiveness of the proposed technology management model.

Methodology

Due to the interrelated, dynamic, and interdependent nature of e-learning technology management, researchers applied a system-based approach to develop an e-learning technology management model for higher education institutions. Kaufman (1970) summarizes the system-based approach in two words – analysis and synthesis – where analysis involves

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

identifying component parts and determining the relationships among those parts and between the parts and the whole system. Synthesis involves the design of a raw system so that the identified problem can be solved. Mukwa (1979) defines the system-based approach as a process by which needs are identified and solutions are selected from a range of alternatives, methods, and means are obtained and implemented, results are evaluated and revisions to all or part of the system. Hence, we designed the model components with reference to inputs, processes, outputs, and feedback loops.

Besides, thematic analysis was used as the qualitative analytic method for the experts' views and comments about the model.

"Through its theoretical freedom, the thematic analysis provides a flexible and useful research tool, which can potentially provide a rich and detailed, yet complex account of data" (Braun & Clarke, 2006, 5).

An inductive approach was used to identify the basic components and features of the proposed e-learning technology management model based on data provided by the experts. Then, the research followed the six steps of analysis developed by Braun and Clarke (2008)

Model Validation

An analytic questionnaire was designed on the basis of the components of the proposed model.

Though it has not yet proceeded to system operation and evaluation, the proposed model was validated using the designed questionnaire by a group of experts from different institutions and different countries (as shown in Tables 1 &2).

Table 1. Model Validation Experts sorted by affiliation

	Affiliation	number
1	Ministerial level senior staff (Ministry of Higher Education and Ministry of Information & Communication Technology)	6
2	University leaderships (Presidents, Vice presidents & Deans)	10
3	International organizations	5
4	E-learning experts	10

Table 2. Model Validation Experts sorted by country.

	Country	number
1	Costa Rica	1
2	Egypt	14
3	Japan	4
4	Jordan	7
5	Saudi Arabia	2
6	USA	3

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

The questionnaire was sent to 100 experts representing e-learning professionals, university experts, and leaders at international universities and IT organizations using an electronic form (Google form), Convenience sampling was used where experts were recruited through professional, alumni and personal networks. They were selected to represent different cultures and levels of administration within universities as well as other sectors that support e-learning provision (ministries, policymakers, IT organizations, etc.) to reflect comprehensive views about the model. We were able to collect feedback from 31 of them (i.e., a response rate of 31%). The experts were asked to estimate the importance level of each domain, dimension, and item of the model by rating each component using a five-level scaled evaluation (Strongly Disagree – Don't Agree – Neutral – Agree – Strongly Agree) graded 1–5. The percentage was calculated for each, item, dimension, domain, and the whole model.

Students' voice was inferred from research conducted on the university, post-pandemic, reflecting their learning experience and needs in relation to technology management within distance and online education. A study about Students' Perceptions of Using Microsoft Teams Application in Online Learning During the Covid-19 Pandemic revealed that 81.2% of students hoped that the learning process would continue online during the pandemic. However, the online learning process needs improvement where the learning process must be packaged as more attractive through various interactive methods. In addition, the interaction between lecturers and students and amongst students must be improved. They also expressed the need for improvement in the method of presenting learning material which is seen as monotonous and boring. The application of attractive learning methods is needed to increase student interest in learning and understanding concepts. Students hope that there will be some tutorial regarding the usage of applications and complained that using online learning requires a lot of internet quota to use in addition to inadequate internet network being unfortunate for students who have economic limitations. (Wea & Kuki, 2021).

The study by Abramov, Tatarnikova, Sikarev, Shilin, & Chusov (2021), has advised integrating virtual reality (VR) technologies, that can reduce the total cost of the learning process independently and with the advice of a teacher. the transition to innovative and digital technologies, the introduction of distance learning into the educational process, and the emergence of new external factors require the educational system to ensure a qualitative transition to new technologies. This requires capacity building to be ready for such changes and to be able to improve the quality of the educational process, gain additional skills and enhance students' competencies. Other studies expressed the importance of an interactive learning environment, reliable infrastructure, sufficient internet quota, and

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

guidance through tutorials and technical support were the most evident factors students wish to integrate into the model (A'yun, Suharso, and Kantun, 2021; Alsoud & Harasis, 2021).

On the level of leadership, a global survey was conducted on college and university leadership by the International Association of University Presidents and Santander Universidad on leadership responses to COVID-19 in 2020 which has indicated that the majority of universities consider their institutions not ready for COVID-19, where 58% focused on the need for faculty training and technology needs, 54% on maintaining academic standards, and that the majority of them (73%) are preparing for the blended mode of learning where 83% are considering investing in technology infrastructure. 63% of them are considering virtual mobility and 47% for internationalization at home. This was an insightful contribution to the technology management model design from a leadership perspective.

Results and Discussion:

a) Quantitative analysis

The importance level (%) of the proposed model components was evaluated by the experts using an analytic questionnaire. Findings are summarized in Table (3) and discussed below.

Table 3. The importance level (%) of the proposed model components is evaluated by experts.

No.	Domain	Importance (%)
I.	**Planning**	**88.40**
I.1.	**Program / Course Development**	**91.36**
I.1.1	Program / Course intended learning outcomes	92.59
I.1.2	Program / Course description	93.33
I.1.3	Content development	90.37
I.1.4	Assessment & Evaluation framework	93.33
I.1.5	Assignments and tasks	91.85
I.1.6	Academic calendar for each course every semester	86.67
I.2.	**Program / Course plan for e-learning**	**86.67**
I.2.1	Course storyboards/plan for e-learning	87.41
I.2.2	Multimedia planning	82.96
I.2.3	Digital knowledge resources	89.63
I.3	**Planning human resources**	**87.16**
I.3.1	Human resources needed	85.19
I.3.2	Roles and responsibilities	88.89
I.3.3	Needs assessment for capacity building	87.41

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

No.	Domain	Importance (%)
II.	**Governance & Administration**	**86.49**
II.1.	**Decision Making & Taking**	**85.33**
II.1.1	University management system (UMS)	91.85
II.1.2.	Metadata & data management	85.19
II.1.3	Boards decisions documentation	82.96
II.1.4	Archiving system	85.19
II.1.5	Financial management system	81.48
II.2.	**Enrolment management**	**88.40**
II.2.1	Student online payment, registration, and enrolment	88.89
II.2.2	Students and staff logs' monitoring	87.41
II.2.3	Academic advising	88.89
II.3.	**Quality assurance**	**85.74**
II.3.1	QA online surveys to all stakeholders	85.93
II.3.2	External review reports	85.93
II.3.3	QA aggregated data and reports	87.41
II..3.4	Quality progress reports publishing	83.70
III.	**Capacity Building**	**89.28**
III.1	**Resources**	**91.67**
III.1.1	Faculty members	90.37
III.1.2	E-learning development teams (instructional designers, editing teams, graphic designers, etc.)	88.89
III.1.3	IT specialists & technical support	95.56
III.1.4	Hosting: Data centers/cloud hosting	91.85
III.1.5	Applications: e-learning author software & learning management system	89.63
III.1.6	Databases	88.15
III.2	**Skills**	**86.17**
III.2.1	Gap analysis	84.44
III.2.2	Training for different groups	88.15
III.2.3	E-learning research & development	85.93
III.3	**Connectivity**	**90.00**
III.3.1	Connectivity policy	89.63
III.3.2	Connectivity services	89.63
III.3.3	Connectivity maintenance	89.63
III.3.4	Out-of-campus Internet service	91.11
IV.	**Development**	**85.37**
IV.1.	**Development**	**83.70**
IV.1.1	Digital content development	87.41

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

No.	Domain	Importance (%)
IV.1.2	Glossary of terms development & integration	82.22
IV.1.3	Objects' scanning & multimedia development	80.00
IV.1.4	Learning resources allocation	85.19
IV.1.5	Virtual learning tools development (virtual labs, galleries & reality)	85.93
IV.2.	**Validation**	87.04
IV.2.1	External review for e-learning	85.19
IV.2.2	Dry run and continuous evaluation	88.89
V.	**Interactive Teaching & Learning**	**89.26**
V.1	**Communication platforms**	**89.26**
V.1.1	Learning management system discussion forums & chat	88.89
V.1.2	Virtual classrooms and files sharing	91.85
V.1.3	Synchronous teaching activities	86.67
V.1.4	Interactive instructional tools (drag and drop, voting, interactive videos, virtual reality and integrated augmented reality tools)	89.63
VI.	**Assessment & Evaluation**	**84.92**
VI.1.	**Online Evaluation**	**87.62**
VI.1.1	Assignments management	92.59
VI.1.2	Online quizzes	88.15
VI.1.3	Participation follow-up	89.63
VI.1.4	Question banks	86.67
VI.1.5	Projects assessment	88.89
VI.1.6	Research	85.19
VI.1.7	Final exams	82.22
VI.2.	**Exit requirements**	**82.22%**
VI.2.1	Program / course ILOs verification	85.19%
VI.2.2	Certification exams preparation	80.74%
VI.2.3	Certification exams	80.74%
Total Percentage		**87.29%**

As shown in table (1), the **"Planning"** domain comes as the third most important domain of the model (88.40%). The importance of the three dimensions of this domain is arranged to descend as follows: "Program/Course Development", "Planning human resources", and "Program/Course plan for e-learning", "**Governance & Administration**" domain comes to the fourth important domain with a level of 86.49%. It includes three dimensions: "Enrolment management", "Quality assurance", and "Decision Making &

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Taking", "**Capacity Building**" domain was the most important one with a level of 89.28%. It consists of three dimensions, the most important of which is "Resources" followed by "Connectivity" followed by "Skills", and "**Development**" was the fifth most important domain of the Model with a level of 85.59%. It consists of two dimensions: "Validation" and "Development", "**Interactive Teaching & Learning**" was the second important domain of the model with a level of 89.26%. It includes only one dimension, "Communication platforms", "**Assessment & Evaluation**" was the sixth most important domain of the model with a level of 84.92%. It consists of two dimensions: "Online Evaluation" and "Exit requirements", and **The Total percentage of the Model Agree is (87.32%) with the Mean (4.366/5)**

b) Qualitative analysis:

Based on the thematic analysis approach used, data were coded where several codes were combined into themes and sub-themes. Codes that did not appear very often in the data were discarded. Comments by experts focused on the requirements and limitations of the model and its components for this model to be feasible.

Based on which, the following themes have been generated:

a) Context

Context was the main concern for experts where awareness of stakeholders (parents, students, employers, local communities) and their active involvement in planning and governance domains is a critical requirement for the successful implementation of the model. The Out-of-campus infrastructure and internet service are other factors determining the operation of the model.

b) Learning approaches

The used learning approaches were seen to be another factor that affects model implementation where for instance student-centered learning (SCL) would have requirements that will differ from the teacher-centered learning approach. Similarly, the competency-based assessment also required extra features and capabilities of online assessment and that needs integration with hands-on real-life skill-based learning objectives. Moreover, the integration of learning theories and policies will reflect on content design and interactivity. For example, the multiple intelligences theory requires the integration of multimedia, text, and interactive content that caters to the visual, logical, kinesthetic, and linguistic learners both in teaching and assessment.

c) Sustainability

Both financial and administrative sustainability was highlighted by experts in comments where they questioned the integration of financial mechanisms throughout the governance domain that looks after sustaining hosting costs, software licenses, and upgrading plans to cope with the

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

everchanging nature of technology. In addition, upgrading of staff (academic, technical, and administrative) capabilities with the creation of a pool of young leaders who can work on model sustainable and stable implementation are to be considered.

d) Equity

Considering different students' needs is a requirement for the model operation where consideration of the financial burden students might incur to get access to offline and online learning materials and resources including the size and cost of data transfer required and the discrimination this might entail against students from disadvantaged socio-economic backgrounds or those living in remote areas with limited access to quality internet service. Another equity factor was highlighted in the provision of gender-sensitive content where male/female equal representations might be needed in multimedia used especially in fields of specialisations that are regarded in some communities as a male of female dominant professions (e.g. engineering for males and nursing or teaching for females). Hence, experts questioned whether there would be means where universities can secure alternative ways for ease of platforms access by students in addition to data analysis of the helpdesk and support services offered to students to look for evidence-based equity practices. Also, some gender sensitivity parameters are to be introduced in the design and validation phases of the content development.

e) Quality

Quality of inputs, processes, and outputs that have been identified by the model is of extreme importance as highlighted by experts in all model domains and dimensions. Stress was made on the integration of quality standards in internal review processes that investigates quality indicators of model implementation.

f) External efficiency

Feedback from employers about the quality of graduates as well as research and services is to be taken into account to identify the external efficiency of the model operation. Employers need to be asked if they can feel a difference between graduates' competencies before and after e-learning implementation and whether they suffer from the lack of applied skills and professional attitudes as a direct impact of the distance modes of learning.

Description of the Proposed E-learning Technology Management Model

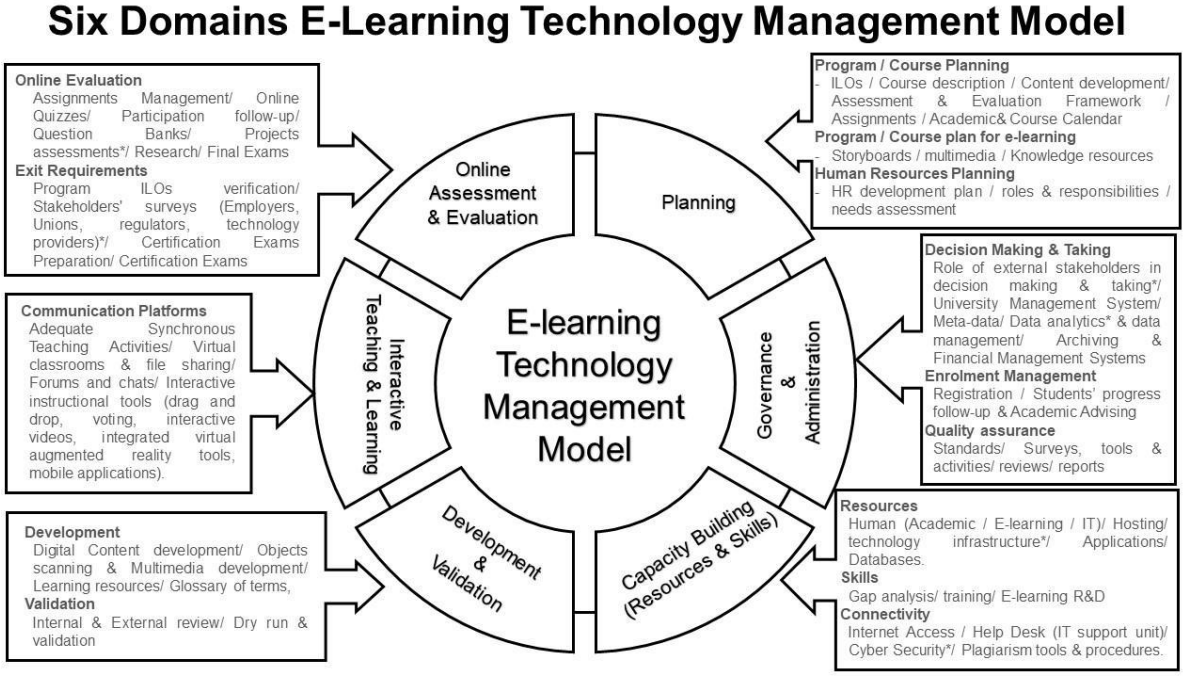
Since the intended outcome of e-learning as an educational service is the development of students' knowledge, skills, and attitudes, an e-learning technology management model should extend beyond course content and provision to assessment and evaluation processes that verify the achievement of the intended learning objectives (ILOs). And since the proposed model targets the management of the COVID-19 worldwide crisis, it relies on a

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

distance learning model with some possibility of face-to-face and direct contact teaching.

The model domains, dimensions, and statements were designed based on the models illustrated in the literature review in addition to the authors' personal experience who used e-learning for more than fifteen years in university teaching and management. Subsequently, some dimensions and items were added or modified, based on the feedback from the experts. Hence, differences between the questionnaire items and the actual model were due to the proposed input from experts. For example, some experts found that the proposed model as identified by the questionnaire elements is an inward-looking model that does not consider the involvement of external stakeholders and employers. Thus, A component was added to the governance and administration domain assigning roles for external stakeholders in the decision-making and taking process. Moreover, experts have dedicated attention to the quality component requesting the involvement of benchmarking and external review processes.

The proposed E-learning Technology Management Model is an integrated model that applies to both blended and distance modes of learning and is composed of six main domains: a) planning, b) governance & administration, c) capacity building, d) development, e) interactive teaching & learning, and f) assessment & evaluation (Figure 1). We will elaborate on each of these domains below.



* Items added by experts to the model's dimensions and statements

Figure 1: A Six Domains e-learning technology management model

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Planning

This domain is concerned with planning for all required e-learning needs at universities. It starts with planning the program and courses, including the core and specialisation requirements, pre-requisites, and academic progression as identified by the institutional policy and educational model. This is followed by publishing basic information about the e-learning syllabus (course description, calendars, assignments, and examinations) in order to set appropriate expectations and help students plan for their studies. It also includes the gap analysis for skills and resources (in terms of numbers and qualifications) to meet the required e-learning objectives.

The use of AI (such as adaptive learning) in some of the learning objectives is also part of the planning domain and considers what e-learning can accomplish as part of planning for pedagogy, or the pedagogical models a university is adopting.

a) Governance & administration

The model here is concerned with all system steering functions that are needed to implement e-learning at university, and that starts with the decision-making processes of governing bodies like boards and councils. Due to the current negative perceptions about the overall quality of distance education institutions (Nicole L. Davis et al., 2019) and online modes of education among employers that have led to lower recognition of e-learning as well as open and distance education credentials, external stakeholders need to take an active role in the decision-making process. Data availability and management is another integral element of the governance of e-learning, providing university leaders with meta-data and data management strategies employed by the university. Data analytics, correlating academics, finance, and other system components are needed for decision-making that relates to services and support for at-risk students. It's equally important to rely on well-integrated technology tools including digital archiving, a university financial management system, student progress follow-up, academic advice, and quality assurance tools. It also includes features that follow up on students' queries and monitor tutors' workload. Provision and management of information is an integral part of e-learning technology management and can support smooth and enlightened e-learning decisions and students' engagement in all sorts of e-learning activities.

b) Capacity building

The domain of capacity building focuses on ensuring adequate human resources to administer and implement e-learning at the university. It also considers the technology infrastructure needed to run different e-learning activities and continuous technology upgrades have given the fast pace of technological change. Skills development and training activities are also an integral part of capacity building and rely extensively on needs assessment

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

processes carried out in the planning domain. Digital literacy is a basic requirement for both staff and students and should be a regularly updated component of capacity building. Connectivity and internet access, inside and outside campus, are other requirements for efficient communication flow between the university and students. Since the best technology in the world installed on a university campus cannot guarantee efficient communication and learn at locations outside campus, continuous connectivity measurements should be used to guide instructional design and the type of technology used for stable, cost-effective, and efficient educational services. An IT help desk must also be available to provide help and support to students and staff inside and outside the campus. Another very important aspect to consider in the capacity building domain is cyber security and the software used to prevent hacking and other cyber security threats. Given the academic nature of e-learning, it's also important to consider anti-plagiarism tools to ensure that practices and deliverables are compatible with academic codes of ethics and core values.

c) Development

The domain of development deals with content development processes and their review and validation to ensure reliable content relevant to the program and courses. This domain is closely connected to the planning phase as it should follow a specific instructional design as laid out in the course description and storyboards. This includes digital content development, object scanning, and multimedia design and development. It also includes the provision of learning resources and a glossary of terms related to each course. Instructional design as recommended by experts is tailored to reflect the nature of e-learning where a student-centred design engages students for more independent and autonomous learning though some teaching strategies like flipped classroom and programmed learning. A validation process follows development through external review from experts in the local market as well as higher education institutions and research centres. The objective of validation is to ensure that content is up to date and complies with international and national standards. The validation process includes a dry run of developed content where feedback from students is used to ensure the readiness of developed content and compatibility with learning objectives.

d) Interactive teaching & learning

Nowadays higher education institutions emphasize student-centered learning approaches that require students to actively participate in certain activities. E-learning must therefore provide the means for interactive teaching and learning using forums for example is an e-learning privilege that encourages communication among students based on the objectives of the instructional design of e-learning. This can be achieved through synchronous teaching activities that give students the opportunity to communicate with

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

teaching staff at a distance. E-learning applications integrate virtual classrooms and file sharing features that can also help in this regard. Moreover, interactive instructional tools like drag-and-drop, voting, interactive videos, virtual reality, and integrated augmented reality help increase students' engagement. It's very important to note here that these learning tools must serve learning objectives. Some faculty members simply use them because they are fascinated by the technology and sometimes lose track of authentic learning. So, it is important to retain a focus on learning optimization through less sophisticated means. Thus, adequate interactivity in terms of quality, time, and quantity should be considered and assessed through student feedback on interactive, live, and synchronous activities.

e) Assessment & evaluation

The assessment and evaluation domain is concerned with verifying the achievement of learning outcomes as specified in the academic program. It deals with assignment management including publishing, uploading, and downloading of assignments' files, review, and feedback, as well as grading for individual assignments and the overall grades allocated to different forms of assignments. It also manages online quizzes and question banks, and students' active participation in group and individual work. Moreover, the assessment domain requires the full features for projects assessments and research work with group division and task distribution of team members. Final exams are an integral component and are attached to program ILOs verification. The model does not analyze the process from an institutional standpoint; thus, it needs to reflect the role of external processes and players (regulators, employers, unions, technology providers, etc.). Consequently, stakeholders' surveys are required to generate dynamic feedback from stakeholders. It should also consider certification exams as an indicator for comparability of university graduates to labor market needs. Thus, preparation services offered for different types of certification exams as well as coordination for certification exams registration and management are important factors that an e-learning model should consider. Links, resources, and tutorials could be offered on the university e-learning portal as well as to online registration services.

Conclusion, implications & recommendations

The aim of the current study was to propose a model for technology management of universities for distance and blended modes of learning. Findings have provided guidance for the considerations that need to be fulfilled in the model elements based on experts' views. It achieves the integration and interrelation between the model domains and components. Thus, results have indicated that poor or partial implementation of some of the

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

model components will affect the quality of learning and limit the model operation and deliverables.

Equity was the main parameter that findings have stressed and that universities need to consider while implementing e-learning technology management that allows access to all students regardless of their socio-economic backgrounds. Hence, the model offers flexibility in adapting technology in a way that suits the local infrastructure and services as well as available applications and software. Because the model is outcome-based and requires the verification of learning outcomes, no specific technology (hardware or software) is specified.

The proposed model has a cost-effective design that minimises resources and maximises return on investment (ROI) while achieving the desired goals. It also tries to find numerous alternatives for face-to-face and traditional learning modes to ensure interactivity and students' active engagement. Concern remains regarding the hands-on development of skills in some of the applied fields of study. This needs to be taken into consideration in the assessment and evaluation of online and distance education.

Hence, the proposed e-learning technology management model provides better access, more economic management of resources, and maximizes return on investment with better learning outcomes through the specified six domains, namely: a) planning, b) governance & administration, c) capacity building, d) development, e) interactive teaching & learning, and f) assessment & evaluation.

Further studies yet need to be conducted to assess the scalability and sustainability of the proposed model given the rapid technological developments as well as the evaluation of satisfaction rates among stakeholders upon the adoption of the proposed model.

References:

1. Abramov, V., Tatarnikova, T., Sikarev, I., Shilin, M., & Chusov, A. (2021). Educational digital tools for university level under climate change and COVID-19. *Journal of Physics: Conference Series*. 012037. 1-5. DOI: 10.1088/1742-6596/2001/1/012037.
2. Abu-Al-Aish, A., & Love, S. (2013). Factors influencing students' acceptance of e-learning: An investigation in higher education. *The International Review of Research in Open and Distributed Learning*, *14*(5).83-107. DOI: 10.19173/irrodl.v14i5.1631.
3. Aceves, N., Siller, A., Torres, A., & Martinez, O., (2013). Technology based Entrepreneurship: Challenges and Opportunities to Enhance a University Spinoff. *ICERI. Proceedings*, 370–378.
4. Al Nuaimi, B., Zainal, H., and Marmolejo, F. (2022). University and School Collaborations during a Pandemic - Sustaining Educational

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Opportunity and Reinventing Education. Educational Continuity During the COVID-19 Pandemic at Qatar Foundation's MultiverCity. *Knowledge Studies in Higher Education*. (8). https://doi.org/10.1007/978-3-030-82159-3_15.

5. Al-Adwan, A., Al-Adwan, A., & Smedley, J. (2013). Exploring students' acceptance of e-learning using Technology Acceptance Model in Jordanian universities. *International Journal of Education and Development using ICT*, *9*(2). 4-18.
6. Al-Azawei, A., Parslow, P., & Lundqvist, K. (2017). Investigating the effect of learning styles in a blended e-learning system: An extension of the technology acceptance model (TAM). *Australasian Journal of Educational Technology*, *33*(2). 1-23. https://doi.org/10.14742/ajet.274.
7. Al-Qahtani, A. & Higgins, E., (2013). Effects of traditional, blended and e-learning on students' achievement in higher education. *Journal of computer assisted learning*, *29*(3). 220–234. https://doi.org/10.1111/j.1365-2729.2012.00490.x.
8. Alshaher, A. (2013). The McKinsey 7S model framework for e-learning system readiness assessment. *International Journal of Advances in Engineering & Technology*, *6*(5), 1948.
9. Alsoud, A., & Harasis, A. (2021). The Impact of COVID-19 Pandemic on Student's E-Learning Experience in Jordan. *Journal of Theoretical and Applied Electronic Commerce Research*. 16(5). 1404-1414. https://doi.org/10.3390/jtaer16050079
10. Arkorful, V., & Abaidoo, N. (2015). The role of e-learning, advantages, and disadvantages of its adoption in higher education. *International Journal of Instructional Technology and Distance Learning*, *12*(1), 29–42.
11. Arvanitis, R., & Villavicencio, D. (1994). Transferencia de tecnología y aprendizaje tecnológico. *Reflexiones Basadas En Trabajos*. Retrieved from: https://www.researchgate.net/profile/Rigas_Arvanitis/publication/46548039_Transferencia_de_tecnologia_y_aprendizaje_tecnologico_Reflexiones_basadas_en_trabajos_empiricos/links/0912f5119012ddfffa000000.pdf. accessed on: 10/3/2020.
12. Ayun, K., Suharso, P., & Kantun, S. (2021). Google Classroom as the Online Learning Platform During the Covid-19 Pandemic for the Management Business Student at SMK Negeri 1 Lumajang. *3rd International Conference on Environmental Geography and Geography Education. IOP Conf. Series: Earth and Environmental Science*. 747. 1-7. doi:10.1088/1755-1315/747/1/012025.
13. Bernardt, Y., Meijaard, J., & Kerste, R. (2002). *Spin-off start-ups in the Netherlands*. EIM Business and Policy Research. Retrieved from:

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

https://www.researchgate.net/publication/5012513_Spin-off_start-ups_in_the_Netherlands. on: 23/4/2022.

14. Bhattacherjee, A. (1998). Managerial Influences on Intraorganizational Information Technology Use: A Principal-Agent Model. *Decision Sciences, 29*(1), 139–162. https://doi.org/10.1111/j.1540-5915.1998.tb01347.x.
15. Borges, C., & Jacques Filion, L. (2013). Spin-off process and the development of academic entrepreneur's social capital. *Journal of Technology Management & Innovation*, 8(1), 21–34.
16. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology, *Qualitative Research in Psychology*, 3:2, 77-101, DOI: 10.1191/1478088706qp063oa.
17. Cabrera, A., & Soto, M. (n.d.). *Emprendeduría de base tecnológica: hacia un modelo dinámico.*
18. Chimborazo, L., Guevara, P. & Toapanta, E. (2017). Strategies: A Model of University Management. *Journal of Service Science and Management*, 10, 132-149. https://doi.org/10.4236/jssm.2017.102012.
19. Cole, M., Shelley, D., & Swartz, L. (2014). Online instruction, e-learning, and student satisfaction: A three-year study. *The International Review of Research in Open and Distributed Learning*, *15*(6). 111-131. DOI: 10.19173/irrodl.v15i6.1748.
20. Davis, N., Gough M., & Lorraine L. Taylor. (2019) Online teaching: advantages, obstacles, and tools for getting it right. *Journal of Teaching in Travel & Tourism* 19:3. 256–263.
21. Day, S., & Schoemaker, H., (2000). Avoiding the pitfalls of emerging technologies. *California Management Review*, 42(2), 8–33. https://doi.org/10.2307/41166030.
22. Díez Echavarría, F., Valencia Arias, A., & Villa E. (2015). Promoción de la cultura investigative como motor de desarrollo económico y social: *Una visión sistémica. Espacios*, 36(1).
23. Eraqi, I., Abou-Alam, W., Belal, M., & Fahmi, T. (2011). Attitudes of undergraduate students toward e-learning in tourism: The case of Egypt. *Journal of teaching in travel & tourism*, *11*(4), 325–348.
24. Frehywot, S., Vovides, Y., Talib, Z., Mikhail, N., Ross, H., Wohltjen, H, & Scott, J. (2013). E-learning in medical education in resource constrained low-and middle-income countries. *Human resources for health*, *11*(1), 4.
25. Friedman, J., & Silberman, J. (2003). University technology transfer: do incentives, management, and location matter? *The Journal of Technology Transfer*, *28*(1), 17–30.
26. Gavankar, S., Anderson, S., & Keller, A., (2014). Critical Components of Uncertainty Communication in Life Cycle Assessments of Emerging

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Technologies. *Journal of Industrial Ecology*, *19*(3), 468–479. https://doi.org/10.1111/jiec.12183.

27. Gaynor, G., (1999). *Manual de gestion en Tecnologia. Tomo 1*. Retrieved from http://dspace.ucbscz.edu.bo/dspace/handle/123456789/3173. Accessed on: 20/4/2020.
28. Geisler, E. (1995). Industry–university technology cooperation: a theory of inter-organizational relationships. *Technology Analysis & Strategic Management*, *7*(2), 217–229.
29. Gür, U., Oylumlu, S., & Kunday, Ö. (2016). Critical assessment of entrepreneurial and innovative universities index of Turkey: Future directions. *Technological Forecasting and Social Change*. https://doi.org/10.1016/j.techfore.2016.09.008. Accessed on: 18/1/2022.
30. Howland, K., Good, J., & Robertson, J. (2007). A learner-centered design approach to developing a visual language for interactive storytelling. *ACM*. Retrieved from http://dl.acm.org/citation.cfm?id=1297286. Accessed on: 15/3/2021.
31. Jiménez, C. N., Castellanos, O. F., & Morales, M. E. (2007). Tendencias y retos de la gestión tecnológica en economías emergentes. *Revista Universidad EAFIT*, *43*(148), 42–61. Retrieved from http://publicaciones.eafit.edu.co/index.php/revista-universidad-eafit/article/view/701. Accessed on: 11/2/2021.
32. Kaufman, R.A. (1970). System approaches to education-discussion and attempted integration. In Piele et al., *Part III of Social, and technological change: Implications for education.* Eugene, Oregon: University of Oregon.
33. Kaya, P., Erol, T., & Ozbilgin, I., (2017). Defining a technology management framework within a defense enterprise. *Journal of Management, Marketing and Logistics (JMML)*, V.4, Iss.3. 301–309. http://doi.org/10.17261/Pressacademia.2017.492.
34. Kirkwood, A., & Price, L. (2014). Technology-enhanced learning and teaching in higher education: what is 'enhanced 'and how do we know? A critical literature review. *Learning, media and technology*, *39*(1), 6–36.
35. M., Kupriyanova, V., Morais, R., & Colucci, E. (2014). E-Learning in European Higher Education Institutions: Results of a Mapping Survey Conducted in October–December. *European University Association*.
36. Mohammadi, H. (2015). Investigating users' perspectives on e-learning: An integration of TAM and IS success model. *Computers in Human Behavior*, *45*, 359–374.
37. Morales, A., Nielsen, J., Bacarini, H., Martinelli, S., Kofuji, S., and Díaz, J., (2018). Technology and Innovation Management in Higher

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Education—Cases from Latin America and Europe. *Administrative Science*. 8(11).1-34. doi:10.3390/admsci8020011w.

38. Mowery, C., & Shane, S. (2002). Introduction to the special issue on university entrepreneurship and technology transfer. *Management Science, 48*(1), v–ix.
39. Mtebe, J., & Raisamo, R. (2014). Investigating students' behavioural intention to adopt and use mobile learning in higher education in East Africa. *International Journal of Education and Development using ICT, 10*(3).
40. Mukwa, C. W. (1979). Toward a Systematic Approach to Educational Media uses in the Secondary School Education of the Republic of Kenya, A Field Survey of Tools and Techniques for Learning. *PhD Dissertation*, Michigan State University.
41. National Research Council (1987). Management of Technology: The Hidden Competitive Advantage. *National Academy Press,* Washington, DC.
42. Naumova, T. & Vytovtova, N. & Mitiukov, N. & Zulfugarzade, T. (2017). Model of Distant Learning Educational Methods for the Students with Disabilities. *European Journal of Contemporary Education*.. 10.13187/ejced.2017.3.565.
43. Odii, J., Elusoji, W., Akanji, C, Odiketa A, Oladosu, A. (2013). Construction of a web-based learning portfolio system through learning style aware adaptive systems. 1. 94–100. Retrieved from: file:///C:/Users/Dr.%20Mohamed%20Elnagar/Downloads/4-Constructionofawebbasedlearningportfoliosystemthroughlearningstyleawareadaptivesystems.pdf. on: 23/4/2022.
44. Owston, R., York, D., & Murtha, S. (2013). Student perceptions and achievement in a university blended learning strategic initiative. *The Internet and Higher Education*, *18*, 38–46.
45. Porter, W., Graham, R., Spring, A., & Welch, R. (2014). Blended learning in higher education: Institutional adoption and implementation. *Computers & Education*, *75*, 185–195.
46. Reimers, F., & Marmolejo, F., (2022). University and School Collaborations during a Pandemic - Sustaining Educational Opportunity and Reinventing Education. Leading Learning During a Time of Crisis. Higher Education Responses to the Global Pandemic of 2020. *Knowledge Studies in Higher Education*. (8). https://doi.org/10.1007/978-3-030-82159-3.
47. *Reimers, F., & Schleicher, A. (2020). Schooling disrupted, schooling rethought. How the Covid-19 Pandemic is changing education*. OECD. Retrieved from:

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

https://globaled.gse.harvard.edu/files/geii/files/education_continuity_v3.pdf. on: 1/1/2022.

48. Schleicher, A. (2020). The Impact of Covid-19 on Education Insights from Education at a Glance. OECD. Retrieved from: https://www.oecd.org/education/the-impact-of-covid-19-on-education-insights-education-at-a-glance-2020.pdf. On: 21/10/2021.
49. Siegel, S., Waldman, D., & Link, A. (2003). Assessing the impact of organizational practices on the relative productivity of university technology transfer offices: an exploratory study. *Research Policy*, *32*(1), 27–48.
50. Silva, A., & Nuño, P. (2014). Design of an Expert System Model for the Analysis of the Innovation Technology Management Process: A Case Study at the University of Coahuila, México. *IIE Annual Conference*. Retrieved from: https://api.semanticscholar.org/CorpusID:110106067. On: 2/3/2022.
51. Syryamkin I., Syryamkina G. (2015). Technology Management as a tool of innovative strategy of education and cognitive management. International Conference on Research Paradigms Transformation in Social Sciences. *Social and Behavioral Sciences.* 166. 468–471.
52. Tapias G., H. (2000). *Gestión Tecnológica Y Desarrollo Tecnológico. Universidad de Antioquia*. Retrieved from http://datateca.unad.edu.co/contenidos/203029/contenidos gestion. On: 12/2/2022.
tecnologica/GESTION_TECNOLOGICA_Y_DESARROLLO_TECNOLOGICO.pdf. Accessed on: 13/3/2020.
53. Tas, M., & Yeloglu, H., (2018). The Need for Technology Management Education for Undergraduate Programs: A Conceptual Framework. *Universal Journal of Educational Research*. 6(2). 249-256, DOI: 10.13189/ujer.2018.060206.
54. Tegarden, F., Lamb, B., Hatfield, E., & Ji, X., (2012). Bringing emerging technologies to market: Does academic research promote commercial exploration and exploitation. *IEEE Transactions on Engineering Management*, 59(4), 598–608. https://doi.org/10.1109/TEM.2011.2170690.
55. United Nations Education, Science and Culture Organization. (2020, April 3). 290 million students out of school due to COVID-19: UNESCO releases first global numbers and mobilizes response. Retrieved from: https://web.archive.org/web/20200312190142/https://en.unesco.org/news/290-millionstudents-out-school-due-covid-19-unesco-releases-irst-global-numbers-and-mobilizes. on: 23/3/2022.
56. Villa, E., Echeverry, J., & Jiménez, C. (2015). *Perspectives of university management from a comparative analysis of the management of*

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

traditional and emerging technologies. 775–792. Retrieved from https://www.iet-c.net/publication_folder/ietc/ietc2015.pdf. on: 13/3/2020.

57. Wanner, T., & Palmer, E. (2015). Personalising learning: Exploring student and teacher perceptions about flexible learning and assessment in a flipped university course. *Computers & Education*, *88*, 354–369.
58. Wea, K., & Kuki, A. (2021). Students' Perceptions of Using Microsoft Teams Application in Online Learning During the Covid-19 Pandemic. *International Conference on Science Education and Technology (ICOSETH). Journal of Physics*. Conference Series. 1842. doi:10.1088/1742-6596/1842/1/012016.
59. Zinov V.G. Zinov, Kozik V.V., S.A. Tsyganov and Syryamkin V.I. (2010). *Technology Management*. Tomsk: Publishing House of Tomsk State University.

ESJ Social Sciences

Participatory Project Monitoring and Evaluation and Performance of Mango Farming Projects in Makueni County, Kenya

Charles Kyale Kisumbi, PhD Candidate
Department of Management Science and Project Planning, Faculty of Business and Management Sciences, University of Nairobi, Kenya
Dr. Angeline Sabina Mulwa, PhD
Dr. John Mwaura Mbugua, PhD
Senior Lecturers, Faculty of Education, Department of Educational Management, Policy and Curriculum studies, University of Nairobi, Kenya

Doi:10.19044/esj.2022.v18n12p84

Submitted: 02 March 2022
Accepted: 12 April 2022
Published: 30 April 2022

Copyright 2022 Author(s)
Under Creative Commons BY-NC-ND
4.0 OPEN ACCESS

Cite As:
Kisumbi C.K., Mulwa A.S. & Mbugua J.M. (2022). *Participatory Project Monitoring and Evaluation and Performance of Mango Farming Projects in Makueni County, Kenya*. European Scientific Journal, ESJ, 18 (12), 84. https://doi.org/10.19044/esj.2022.v18n12p84

Abstract

This paper focuses on showing the necessity of crafting a feasible project monitoring and evaluation policy which would be an indispensable appraisal tool for assessing the performance of mango projects. It is extracted from the PhD thesis, which aimed to establish the influence of participatory monitoring and evaluation of mango farming projects in Makueni County, Kenya. A pragmatic research paradigm, a descriptive study plan, and a multi-stage sampling technique were used in the study. A sample of 375 respondents using the Krejcie and Morgan tabulation formula was selected from a population of 12,622 mango farmers. Descriptive and inferential statistics were used as tools for quantitative data analysis, while the content analysis was used for qualitative data analysis. The null hypothesis that there was no significant relationship between the participatory monitoring and evaluation of the project and the performance of the mango farming projects was tested using the correlation and the F-test. The results presented a statistically significant correlation at 95% confidence level with DF (2,367) F=4.756, t=2.269 at level of significance, P=0.000<0.05, r=0.0879 and R square=

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

0.0773. The null hypothesis was therefore rejected, illustrating a significant relationship between the participatory project M&E and the performance of the Mango projects. Based on the results, the study identified a pressing need to use participatory project monitoring and evaluation to address performance issues across the mango value chain. Partnership Support between national and county governments was necessary to engage key experts in the field of agricultural extension, in order to engage mango farmers in improving mango performance.

Keywords: Participatory project monitoring and evaluation, mango projects performance, preharvest and postharvest phases, project management practices, project stakeholders

Introduction

The study investigated the influence of participatory project monitoring and evaluation of mango farming projects in Makueni County, Kenya. Mango farmers grappled with many problems that affected performance, which led to reduced production and income. Poverty level in Makueni County was reported to be about 60.6% (KNBS, 2019), and yet many farms were teeming with mango trees. The mango tree economic performance could be enhanced to improve and spur economic growth for the rural community. However, there has been concerted effort to eradicate poverty by empowering mango farmers through the establishment of Makueni Fruits Processing Plant, for the purpose of value addition and stabilization of mango prices (Farmbizafrica, 2018). A Mango report by Horticultural Crops Directorate (HCD) ranked Makueni County as the top mango-producing region and yet mango farmers benefited least in their mango sales (Freshplaza, 2019).

Mango sales projections revealed fluctuations ranging between 3.5b to 5b depending on environmental factors, preharvest and postharvest challenges prevailing in any given year, and yet fewer farmers did break-even (Freshplaza, 2019). Nevertheless, despite this impressive camouflaged mango production and marketing achievements, poverty levels in Makueni County have remained quite high, currently standing at 60.6 % (KNBS, 2019). This might be deduced to mean that mango farmers did not benefit much from their mango production. For instance, in India, middlemen menace was reported as a big problem in the mango sector (Purushottam, 2015). In spite of this, cultivation of mango fruit globally is surpassing many other popular fruits due to consumers' realization of its nutritional value such as medicinal content, vitamins, antioxidant properties and other health benefits (Lauricella, Emanuele, Calvaruso, Giuliano & D'Anneo, 2017).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Consequently, the lack of proper participatory project Monitoring and Evaluation in mango projects impaired the quality of mangoes, and it is inherently widespread in the study area. The participatory project M&E seemed to be a tedious job to be undertaken by agricultural extension experts and mango farmers, as they addressed mango problems when the damage had already occurred. Through M&E, quality can be sufficiently enhanced throughout the post-harvest phase, because the quality and quantity cannot be rectified during post-harvest stages, when damage has occurred. Stakeholder involvement in development projects has improved the performance of community megaprojects, regardless of the perception of a project manager (Maddaloni & Davis, 2017). Due to the cost constraints of inputs and mango planting timelines before mango maturity, mango farmers were usually on their own from pre-harvest phase to post-harvest phase. It has been alluded that performance of CBOs agricultural development projects had shown to have had many inherent problems which translated to low returns (Simiyu, Ngugi & Minja, 2018).

Project management is a cross-pollination of disciplines that can be adopted and applied to all types of projects in private and public sector. This helps to manage and evaluate communication, and coordinate the best management practices that has a significant impact on project's success, through the project life cycle phases of planning and execution (Usman, Soomro & Brohi, 2014; Ihesiene, 2014; Tahir & Naeem, 2017; Siddique, Ahad & Din, 2019). When project plans are implemented with many inherent problems, and without the support of M&E, they are bound to fail along the way. For mango projects to increase production, agricultural extension officers should always ensure the success of participatory project monitoring and evaluation to enhance mango performance. The impact of the project's success is dependent entirely on the leadership of project management practices, the experience of the project manager, and an enabling work environment (Tahir & Naeem, 2017). According to PMI Project Management (PMBOK), the 10 project knowledge areas should be monitored and controlled appropriately throughout the modern development life cycle to minimize project uncertainties (Usman, Soomro & Brohi, 2014; PMI's PMBOK, 1996).

National transformation and sustainable development can be revitalized through the establishment and application of project management methods, under auspices of acceptable economic and the prevailing political climate that guarantees a serene environment, to achieve effective and efficient project delivery (Ihesiene, 2014). Agricultural extension training courses involving M&E methods should always be available to farmers to improve their mango managerial skills to control diseases and pest infestations. Benchmarking, coaching, and mentorship on modern M&E

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

methods in mango production is bound to enhance performance in M&E, training on current agricultural practices, better understanding of mango skills, and improved production. Stakeholder participation in M&E enhances the prerequisite technical knowhow. Furthermore, proper mango management skills should be taught to farmers as a way of increasing production. It is therefore of paramount importance that mango policies are framed in such a way as to be strategically aligned with mango production and markets. Land tenure systems should also be formulated in a way that would improve production in the agricultural sector. It has been alluded that the agricultural sector is the mainstay of Kenya's economy, and it should always be strengthened through the participation of various stakeholders (Simiyu, Ngugi & Minja, 2018).

Objective of the Study

The objective of the study is to establish how participatory monitoring and evaluation influences the performance of mango farming projects in Makueni County, Kenya.

Research Hypothesis

The null hypothesis stated that there was no significant relationship between participatory project monitoring and evaluation and performance of mango farming projects in Makueni County, Kenya.

2. Literature Review

Monitoring and evaluation are project control tools that address project creep and other discrepancies that compromise project deliverables within a community. Through participatory project monitoring and evaluation, gaps are controlled and the overall performance of mango management projects in various project environments is influenced. The use of M&E is critical in projects because it is a steady-state corrective tool to influence performance. Yield improvement through monitoring of progress is important for monitoring and evaluating gaps, so that mango projects remain on track during the pre-harvest and post-harvest phases. The results of an empirical study of M&E on the influence of horticulture projects revealed that the element of human resource capacity and human capital development contributed an incremental change in terms of productivity and performance (Murei, Kidombo & Gakuu, 2018).

M&E is able to track achievements in mango production by controlling diseases and pest infestations through good management practices that require good care of mango trees. An empirical study alluded to the existence of over 260 species of insects and mites were most prevalent in many mango orchards and eventually affected performance (Muhammad, Iqbal Saeed, Javed &

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Khalid, 2013). Monitoring and evaluation in mango production are very important in managing and controlling pests and diseases which are prevalent in infesting mango foliage, buds and tree trunks, leading to reduced mango production (Muhammad, Iqbal, Saeed, Javed & Khalid, 2013; Grieshbach, 2011). Project M&E is important in development projects as it helps various project stakeholders to know the extent to which their projects met the set goals and objectives, in order to realize the desired effect (Kyalo, Mulwa & Nyonje, 2015). Monitoring and evaluation are a deliberate process that involves a systematic effort of collecting and analysing information in order to promote efficiency and effectiveness in the use of project resources to strengthen project performance (Kyalo, Mulwa & Nyonje, 2015). Ibid, M&E evaluates and measures a project's progress by examining its strengths, weaknesses, and impact. A study showed that lessons learnt from China's experiences is able to increase agricultural production for faster rural development and could be replicated in food production to reduce poverty (Kevin & Fan, 2014).

Monitoring and evaluation are essential to verify whether the project is achieving its expected outcomes during the start-up, planning, and implementation phases of the project. Failure to use M&E to monitor agricultural progress precipitated the Chinese famine of 1958 to 1961, which plunged the entire country into famine (Jisheng, 2013). Without M&E, mango quality would not be standardized to satisfy consumers' expectations. Project monitoring and evaluation, land tenure systems and ownership are crucial to the future sustainability and overall performance of mango projects in rural areas. The use of M&E measures in the mango supply chain may have a long-term impact on the quality of mango fruit (Brecht, Mitcham, Sargent & Kader, 2009).

Project management is multidisciplinary, involving the cross-pollination of disciplines to provide information, which can be used to verify mango production decisions by a variety of meso-experts. Stakeholder engagement involving a combination of efforts, underpinned by development strategies, leads to the reduction of hunger and poverty through the development of agriculture and infrastructure (Kevin, Claire & Fan, 2014). Monitoring and evaluation should be included in farm management policies to evaluate mismanagement in mango orchards. More broadly, M&E addresses the healthy restoration of biodiversity, ecosystem services at the project landscape level, in order to increase the diversity of restoration and production objectives (Hughes, Adams, Butchart, Field, Kelvin & Warrington, 2016). To enhance the benefits of mango production, sustainability of systems must be implemented, highlighted, and coordinated with pest management by experts in order to achieve higher production (Mele, Nguyen, & Huis, 2010). It appears that in most developing countries, there are endemic shortages of

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

quality mangoes due to poor planning and lack of utilization of M&E to monitor production. To increase mango production, different Morphotypes should be studied in nurseries prior to transplanting seedlings under different environmental and climatic conditions (Baita, Manga & Mustapha, 2010).

There should be a management style that provides good projects from start to finish. In order to increase mango production, a suitable rootstock would need to be adapted to the local climate (Baita, Manga & Mustapha, 2010). It has been suggested that all aid agencies that assist farmers should reorganize their efforts for agricultural projects to enhance production (Crawford & Bryce, 2003). The absence of M&E in mango projects can lead to substantial losses. The lack of markets for mangoes has led to rotting mangoes, causing environmental degradation and a health threat to everyone (Lorenzo-Santiago, Juárez-López, Rosas-Acevedo, Rendón-Villalobos, Turin-Jiméne & García-Hernández, 2018). M&E is a useful tool for reporting project design and assessment status (Crawford & Bryce, 2003). Environmental policy should be incorporated into M&E to monitor and control mass-produced mango waste and take appropriate measures for the safe disposal of waste (Lorenzo-Santiago, Juárez-López, Rosas-Acevedo, Rendón-Villalobos, Turin-Jiméne & García-Hernández, 2018).

In the mentoring of farmers in the use of M&E tools in mango farming, the production failures recorded before and after the harvest could have been reduced to manageable levels. If the participatory monitoring and evaluation system functioned optimally in mango farming, mango farmers would not suffer significant mango losses during the post-harvest period. Mango is affected by pests that eventually cause significant losses to mango-producing communities (Nankinga, Isabirye, Muyinza, Rwomushana, Stevenson, Mayamba, Aool & Akol, 2014). Agricultural extension is considered the best way to manage good management practices to transfer management and innovative expertise to increase mango production. The lessons of agricultural development in Africa relate to openness and liberalization, which is supported by a process of developing evidence-based agricultural policies for rural development to stimulate policies in favour of the poor (Kevin, Claire & Fan, 2014). Agricultural development is at the heart of food security to eradicate poverty by linking it to identifying possible policies to boost food production (Bonan, Pareglio & Rotondi, 2015).

Agricultural projects that were monitored and evaluated achieved planned production targets for farmers. Project evaluation helps to clarify the objectives of mango farming to establish well-defined measures and controls to improve performance. M&E helps policymakers shape policies through conscious decision-making processes that result to efficiency and cost-effectiveness (Bonan, Pareglio & Rotondi, 2015). In the agricultural sector, integration of M&E is able to achieve its intended objectives (Malley, Hart,

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Buck, Mwambene, Katambara, Mng'ong'o & Chambi, 2017). Challenges facing community development projects are primarily due to skills shortages and poor infrastructure development in rural areas (Shava & Thakhathi, 2016).

The lack of M&E seems to transcend the majority of agricultural projects in developing countries. This could be due to a lack of adequate training in M&E in agricultural and mango production as young energetic people's disinterest in agricultural activities is endemic. This explains the poverty in the developing world, where arable land is abundant and weather conditions are good, but food security still remains dire. Professional advice on the use of M&E should be linked to services and projects by experts (Shava & Thakhathi, 2016). Furthermore, a better application of M&E has led to an improvement in agricultural development in LRAD projects (Antwi & Oladele, 2013). Monitoring and evaluation services for the Smallholder Rice Project were managed based on socio-economic factors through Planning, Programs and Monitoring Units (PPUPs) to achieve expected outcomes (Akroyd, 1999). The logic framework approach was not routinely used as a project planning tool in organizations, but in agricultural projects, experts had their own M&E approaches that worked (Akroyd, 1999).

The use of M&E tools provides the idea of well-managed projects in a variety of project environments to exploit the socio-economic benefits of improved mango production. The overall economic benefits of M&E projects would be food security, employment, and sustainability of farmers' returns from mango sales. The use of M&E has been consistently used in projects to effectively conduct social assessments in project execution (Golini, Corti & Landoni, 2017). To ensure successful project implementation, the project environment must be sufficiently conducive for a viable emerging agricultural sector that benefits most farmers (Verschoor, Rooyen & D'Haese, 2005). M&E is a significant leverage tool for all projects that monitors and evaluates changes to control hidden project pitfalls and risks. Many agricultural planners tended to concentrate on technical, financial and economic issues, but gave little attention to socio-economic analysis, institutional, environmental and health issues, that were just as significant (Akroyd, 1999).

Lack of technical expertise in M&E, which exacerbated fruit fly infestations, was a big issue that required M&E controls before damage occurred. Existing mango policies and regulations did not appear to be working effectively and efficiently to prevent the threat from intermediaries with unfair prices that made mango farmers unable to make a profit. Inaccurate methods of planting and harvesting have tended to deteriorate the quantity and quality of mangoes, leading to lower incomes (FAO, 2017). There was a lack of financial means to buy farm inputs that are costly and have affected production. Mango growers also faced challenges in the use of WHO Class I and II toxic sprays that required expert handling for health reasons

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

(Mele, Nguyen & Huis, 2010). Unstructured mango markets without organized co-operatives predisposed mangoes to the very low prices of Kshs1.70 per piece of mango (Muthini, 2015). Inefficiencies in mango production are exacerbated by the lack of adoption of good project management practices, detailed in participatory project monitoring and evaluation measures, which keep project performance on track.

Theoretical Framework

Basically, a theoretical framework is an organized structure consisting of research concepts, which supports the theory toward understanding the trajectory of the problem statement in an empirical study. A theory merely explains the ontological phenomenon studied by identifying the main theoretical ideas and the epistemological concepts that accompany it, by describing the interrelations between the concepts studied (Torraco, 2004). Essentially, concepts or elements are common to most methodologies in theoretical building processes, which presupposes independent and dependent variables (Torraco, 2004). Moreover, a well-built theory gives clarity to a complex ontological phenomenon studied in regards to how things or objects are in the real world (Dubin, 1976). In addition, theory underpins an understanding of fundamental theoretical ideas and their interrelationships with what is being studied (Dubin, 1976).

Project management theory was adopted because it supported and reinforced M&E in projects by monitoring other key components of the project management lifecycle phases (Warburton & Cioffi, 2014). The study also used other supporting theories, the citizen participation ladder theory, which is democratic and technocratic in nature in the redistribution of power to the '*powerful'* and '*powerless',* through community-based planning processes (Arnstein, 1969), stakeholder theory (Freeman, 1984), and theory of constraint (Goldratt, 1990). These theories have been used because they are participatory and involve bringing together various stakeholders to participate in monitoring and evaluation activities to monitor and control project deviations.

Conceptual Framework

The theoretical framework is basically positioned in word narration and anchored around the theory of the study, while the conceptual framework is represented schematically to show the two variables of the study. The theoretical framework is usually organized in terms of the conceptual framework indicating the independent study variable pointing to a dependent variable (Chinn & Kramer, 1999). Stakeholder theory, ladder theory, constraint theory, and project management theory are complementary. They all addressed the needs of different stakeholders to participate in mango

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

projects, which were undertaken through the threefold constraint of cost, scope, and time. The conceptual framework emphasizes the interplay between independent and dependent variables:

Independent Variable **Dependent Variable**

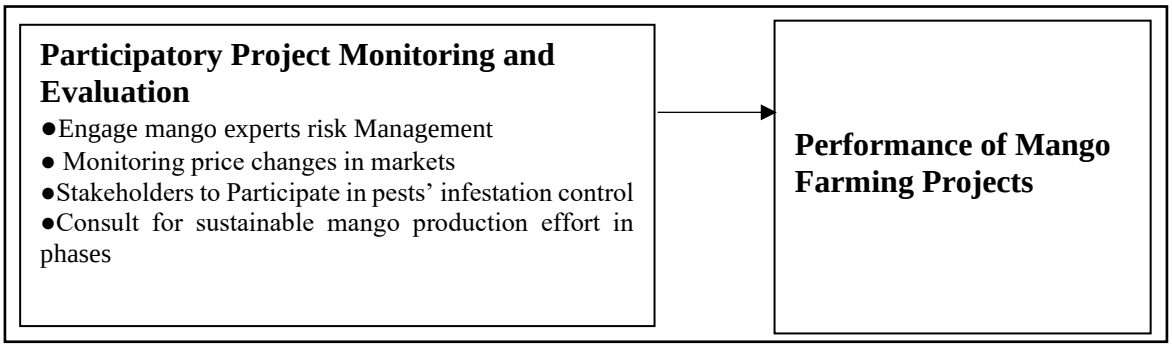


Figure 1. Conceptual framework for participatory project monitoring and evaluation of mango farming projects in Makueni County, Kenya

3. Research Methodology

Research Paradigm and Research Design

A paradigm is a worldview that guides and directs a researcher to a specific path to undertake empirical research (Kuhn, 1962). This study relied on a pragmatic research paradigm since it ensures a mixed method approach as it involves the use of quantitative and qualitative data in data collection and analysis. The value of a research paradigm in this study was to support philosophical hypotheses that inform research underpinnings and actions grounded in theory (Gakuu, Kidombo & Keiyoro, 2018). Descriptive research design and correlational research design were used in this study as a guide for the use of descriptive and inferential statistics in data collection and analysis.

Study Population, Sample Size, and Sampling Technique

The study involved a population of 12,622 mango farmers, of which 375 respondents were selected using the Krejcie and Morgan (1970) table formula. A total of 369 questionnaires was returned and analysed. A multi-stage sampling technique was employed to collect data from respondents.

Validity, Reliability, and Piloting

The questionnaires were validated using a pilot study in which qualitative data were analysed using content analysis and quantitative data were analysed using Cronbach Alpha, as reported (Cronbach, 1951). The Cronbach alpha value for participatory project monitoring and evaluation was 0.778, which was above the recommended minimum threshold of 0.7 for an empirical study.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Data Analysis

The data were analysed using a statistical software package for the Social Sciences (SPSS) version 25 to obtain the results. The null hypothesis was tested and the statistical significance of the relation interpretations was based on the Fisher F test (Fisher, 1935) and the Gosset t-test values. Descriptive and Pearson product moment correlation was used as a tool for analysing quantitative data, while qualitative data was analysed using content analysis.

4. Results and Discussion

Participatory Project Monitoring and Evaluation and Performance of Mango Farming Projects

The result shows how participatory monitoring and evaluation influenced the performance of mango ranching projects in Makueni County, Kenya. Descriptive and inferential statistics were utilized. Twelve (12) Likert scale items were presented to the respondents and requested to indicate their level of agreement with the given statement on a scale of **1 to 5** with **SD**= strongly disagree, **D**= disagree, **N**= neutral, **A**= agree, and **SA**= strongly agrees. The findings are presented in Table 1.

Table 1. Descriptive Analysis of Participatory project monitoring and evaluation and performance

No.	Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	SD
15a	Monitoring and evaluation, risk management control, is undertaken in pre-harvest and post-harvest phases	20 (5.4)	26 (7.0)	86 (23.3)	109 (29.5)	128 (34.7)	3.8	3.46
15b	Infestations of mango pests and diseases are attended to when noticed in mango production	40 (10.8)	58 (15.7)	18 (4.9)	142 (38.5)	111 (30.1)	3.6	3.35
15c	Farmers do not engage experts in the prevention of mango diseases and pests	30 (8.1)	30 (8.1)	12 (3.3)	120 (32.5)	177 (45.0)	4.1	3.72
15d	Mango farming trainings are not usually availed to mango farmers for good management practices	30 (8.1)	21 (5.5)	99 (26.8)	107 (29)	112 (30.4)	3.9	3.58
15e	Mango farmers consult widely in running of their mango farms to increase production	159 (43.1)	102 (27.6)	64 (17.3)	20 (5.4)	24 (6.6)	2.05	2.82
15f	Mango farmers are not capable of controlling mango pests and diseases by themselves	100 (27.1)	92 (24.9)	86 (23.3)	30 (8.1)	31 (8.3)	2.2	2.97
15g	Mango farmers are involved in agricultural extension services to acquire more knowledge	56 (15.2)	88 (23.8)	96 (26.0)	79 (21.4)	50 (13.6)	2.9	315

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

15h	Mango farmers do not have good mango storage facilities to prevent post-harvest losses	24 (6.5)	50 (13.6)	14 (3.8)	122 (33.1)	159 (43.1)	3.9	2.98
15i	High production of mango is experienced in mango farming projects	59 (16.0)	68 (18.4)	185 (50.1)	20 (5.4)	37 (10.0)	2.8	2.24
15j	The challenges of mango markets, prices and consumption are not monitored and evaluated	117 (31.7)	116 (31.4)	85 (23.1)	25 (6.8)	26 (6.9)	2.3	2.63
15k	Pre-harvest and Post-harvest waste and spoilage is monitored and evaluated for increased output	25 (6.8)	50 (13.6)	68 (18.4)	104 (28.2)	122 (33.1)	3.7	1.43
15l	Monitoring and evaluation experts are not consulted to look at the quality success of mangoes meeting local and international market standards	120 (32.5)	104 (28.2)	62 (16.8)	40 (10.8)	43 (11.7)	2.4	1.47
	Composite mean and standard deviation						3.13	2.81

n=369
Composite mean =3.13
Composite standard deviation=2.81
Cronbach's Alpha (a) Reliability coefficient =0.778

Table 1 shows, overall, the composite mean (M) of 3.13 for participatory project monitoring and evaluation and the standard deviation of 2.81. This implied that respondents were more neutral on the twelve points. The Cronbach alpha (a) reliability coefficient was 0.778. Hence, this indicated that the items had a strong internal consistency.

The objective of item 15a was to establish an opinion on the statement that monitoring and evaluation, risk management control, are undertaken before and after harvest. Results show that a majority (45%) of respondents strongly agreed. This item averaged 4.1 and SD 3.72, indicating that they were in agreement with the statement. The mean was more than composite mean, which implies that monitoring and evaluation, risk management, and control influenced the performance of mango projects. Key informants indicated that monitoring and evaluating the project during the pre- and post-harvest phases were important to project stakeholders to achieve the desired impact. One interviewee stated that:

> *"To improve the performance of mango projects, progress needs to be monitored in order to monitor and evaluate gaps so that mango projects remain on track between the pre-harvest and post-harvest stages".*

The findings are consistent with those of Kyalo, Mulwa and Nyonje (2015) who reported that monitoring and evaluation was a deliberate process

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

involving a systematic effort to collect and analyse information. In this case, the pre- and post-harvest phases required M&E to control discrepancies, promote efficiency and effectiveness in the use of resources to improve performance. An empirical study of SME projects revealed that most of the failures were due to the lack of participation of end-users in the application of the Monitoring and Evaluation Unit (EMU) guidelines (Ihesiene, 2014). Ibid, Internal and environmental factors were cited as the main contributors to market and strategic failures, in addition to lack of access to the use of past project failure experiences (Ihesiene, 2014).

The purpose of item 15b was to establish respondents' views on the claim that outbreaks of mango pests and diseases were treated when observed in mango production. The findings revealed that the majority (38.5%) of respondents agreed. The point had a mean of 3.9 and SD of 3.4 indicating agreement. The mean was above the composite mean, meaning that infestations of mango pests and diseases had an influence on the performance of mango projects. Key informants indicated that pests and diseases were not treated on a timely basis, thereby reducing production. Similarly, one respondent stated that:

> *"Monitoring and evaluation are very important in managing and controlling widespread pests and diseases in mango production, infesting mango foliage, buds and tree trunks, leading to a reduction of mango production".*

This is in agreement with Muhammad, Iqbal, Saeed, Javed and Khalid (2013), who argued that M&E is an important tool for tracking mango diseases and pest control through good management practices. The M&E Units (MUEs) guidelines aim to audit project failures, including failures in communication, leadership, and governance (Ihesiene, 2014). The majority of failures were due to a lack of project resources and a lack of awareness of early warning signs by project stakeholders that were not considered (Ihesiene, 2014).

Item 15c established opinion of the respondents on the statement that farmers did not engage experts in the prevention of mango diseases and pests. Results indicated that the majority (45%) of the respondents strongly agreed. The item had a mean of 4.1 and SD of 3.72 indicating that they agreed with the statement. This mean was more than the composite mean implying that engagement experts in the prevention of mango diseases and pests had an influence on the performance of mango projects. These results were supported by interview results where one farmer said:

> *"Engaging experts in preventing mango diseases and pests is usually very costly and therefore most farmers do not engage them in mango farming."*

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

The results were consistent with Muhammad, Iqbal, Saeed, Javed and Khalid (2013) on mango production as it was established that M&E was vital in managing pests and diseases, as they infested mango foliage, buds and tree trunk, thereby reducing the output of mangoes. Item 15d sought to establish opinion on the statement that mango farming trainings were not usually availed to mango farmers for good management practices. The results indicated that the majority (30.4%) strongly agreed. The item had mean of 3.9 and SD of 3.6 indicating they agreed with the statement. The mean was more than the composite mean implying that mango farming trainings had an influence on the performance of mango projects.

Item 15e sought to establish the opinion of respondents on the statement that mango farmers consulted widely in the running of their mango farms to increase production. The results indicated that the majority (43.1%) strongly disagreed with the statement. The item had a mean of 2.05 and SD of 2.82 indicating they disagreed. The mean was less than the composite mean implying the item had no influence on performance. Item 15f had sought to establish opinion on the statement that mango farmers were not capable of controlling mango pests and diseases by themselves. Results indicated that 27.1% of the respondents strongly disagreed with the statement. The item had mean of 2.2 and SD of 2.9 indicating they disagreed with the statement. The mean was less than the composite mean implying M&E risk management control had no influence on the performance of mango. Item 15g had sought to establish the opinion of the respondents on the statement that mango farmers are involved in agricultural extension services to acquire more knowledge. The results indicated that 23.8% of the respondents were neutral about it. The item had a mean of 2.3 and SD of 3.2 indicating that the respondents were neutral about the statement. The mean was slightly more than the composite mean implying the item had an influence on the performance of mango projects. These results were supported by the interview results where one mango farmer said,

> "*Mango farmers' participation in agricultural extension services, capacity mentorship and management training can increase mango production. It is also important to understand mango importers in order to try to meet prescribed mango quality thresholds and standards from the needs of global community"*

Item 15h had sought to establish the opinion of the respondents on the statement that mango farmers did not have good mango storage facilities to prevent post-harvest losses. The results indicated that the majority (43.1%) strongly agreed. The item had mean of 3.9 and SD of 2.9 indicating they agreed with the statement. This mean was more than the composite mean

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

implying that mango storage facilities had an influence on the performance of mango projects.

Item 15i sought to establish the opinion of the statement that high production of mango is experienced in mango farming projects. The majority (50.1%) of the respondents were neutral about it. The item had a mean of 2.8 and SD of 2.24 indicating them to be neutral. This mean was more than the composite mean implying that the item had an influence on mango projects. Item 15j sought to establish the opinion on the statement that the challenges of mango markets, prices, and consumption were not monitored and evaluated. The results indicated that the majority (31.7%) of the respondents strongly disagreed. The item had mean of 2.3 and SD of 2.63 indicating they disagreed with the statement. The mean was less than the composite mean implying that the item did not have influence on mango projects. The results are in line with the results of interview schedule where one farmer said,

> *"We as mango farmers undergo a lot of challenges which include; pests and diseases, mango markets and price fluctuations, however, no one seems to care about monitoring and evaluating these challenges so as to assist the farmers."*

Similar views were agreed upon by Kyalo, Mulwa and Nyonje (2015) on the importance of M&E in development projects, where they established that Project M&E was important in development projects as it made various project stakeholders know their challenges and whether their projects met the set goals and objectives to realize the desired effect. Item 15k sought to establish the opinion of respondents on the statement that pre-harvest and post-harvest waste and spoilage was monitored and evaluated for increased output. The majority (33.1%) of the respondents strongly agreed with the statement. The item had mean of 3.7 and standard deviation (SD) of 1.43 indicating they were neutral about it. The mean was more than the composite mean implying that pre-harvest and post-harvest waste and spoilage had an influence on the performance of mango projects.

Item 15l had sought to establish the opinion of the respondents on the statement that monitoring and evaluation experts are not consulted to look at the quality success of mangoes meeting local and international market standards. The results indicated that a majority (32.5%) strongly disagreed with the statement. The item had a mean of 2.4 and standard deviation (SD) of 1.47 indicating respondents disagreed with the statement. The mean was less than the composite mean implying that M&E experts had no influence on the performance of mango projects.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Correlation Analysis and Linear Regression Model for the Objective

This study used descriptive and inferential statistics in analysing data using correlation analysis on the relationship between the two variables analysed to describe, generalize, and infer the results into the entire student population. The hypothesis and the model of this research are described below:

Hypothesis Testing

$H0_1$: There is no significant relationship between participatory project monitoring and evaluation and performance of mango farming projects in Makueni County, Kenya.

$H1_1$: There is a significant relationship between participatory project monitoring and evaluation and performance of mango farming projects in Makueni County, Kenya.

The hypothesis is stated in the null as advanced by Fisher (1935).

Relationship between Participatory Project Monitoring and Evaluation and Performance of Mango Farming Projects

The Pearson's moment correlation technique was used to determine the relationship between Participatory Project Monitoring and Evaluation and Performance of Mango Farming Projects. The results were presented in Table 2:

Table 2. Correlation between Participatory Monitoring and Evaluation and Mango Performance

		Participatory Project Monitoring and Evaluation	Performance of Mango Farming Projects
Participatory Project Monitoring and Evaluation	Pearson Correlation	1	.722(**)
	Sig. (2-tailed)		.000
	N	369	369
Performance of Mango Farming Projects	Pearson Correlation	.722(**)	1
	Sig. (2-tailed)	.000	
	N	369	369

** Correlation is significant at the 0.01 level (2-tailed)

Results in the Table 2 shows that there is a significant positive relationship between participatory project Monitoring and Evaluation and performance of mango farming projects (r= 0.722, p= 0.000). This infers a very strong association between participatory project Monitoring and Evaluation and performance of mango farming projects. Based on the findings, hypothesis H_{04}, which stated that there was no significant relationship between participatory project monitoring and evaluation and performance of mango farming projects in Makueni County, were therefore

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

rejected. It was therefore concluded that there was a significant relationship between participatory project Monitoring and Evaluation and performance of mango farming projects in Makueni County. Performance of Mango being the dependent variable is the function of ***f*** (participatory project monitoring and evaluation variable), and hence the simple regression model:

The Regression Model

$Y = f(X_1, X_2, X_3, X_4, \varepsilon)$,

$Y = \alpha + \beta_0 X_1 + \beta_1 X_2 + \beta_2 X_3 + \beta_3 X_4 + \varepsilon$,

$Y = \alpha + \beta_0 X_4 + \varepsilon$.

Model 4: $Y = f(X_4, \varepsilon)$.

Table 3. Simple Linear Regression Results for the Association between Participatory Project Monitoring and Evaluation and Performance of Mango Farming Projects

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.0879(a)	.0773	.0754	.457

ANOVA (b)

Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	25.571	2	8.524	4.756	.000(a)
	Residual	7.529	367	.209		
	Total	33.100	369			

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	0.030	.356		.083	.000
	Monitoring and Evaluation (X_4)	0.394	.174	.546	2.269	.000

a. Dependent Variable: Performance of mango farming projects

b. Predictor Variable: Participatory Project Monitoring and Evaluation

The results from Table 3 shows that DF (2,367) F=4.756, t=2.269, level of significance

P=0.000<0.05, r=0.0879 and R square= 0.0773. The results signified that 5% level significance and 95% level of significance of the test was statistically significant and, therefore, the null hypothesis was rejected.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Results in the table show that the adjusted R squared is .0754 which inferred that 7.54% of the variations in performance of mango farming projects were influenced by Participatory Project Monitoring and Evaluation, while the other variables were determined by other factors outside this model. Again, ANOVA results indicated that the model was statistically significant, F (2,367) =4.756. The linear regression model is;

$$Y= 3.03 + 0. 394X_4$$

The beta value of 0.394 inferred that one unit increase in participatory project Monitoring and Evaluation increased performance of mango by 0.394 and vice versa. The study confirmed that the participatory project Monitoring and Evaluation had a significant influence on performance of mango farming projects.

Conclusion

The empirical study findings presented impeccable evidence that participatory project monitoring and evaluation checks and controls performance deviations. Participatory project Monitoring and Evaluation influence the overall performance of mango farming projects in different situations and setups by taking corrective measures and controls to increase production. Improved performance of mango project involves tracking the progress to monitor and evaluate deviations of project creep, so that the mango projects remain on course from pre-harvest to post-harvest stages. Project monitoring and evaluation in mango production is very important in managing and controlling pests and diseases, which are prevalent in infesting mango foliage, buds and tree trunks, leading to reduced mango production. The study found out that quality and quantity can only be improved during preharvest phase, and not along the postharvest phase when damage has already occurred in the preharvest phase.

Recommendation

Monitoring and evaluation are urgently needed in mango projects to improve performance in order to improve rural economies. A robust project monitoring and evaluation policy should be crafted to drive upward mobility change in enhancing mango performance. This study, therefore, recommends that mango farmers should invest more in monitoring and evaluation so as to avoid mango losses associated with pre-harvest and post-harvest problems, which are not detectable early at the onset.

References:

1. Akroyd, D. (1999). Logical framework approach to project planning, socioeconomic analysis and to monitoring and evaluation services: a

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

smallholder rice project, Impact Assessment and Project Appraisal, 17:1, 54-66, DOI: 10.3152/147154699781768007.

2. Arnstein, S.R. (1969). A Ladder of Citizen Participation in Sherry R. "A Ladder of Citizen Participation," *Journal of the American Institute of Planners (JAIP),* Vol. 35, No. 4, July 1969, pp. 216-22.
3. Antwi, M.A. & Oladele, O.I. (2013). Determinants of Performance of Land Redistribution for Agricultural Development (LRAD) Projects in the Ngaka Modiri Molema District, South Africa, Journal of Human Ecology, 42:2, 155-162, DOI: 10.1080/09709274.2013.11906589.
4. Baita, H.U., Manga, A.A., & Mustapha, Y. (2010). Evaluation of Different Morphotypes of Mango (Mangifera Indica L.) For Use as Rootstock in Seedlings Production. Bayero Journal of Pure and Applied Sciences, 3(1): 79–82, Bajopas Volume 3 Number 1 June 2010.
5. Bonan, J., Pareglio, S., & Rotondi, V. (2015). The Role Of Impact Evaluation Of Agricultural Development Projects Author (S):, Source: Rivista Internazionale di Scienze Sociali, Anno 123, No. 4 (Ottobre-Dicembre 2015), pp. 369-380 Published by: Vita e Pensiero – Pubblicazioni dell'Università Cattolica del Sacro Cuore Stable URL: https://www.jstor.org/stable/26151496.
6. Brecht, J.K., Mitcham, E., Sargent, S. & Kader, A. (2009). Monitoring and Evaluation of the Mango Supply Chain to Improve Mango Quality: a publication of the American Society for Horticultural Science, July 2009.
7. Chinn & Kramer (1999). Theoretical Framework vs. Conceptual Framework, StudyMode.com, http://www.studymode.com/essays/Theoritical-Framework-Vs-Conceptual-Framework-825118.html.
8. Crawford, P. & Bryce, P. (2003). Project monitoring and evaluation: a method for enhancing the efficiency and effectiveness of the aid project implementation Institute for Sustainable Futures, Received 22 May 2001; received in revised form 12 October 2001; accepted 4 October 2002. International Journal of Project Management 21 (2003) 363–373.
9. Dubin Simon (1976). https://books. Google.co.ke/books? Id=JUKTMx8ZeKsC&pg=PA9&dq =meaning+of+theoretical+and+conceptual+framework+by+Dublin+in+1976&source.
10. FAO (2017). Increasing the Yield of Mango with Selective Harvest, Food and Agriculture of the United Nations, http://www.fao.org/3/CA2574EN/ca2574en.pdf.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

11. Farmbizafrica (2018). Mango juice factory to benefit 12,000 Makueni mango farmers. http://farmbizafrica.com/markets/2010-mango-juice-factory-to-benefit-12-000-makueni-farmers.
12. Freshplaza (2019). Kenya: Enhance value addition mango farming. https://www.freshplaza.com/article/9066388/kenya-enhance-value-addition-mango-farming/
13. Freeman, R.E. (1984). Strategic Management: A Stakeholder Approach. Pitman, Boston. http://www.scirp.org/vtj3fa45qm1ean45vvffcz55)/reference/ReferencesPapers.aspx?ReferenceID=1209107
14. Fisher, R.A. (1935). The design of experiments. Oliver & Boyd, London, UK. https://psycnet.apa.org/record/1939-04964-000.
15. Gakuu, C.M., Kidombo, H.J., & Keiyoro, P.N. (2018). Fundamentals Research Methods: Concepts, Practice and Applications.
16. Goldratt, E.M. (1990). What is this Thing Called Theory of Constraints (1990) ISBN 0-88427-166-8.
17. Golini, R., Corti, B., & Landoni, P. (2017). More efficient project execution and evaluation with logical framework and project cycle management: evidence from international development projects, Impact Assessment and Project Appraisal, 35:2, 128-138, DOI: 10.1080/14615517.2016.1239495.
18. Grieshbach, J. (2011). Mango growing in Kenya. ISRAF, Nairobi, Kenya.
19. Hughes, F.M.R., Adams, W.M., Butchart, S.H.M., Field, R.H., Kelvin, S.H., & Warrington, S. (2016). The challenges of integrating biodiversity and ecosystem services Monitoring and Evaluation at a landscape-scale wetland restoration project in the UK, Source: Ecology and Society, Vol. 21, No. 3 (Sep 2016) Published by: Resilience Alliance Inc. Stable URL: https://www.jstor.org/stable/26269982.
20. Ihesiene, U.C. (2014). A Survey-Based Study of Project Management Problems in Small and Medium Scale Enterprises (SMEs) in Nigeria. European Scientific Journal, ESJ, 10(25). https://doi.org/10.19044/esj.2014.v10n25p%p.
21. Jisheng, Y. (2013). "Tombstone: The Great Chinese Famine, 1958–1962". Book Review. New York Times. Dec, 2012. 3 March 2013. https://www.nytimes.com/2012/12/09/books/review/tombstone-the-great-chinese-famine-1958-1962-by-yang-jisheng.html.
22. Kevin, Z.C., Claire, H., & Fan, S., (2014). "Steadying the ladder: China's agricultural and rural development engagement in Africa", China Agricultural Economic Review, Vol. 6 Issue: 1, pp.2-20, https://doi.org/10.1108/CAER-04-2013-0055.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

23. KNBS (2019). https://knoema.com/atlas/sources/KNBS.
24. Krejcie, R.V. & Morgan, D.W. (1970). Determining Sample Size for Research Activities, Educational and Psychological Measurement, 30, 607-610, https://doi.org/10.1177/001316447003000308.
25. Kuhn, T.S. (1962). The structure of scientific revolutions. Chicago Uni. Chicago Press.
26. Kyalo, D.N., Mulwa, A.S. & Nyonje, R.O. (2015). Monitoring and Evaluation of Projects and Programmes: A Hand Book for Students and Practitioners. Nairobi: Aura Books-ISBN 9966- 035-13-4; 2nd Ed. 2015.
27. Lauricella, M., Emanuele, S., Calvaruso, G., Giuliano, M., & D'Anneo, A. (2017). Multifaceted Health Benefits of Mangifera indica L. (Mango): The Inestimable Value of Orchards Recently Planted in Sicilian Rural Areas, Nutrients. 2017 May; 9(5): 525. Published online 2017 May 20. Doi: 10.3390/nu9050525, PMCID: PMC5452255.
28. Lorenzo-Santiago, M.A., Juárez-López, A.L., Rosas-Acevedo, J.L., Rendón-Villalobos, J.R., Toribio-Jiménez, J. & García-Hernández, E. (2018). Management and Final Disposal of Mango Waste in the State of Guerrero, Mexico: A Brief Review Journal of Agricultural Science; Vol. 10, No. 12; 2018 ISSN 1916-9752 E-ISSN 1916-9760, Published by Canadian Centre of Science and Education.
29. Maddaloni, D.F. & Davis, K. (2017). Project manager's perception of the local communities' stakeholder in megaprojects: an empirical investigation in the UK. International Journal of Project Management, ISSN (print) 0263-7863 (Epub Ahead of Print).
30. Malley, Z.J., Hart, A., Buck, L., Mwambene, P.L., Katambara, Z., Mng'ong'o, M., & Chambi, C. (2017). Integrated agricultural landscape management: Case study of inclusive innovation processes, monitoring and evaluation in the Mbeya Region, Tanzania, Outlook on Agriculture 2017, SAGE: Vol. 46(2) 146–153 ª The Author(s) 2017 Reprints and permission: sagepub.co.uk/journalsPermissions.nav DOI: 10.1177/0030727017709393 journals.sagepub.com/home/oag.
31. Mele, P.V., Nguyen, T.T.C. & Huis, A.V. (2001). Farmers' knowledge, perceptions and practices in mango pest management in the Mekong Delta, Vietnam, International Journal of Pest Management, 47:1, 7-16, DOI: 10.1080/09670870150215559, 2001, 47(1) 7± 16, ISSN0967-0874print/ISSN1366-5863online.
32. Muhammad, W., Iqbal, N., Saeed, S., Javed, M. & Khalid, K.M. (2013). Monitoring and Varietal Preference of Mango Midge, Procontarinia mangicola (Diptera: Cecidomyiidae), Pakistan J. Zool., vol. 45(5), pp. 1273-1278, 2013.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

33. Muthini, D.W. (2015). Thesis by Davis Nguthi Muthini on Assessment of Mango Farmers' Choice of Marketing Channels in Makueni, Kenya. Department of Agricultural Economics, University of Nairobi, Kenya.
34. Murei, L. C., Kidombo, H., & Gakuu, C. (2018). Influence Of Monitoring and Evaluation Human Resources Capacity on Performance of Horticulture Projects In Nakuru County, Kenya. IJRDO-Journal of Social Science and Humanities Research ISSN: 2456-2971.
35. Nankinga, C.M., Isabirye, B.E., Muyinza, H., Rwomushana, I., Stevenson, P.C., Mayamba, A., Aool, W. & Akol, A.M. (2014). Fruit fly infestation in mango: A threat to the Horticultural sector in Uganda. National Agricultural Research Organization, Uganda Journal of Agricultural Sciences, 2014, 15 (1): 1-14 ISSN 1026-0919.
36. PMI's PMBOK (1996). Project Management Institute's, Project Management Book of Knowledge.
37. Purushottam, B. (2015). Challenges facing mango cultivators of India and the feasible solutions. International Journal of Management and Development Studies 4(3): 250-255 (2015)
ISSN (Online): 2320-0685. ISSN (Print): 2321-1423.
38. Shava, E. & Thakhathi, D.R. (2016). Elvin Shava & Dovhani Reckson Thakhathi (2016) Challenges in the Implementation of Community Development Projects in the Eastern Cape Province, South Africa, Journal of Human Ecology, 56:3, 363-373, DOI: 10.1080/09709274.2016.11907073 To link to this article: https://doi.org/10.1080/09709274.2016.11907073.
39. Siddique, K., Ahad, M.Z., & Din, W.U. (2019). Management and Evaluation of Communication and Coordination Practices among Multi Stakeholders in Complex Engineering Projects in Pakistan. European Scientific Journal, ESJ, 15(3), 354. https://doi.org/10.19044/esj.2019.v15n3p354.
40. Simiyu, N.R., Ngugi, L., & Minja, D. (2018). The Influence of Project Planning and Implementation on the Performance of Agricultural Projects by Community Based Organizations in Bungoma County, Kenya. European Journal of Business and Management; ISSN (Paper) 2222-1905 ISSN (Online) 2222-2839, Vol 10, No 28 (2018), Simiyu https://iiste.org/Journals/index.php/EJBM/article/view/44532.
41. Tahir, M. & Naeem, H. (2017). The Impact of Switch Leadership on Project Success: Empirical Evidence from UAE. European Scientific Journal, ESJ, 13(22), 241.
https://doi.org/10.19044/esj.2017.v13n22p241.
42. Torraco, R.J. (2004). Theory-Building Research Methods, Torraco R. J.,

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

https://books.google.co.ke/books?hl=en&lr=&id=AyMZt9AodEEC&oi=fnd&pg=PA351&dq=Torraco+R.+J.+ (2004), +Theory- Building+ Research +Methods. & OT.

43. Usman, M., Soomro, T. R., & Brohi, M. N. (2014). EMBEDDING PROJECT MANAGEMENT INTO XP, SCRUM AND RUP. European Scientific Journal, ESJ, 10(15). https://doi.org/10.19044/esj.2014.v10n15p%p.
44. Verschoor, A.J., Rooyen, J.V., & D'Haese, L. (2005). New agricultural development criteria: a proposal for project design and implementation, Development Southern Africa, 22:4, 501-514, DOI: 10.1080/03768350500322677.
45. Warburton, R.D.H. & Cioffi, D.F. (2014). Project management theory: deriving a project's cost and schedule for its network structure, Project Management Institute Research and Education Conference, PA: Project Management Institute. https://www.pmi.org/learning/library/updating-project-management-theory-1917.

ESJ Social Sciences

Banks and FinTech Relationship in a Digital Transformation Context

Tayazime Jihane, PhD Student
Laboratoire de Recherche en Sciences de Gestion des Organisations
ENCG Kenitra, Morocco
Moutahaddib Aziz, PhD
Professor at ENCG Kenitra, Morocco
Laboratoire de Recherche en Sciences de Gestion des Organisations

Doi:10.19044/esj.2022.v18n12p106

Submitted: 09 November 2021
Accepted: 06 April 2022
Published: 30 April 2022

Copyright 2022 Author(s)
Under Creative Commons BY-NC-ND
4.0 OPEN ACCESS

Cite As:
Jihane T. & Aziz M. (2022). *Banks and FinTech Relationship in a Digital Transformation Context.* European Scientific Journal, ESJ, 18 (12), 106.
https://doi.org/10.19044/esj.2022.v18n12p106

Abstract

The main function of digitalization is to make relationships more flexible and less framing, while allowing simpler and faster communication and more important data exchange. The digitalization of the banking sector is reforming it in its most profound axes. Its functioning, its organization, its interactions, its products, all have been modified, including back-office functions. The digital infrastructure has accelerated the emergence of new technologies: social media, cloud computing, analytics and big data, wearable devices, etc. This new technological wave has led to the emergence of new entrants in the financial sector. Financial technology, also known as FinTech, is an industry composed of diversified firms that combine financial services with innovation technologies offered to financial service providers (Moro-Visconti, R. et al, 2020). Banks will have to engage in further cost-cutting since they remain shockingly costly, which partly explains the market penetration by FinTechs (Philippon, 2016). They offer unbundled low-cost services which makes them very competitive with banks. Therefore, the relationship between the two may be quite competitive because of the similar operations. In this article we will be discussing the nature of banks and FinTechs' relationship, starting with a literature review and then a survey

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

discussing these two financial structures.

Keywords: Digital transformation, Bank, FinTech, Technology, Services

1. Introduction

The turmoil in the banking industry is accelerating, leading to radical reforms in certain areas of activity. For banks, digitalization should implement multi-channel mobility, integrate big data technology, and innovate service supply. Banks also need to train current employees and recruit qualified talents who are capable of contributing to the building of tomorrow's banks. (Ryma Derridj, Lila Amiar, 2020). For Negroponte (2015), digitalization refers to the act of transforming physical processes, content and objects into their primarily or entirely digital nature, in order to cut costs generated by storage, duplication and transmission; in addition to an enhanced ability to search, analyze, correct, and improve content.

Banks remain uniquely and systemically important to the economy because of their highly regulated nature. Customers identify banks with their primary financial needs (McKinsey & Company, 2018) which makes them very hardly disposable or replaceable.

As far as banks are concerned, they are severely affected by changes that affect their environment, namely the emergence of fintech and changing customer demands and way of thinking (Fox & Greenspan, 2019). Maintaining competitiveness in the future will largely depend on the bank's decision today. The events of the past few years have shown that they may have to pay for poor strategic decisions (Omarini, 2015).

The relationship between banks and financial technology may be quite competitive because of the common operating foundation. As fintech companies deploy multiple financial services, which are pre-existing services for banks with technological advantages and reduced costs, most banks have noticed the urgency of investing in digital transformation. Today, almost all banks provide remote banking services, including Internet solution banking and mobile banking solutions (Khanchel H., 2019). Going forward, it’s uncertain how fintech as the mainstream technology for the financial services industry will evolve. Economists have been trying to predict what would happen to fintech when the next recession comes (Allen, F. & al.; 2020).

The main goal of this article is to determine whether or not FinTechs are a threat to the banking institutions. We will start by a literature review surrounding FinTechs and the digitalization of banks, then we will discuss a survey answered by experts aiming to understand if FinTechs are mandatory or not for the digital transformation of banks.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

2. Literature review

2.1. Theoretical background

2.1.1. Digital transformation

The main function of digitalization is to make relationships more flexible and less framing, while allowing simpler and faster communication and more important data exchange. In fact, in the sense of gaining greater market share and opportunities for innovation, digitalization has made a significant contribution to new perspectives (Derridj R. & Amiar L., 2020). "An important part of successful digitalization is to use information technologies for turning services to be modularly and inherently easy to adapt" (Tatiana Genzorova et al., 2019).

Moreover, Yoo (2009) say that digitizing (or digitally infusing) objects gives them new properties—programmability, addressability, communicability, memorability, sensibility, traceability, and associability—which together make digital products (such as digital processes) highly malleable and open up new areas of potential functions. It is an organization's progression from outdated methods to novel behaviors of working and thinking by using digital, social, mobile, and new technologies (Terrar, D., 2015). It is driven by the improvements in technology, the entrance of new business models, and modifications in customers' exigences (Valdez-de-Leon, O., 2016).

"Digitalization" should be distinguished from "digitization"; the former rather tackles the impact of digital technologies on the organization, while the latter denotes the swing from traditional solutions to digital (Hensmans M., 2020).

Investing in technology implicates risks by requiring knowledge of the link between technology, organizational culture, and institutional changes within certain boundaries of the monitoring framework. Consequently, digital transformation is unpredictable by being disruptive and highly transformative and carrying an impact on the organization's global results. It is expected that the effect of digitization on organization design will continue its acceleration, given the continuous development of technologies that are reaching more applications, domains, and locations. Thus, transformation in one part of an organization triggers a chain of transformations in the other parts and amplifies its effect (Kretschmer, T., & Khashabi, P.; 2020). Organizations are likely to get better at utilizing digital infrastructure over time (Cardona, M. et al.; 2013) since transforming one part of the organization affects the rest of it due to the fast adaptation.

2.1.2. Digitalization of banks

The digitalization that affects the banking sector is reforming it in its most profound axes. It has altered functions, interactions, organization and

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

services. The back-office is also evolving with digitalization, since administrative work which is mainly done manually and requires significant time to complete, is being simplified and majority cut down. “Filing and archiving of documents should soon be entirely dematerialized and automated.” (Ryma Derridj, Lila Amiar, 2020).

The main objective behind digitalizing banks is optimization of the customer experience via the Internet, the transformation of operational processes, the evolution of internal organizations and operating methods, and the development of its businesses (Béziade, Assayag, 2014).

The financial services sector has a reputation of being ingrained in their traditional ways thus resistant to change. Banking has historically been one of the business sectors most resistant and suspicious to disruption by technology (Fichman et al. 2014). As a result, today banks often show a lack of innovation either because of their stable market position or due to complex government regulations (Anagnostopoulos I., 2018). There are so many start-ups with material and immaterial resources ready to find alternatives to traditional banking.

As technology advances, customers are shifting from face-to-face transactions to digital transactions through digital banking services. Brick-and-mortar bank branches have traditionally been the primary point of contact for facilitating retail banking and customer transactions, but are starting to allow physical checks to be deposited through a mobile application on a smartphone, thus adapting to the new generations particularly vulnerable to new entrants. 84% of millennials confirmed they would consider subscribing to banking services from a big tech company. (KPMG, Banking of the future, 2017).

Liu et al. (2017) have shown that the use of the mobile channel increases customer demand for digital services and that the net benefit of the mobile services to the bank is $0.07 USD per month per (average) customer. Trust now plays an important moderating role in the transition from offline to online transactions (Balasubramanian et al., 2003).

According to Khanboubi & Boulmakoul (2019), digital transformation of banks should follow predisposed acts: digitalization of customer and business processes; redesign of the information system; simplification of internal operating modes; cultural transformation for a more liberated company; exploration of new business territories, notably through the deployment of Open Innovation approaches.

2.1.3. The Fintech revolution

The digital infrastructure has accelerated the emergence of new technologies—social media, cloud computing, analytics and big data, wearable devices, 3D printing, and intelligent autonomous systems, to name

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

some recent ones—that enable transformations in the way we live and work, how companies organize, as well as the structure of entire industries (Agarwal et al. 2010; Dhar and Sundararajan 2007; Lucas et al. 2013), which led to the fourth industrial revolution.

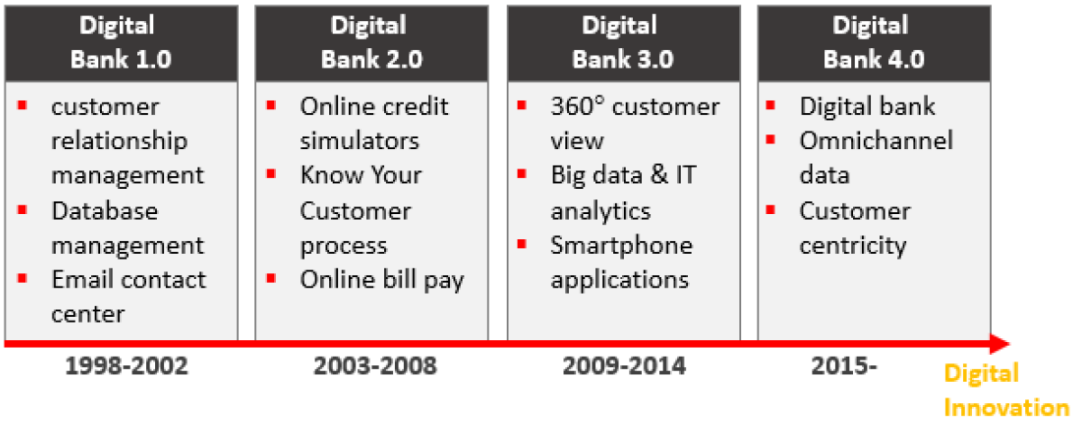


Figure 1. Transition of banks from 1.0 to 4.0
Source : Khanboubi F., Boulmakoul A.

The fourth industrial revolution has a potent outcome on national economic structures and business models. This makes fintech an intensely significant aspect of this insurgency because it also encourages a transformation of economic systems (Yong Jae S.; Yongrok C., 2019).

New entrants have disrupted the bank market by selling payments, in particular those targeting the emerging mobile payments market, personal lending, general insurance, and more recently financial advisory which have historically been regarded as a more complex service (Omarini A. 2017).

Financial technology is an industry composed of diversified firms that combine financial services with innovation technologies offered to financial service providers (Moro-Visconti, R. et al, 2020). FinTechs have the potential to separate essential banking activities: clearing and settling payments, performing maturity transformations, sharing risks, validating trust, and allocating capital (Moro-Visconti, 2020), hence impacting how consumers store, save, borrow, invest, move, pay, and protect money (Miklos Dietz et al.,2016).

Fintech platforms are currently less exposed to system-wide shocks compared to traditional banks since on aggregate and by scale they are more domestically driven in their operations (Anagnostopoulos, 2018). In addition to that advantage, Miklos Dietz et al (2016) believe that FinTechs are best positioned to have a huge impact on the financial market by adopting advantaged modes of customer acquisition, step-function reduction in service

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

cost, innovative uses of data, specified propositions for segments, leveraging existing infrastructure and managing risk and regulatory stakeholders.

2.2. Banks relationship with FinTechs

2.2.1. Disruption factors of the banking sector

FinTechs promise to disrupt and reshape the financial industry by cutting costs, improving the quality of financial services, and creating a more diverse and stabler financial land-scape. Their existence is driven by circular economy and sharing, as well as favorable regulation, and information technology (Moro-Visconti, 2020). FinTechs thus currently have a market penetration of approximately 0.2% from these two subsegments as measured by the potential market. The total market volume of FinTechs will increase to 60 billion EUR in 2020 and to as much as 101 billion EUR in 2025 (Dorfleitner et al.; 2017).

Banks will have to engage in further cost-cutting since they remain shockingly costly, which partly explains the market penetration by new entrants (Philippon, 2016). The new paradigm spearheaded by fintech start-ups calls for stripping banking operations into separate business segments and holistically specializing in at least one of such segments affords them recognition, higher consumer utility, and as a result, market share. Banks will have to respond to this margin compression since passivity on the side of banks could result in approximately as much as 20% of revenues being at risk by 2025 (McKinsey, 2015).

New technology and technologically advanced regulatory tools are now showing a shift towards alliance. Competition between banks and challengers has already given way to direct collaboration across the fintech ecosystem. Banks with open and flexible digital structure will be better positioned to capitalize on the advantages of these collaborations (Anagnostopoulos I., 2018).

Mărăcine et al. (2020) suggest that five main areas exist where FinTechs can provide improvements in business models for the banks: introducing specialized platforms, covering neglected customer segments, improving customer selection, reduction of the operating costs of the banks, and optimization of the business processes of the banks. As digital banking offerings have matured and cost pressures have increased, it has become inevitable to make changes to the operating models of banks. One of the outcomes was a full-fledged branchless digital bank (Hough et al.; 2018) or challenger bank. A challenger bank stands for a financial institution that can be presented in the plain form of an information–communication system (Schepinin, Bataev; 2019). The traditional institution has felt the disruption and is working towards changing its business model from product-centric to customer-centric (Lotriet, Dltshego; 2020).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

2.2.2. The emergence of Fintech and sustainable economic growth

According to Moore A. (2015), a disruptive innovation is really needed when what is rare and expensive becomes ubiquitous and cheap. Shin Y.J. and Choi Y. (2019) define FinTechs as platforms for the development of sustainable economic growth as well as a prompter of the fourth industrial revolution. Fintechs looking to enter financial services using new approaches and technologies, seek to build economic models similar to those of banks, often targeting a niche or particular product (McKinsey, 2018).

Absent any mitigating actions by banks, in five major retail-banking businesses, consumer finance, mortgages, lending to small and medium-size enterprises, retail payments, and wealth management—from 10 to 40 percent of bank revenues (depending on the business) could be at risk by 2025. Attackers are likely to force prices lower and cause margin compression (McKinsey, 2016).

Sadigov et al. (2020) have proved that FinTech development contributes to economic growth by increasing the GDP generated in the financial sector, and indirectly does so by increasing e-commerce turnover and real sector financing, particularly by creating more favorable lending conditions for small and medium-sized businesses.

FinTechs' business model is intangibly driven, combining e-finance, internet technologies, social networking, artificial intelligence, blockchains, and big data analytics. Moreover, their revenue model is much more scalable than that of a typical bank (Moro-Visconti; R. et al; 2020). The new business model results from five disruption factors: cloud that makes marginal cost of free computing; smartphones that make marginal the cost of a transaction; new web and social media players who make payless the addition of a shared resource in the collaborative economy; easy exploitation of data by algorithms more than human treatments that makes cost of dynamic decision-making very low; Internet of Things that does not require on-site maintenance.

The new fintech approaches are creating a new basis for harmonizing investments across business partners and competitors too; through the new availability of products and services that have a different operational basis, with diminished human involvement on the purely transactional aspects, supported by machine intelligence where that is appropriate (Melnick, E. et al.; 2000).

3. Empirical study

3.1. Research methodology

For this survey, a total of 58 professionals and experts selected upon their specialization in finance / management or digital transformation have responded from 3 different countries, Morocco, France and Spain. The majority of respondents are specialized in finance.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

The questionnaire is divided into two parts. The first part includes general questions about age range, country, knowledge of digitalized banking services, advantages and limits of digital transformation in banking. Second, a more in depth set of questions about FinTechs and their impact on the banking sector. The questions were multiple choice with the option of adding a personalized answer to encourage participation.

The data was collected using social networks (mainly LinkedIn), with targeted requests sent individually for more significant results and control of the sample. The choice of social media was imposed by the COVID-19 sanitary restrictions in Morocco.

The age ranges were chosen according to generations' noticeable difference in familiarity and acceptance of digital solutions. It was also important to ask for respondents' countries because of environmental variations (population's accessibility to the internet, economic environment, populations' age variations…).

3.2. Survey results

All 58 responses were valid and included in the following statistical analysis. We used IBM SPSS Statistics 25 for the descriptive statistics of this sample. The choice of methodology is due to a constraint of data availability, the number of respondents is low and therefore the sample is non representative. The size of the sample obtained does not allow the estimation of the econometric model with limited dependent variables, such as Logit or Probit, generally used for nominal variables modelization. Consequently, we used frenquency tables, histograms and cross tabulations generated by SPSS 25 in order to observe the dependence of one variable on another and analyze existing relationships between the obtained data. In order to create the histograms for a better vision on the variables' fluctuations, we had to code them.

We had 4 multiple choice questions. For a better analysis we considered each of those choices a variable. In total we retained 2 ordinal variables and 22 nominal variables. Frequencies and categories' percentages are presented in tables from 1 to 7.

The majority of respondents are aged between 25 and 40 but ranks very closely to the 18-24 category. It may be explained by the ability of using technology by younger generations. People aged more than 60 are absent in the sample. This may be due to a difference in technology use and online presence (Table 1).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

	Frequency	Percentage	Cumulative percentage
18-24	23	39,7	39,7
25-40	25	43,1	82,8
41-60	10	17,2	100,0
Total	58	100,0	

Table 1. Respondants age
Source : Authors

Table 2 shows that 79.3% of respondents are in finance and management and only 20% are in digital transformation. This might stem from the relatively new area of digital transformation and so less experts and human ressources.

	Frequency	Percentage	Cumulative percentage
Finance - Management	46	79,3	79,3
Digital transformation	12	20,7	100,0
Total	58	100,0	

Table 2. Work field or study field
Source: Authors

Since the study is made in Morocco, it was anticipated that the vast majority of responses will be from experts in Morocco. This is what Table 3 shows with 81% of respondents from Morocco and only a small cumulative percentage of 19% for both Spain and France. So we won't be able to analyse the influence of environmental differences on experts' perception of fintechs' relationship with banks based on the country of origin.

	Frequency	Percentage	Cumulative percentage
Spain	2	3,4	3,4
France	9	15,5	19,0
Morocco	47	81,0	100,0
Total	58	100,0	

Table 3. Respondants country
Source: Authors

Table 4 highlights that the use of technological tools in different processes is very important for 36 of this survey's respondents which represents 62% of the total sample. None of them finds it not important hence the absence of that choice in the following frequency table.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

	Frequency	Percentage	Cumulative percentage
Moderatly important	6	10,3	10,3
Important	16	27,6	37,9
Very important	36	62,1	100,0
Total	58	100,0	

Table 4. Importance of using technological tools
Source: Authors

	Frequency	Percentage	Cumulative percentage
No	46	79,3	79,3
Yes	12	20,7	100,0
Total	58	100,0	

Table 5. Possibility to digitally transform banks without grave consequences
Source: Authors

According to Table 5, we can clearly say that most respondents (almost 80%) do not expect banks to be digitally transformed without bad consequences.

Concerning the necessity of fintechs for a successful digital transformation of banking institutions, it was strongly agreed that there should be some kind of involvement in order to correctly implement digital transformation in banks.

	Frequency	Percentage	Cumulative percentage
No	10	17,2	17,2
Yes	48	82,8	100,0
Total	58	100,0	

Table 6. Necessity of fintechs for digital transformation of banks
Source: Authors

Less than half of the respondents (28) think that they could eventually replace banks in the future due to the similarity of offered services and relatively lower prices.

Nonetheless, 51,7% think that such a transformation in the banking system can not happen.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

	Frequency	Percentage	Cumulative percentage
No	30	51,7	51,7
Yes	28	48,3	100,0
Total	58	100,0	

Table 7. The ability of fintechs to replace banks completely
Source: Authors

3.3. Analysis of survey results

In order to analyse the previous results, we will be interpreting a dynamic cross-tabulation graph made with SPSS 25 according to the complementary questions in the questionnaire to better explain the relationships between all the variables. Questions about known digital banking services, risks and benefits of banks' digitalisation were asked for further details.

Since the main goal of this article is to determine whether or not FinTechs are a threat to the banking institutions, we chose to discuss the two most important variables that the survey revolves around. First, we determine if fintechs are necessary for the digital transformation of banks then we conclude if fintechs have a potential to replace banks.

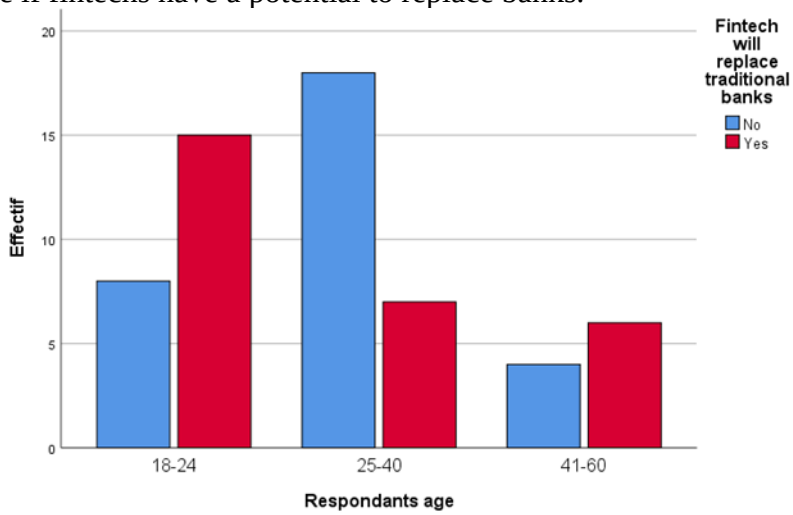


Figure 2. The ability of fintechs to replace banks completely / Age
Source: Authors

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

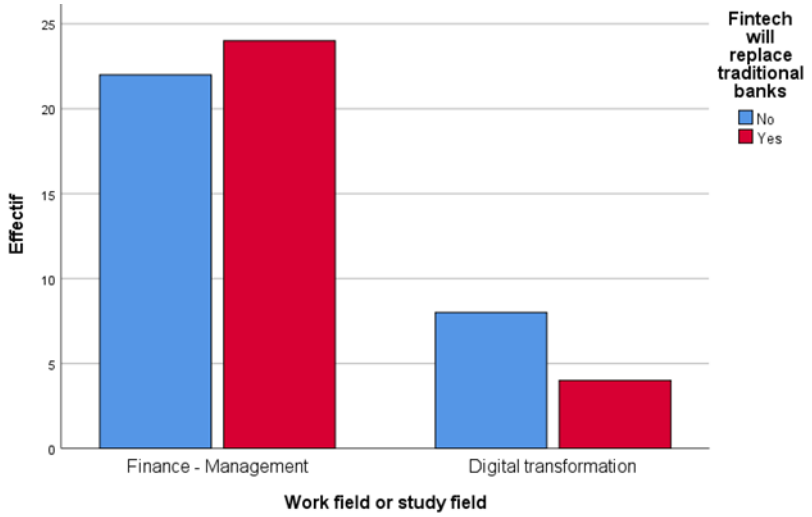


Figure 3. The ability of fintechs to replace banks completely / Field
Source: Authors

From Figure 2 and 3, we can conclude that fintechs are seen as a threat to banks in terms of competition amongst financiers and managers. Digital transformation experts on the other hand don't see a possible replacement of the banking system by the new entrants. For further explanations, we interpret in the next paragraph cross tabulation graphs for the possibility to digitally transform banks without grave consequences.

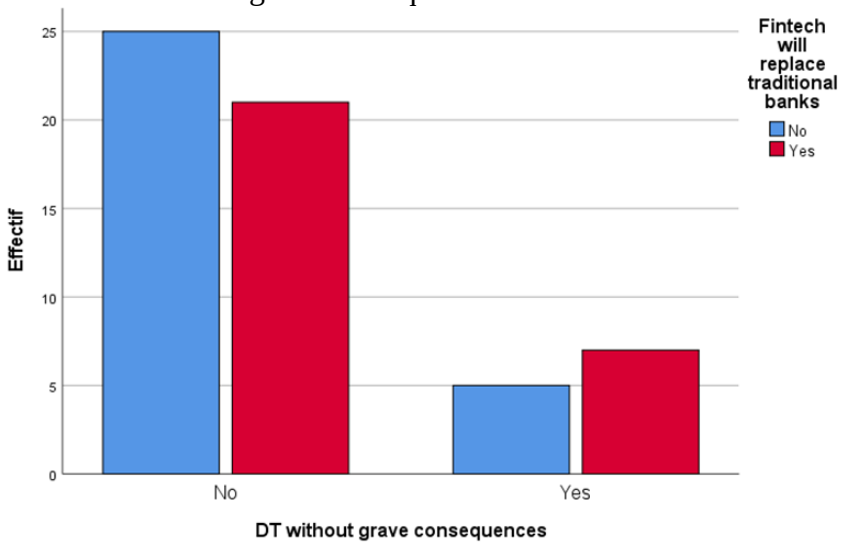


Figure 4. The ability of fintechs to replace banks completely / DT without grave consequences
Source: Authors

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Figure 4 shows that most respondents find it would be difficult to transform the whole banking system into a new digital system without bad repercussions. The most repeated arguments in this case were (1) an obligation for risk management ; (2) the importance of the structural change involved ; (3) resistance to change ; (4) redundancy costs.

Yet the majority of those who voted in favor of this idea do not believe that fintechs will succeed in replacing banks just because of their fragility.

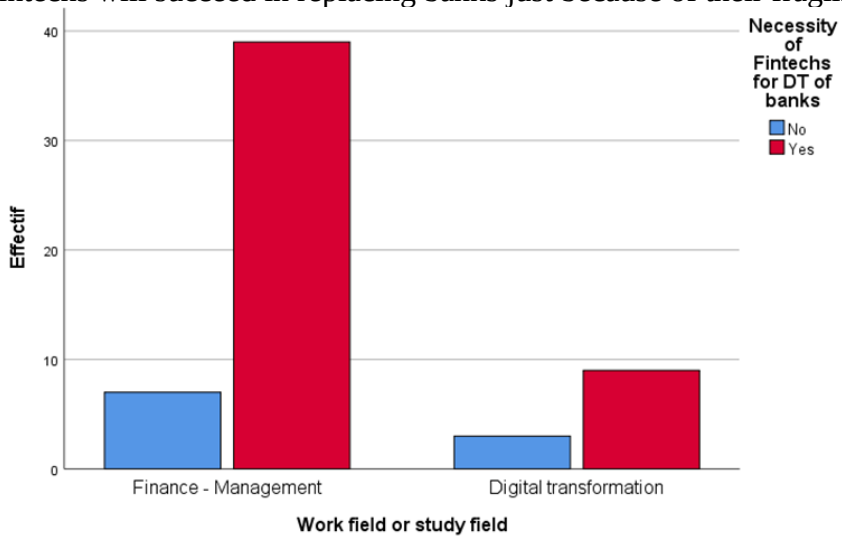


Figure 5. Necessity of fintechs for DT of banks / Work and study field
Source : Authors

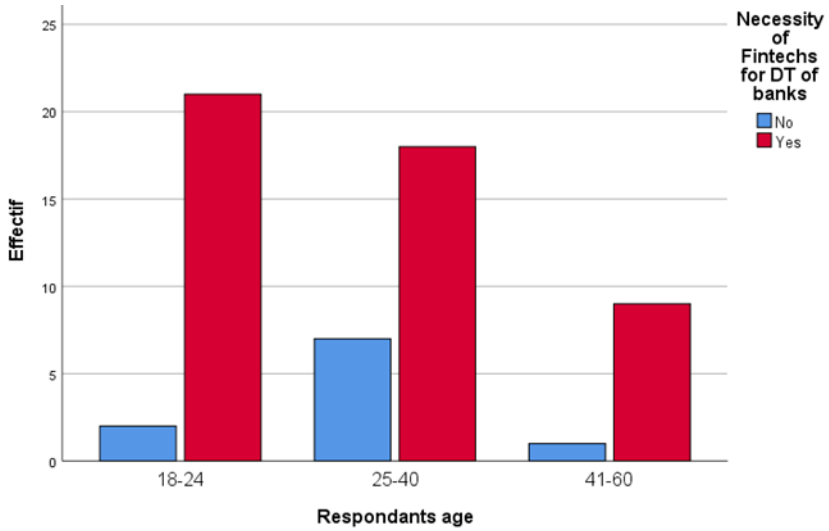


Figure 6. Necessity of fintechs for DT of banks / Age
Source : Authors

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

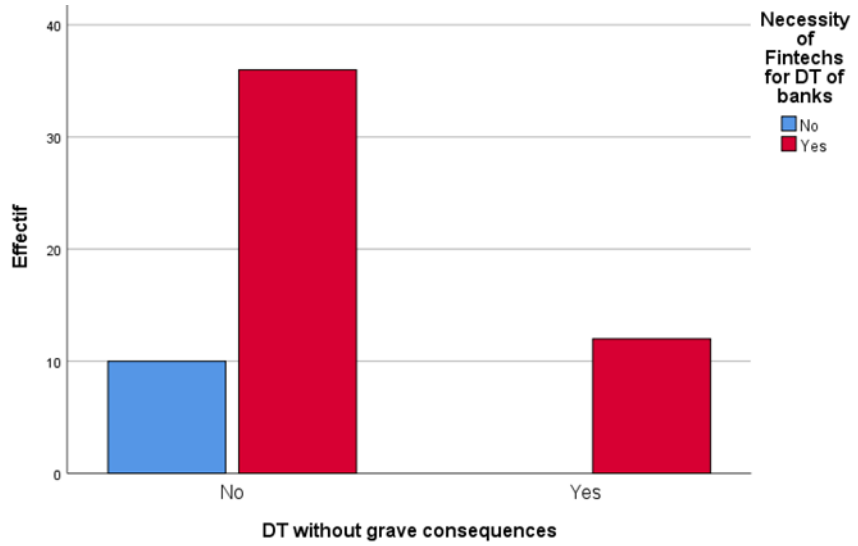


Figure 7. Necessity of fintechs for DT of banks / DT of banks without grave consequences
Source : Authors

Figure 5, 6 and 7 all show that no matter the variable crossed with the necessity of fintechs to digitally transform banks, the vast majority of respondents think that the banking institutions are in need of the new business model of fintechs in order to successfully transform with the least complications possible.

Our study has now confirmed that in order to correctly digitalize banks, FinTechs are a necessity and a guarantee to a successful transformation. FinTechs are the best chance for banks to increase their market share and keep their clients while attracting more, in times where consumers are very exigent and don't believe in customer loyalty.

It has also shown that the majority of Moroccan finance professionals are not yet familiarized with digital banking concepts, such as Robot Advisors and branches 3.0.

The participation of an expert in digital transformation of banks to this survey particularly caught our interest, of which the identity can't be disclosed. To his valuable knowledge for our study, even with the extremely complex structure, processes and regulations of banks it is still perfectly within reach for managers and scientists to transform banks into their full digital potential. Successful results are possible with the help of FinTechs.

Using the technological skills of FinTechs will allow a smooth transition from traditional banks to digital banks 4.0. Cooperation between banks and fintech companies allows the second to benefit from a stable customer base, a trusted label, capital and expertise. Banks benefit by ensuring a seamless digital customer experience and the integration of new

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

technologies. There are many forms of cooperation, with different financial commitments. Many types of relationships are possible like direct partnerships or through sandboxes.

Inputs and limitations of research

Our research had led to the conclusion that FinTechs as new entrants in the financial sector can accompany banks in their digital transformation journey, and cannot be seen as opponents only. "Much has been said about the doom that FinTech is set to spell for traditional banking. However, this rivalry is now giving way to a more future-first collaborative approach. The simplification of complex processes, bundled with heightened user experience, has made FinTech appealing and has encouraged many banks to open their doors to FinTech alliances that will enable the co-creation of solutions to foster a new wave of digital disruption." (PwC India).

We tried to include many aspects in our survey including reduction of sampling errors, nonetheless the sample studied is only an approximation of the targeted population due to many factors, such as COVID-19 worldwide restrictions. The prevalence of these errors can be reduced by increasing the sample size associated with further research problems. We recognize that the analysis in this article paints a rather small picture of the relationship of fintechs and banks so we can not generalize these results on the population.

Conclusion

The competition between banks and FinTechs for loyalty is not new, various key barriers restrain business relations between them.

While the current situation differs from the dot-com boom, the failure rate for fintech businesses is still likely to be high. However, FinTechs that focus on the retail market are set to break through and build sustainable businesses, and they are likely to profoundly reshape certain areas of financial services.

In the financial sector, errors come with serious and dangerous costs. Technologies and organization structures have to be mature, ingrained in a solid digital strategy in order to allow absolute delegation of banking operations. At the same time, we see that the most technical tasks are being securely delegated to machines.

The risk of cyber-attacks remains the most important and the most difficult to avoid. As we have witnessed in the past, a lot of data leaks by the giants of the computer world (Facebook now META and others). A similar situation for banks cannot be tolerable with the terrible damage it can cause.

Therefore, looking forward, banking will definitely not vanish, but traditional banks are endangered unless they keep up with the latest developments. 'Rethink banking' is more crucial than ever, and some

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

executive's initiatives in taking charge of the difficult path of structural change has been acknowledged (I. Krasonikolakis, M. Tsarbopoulos, 2020). A portfolio of digital initiatives can reduce risk through diversification, but genuine game changers require time, money, and leadership drive. Sometimes banks seed multiple ventures and then double down on scaling up those that deliver impact (McKinsey, 2015).

"Predictably, technologies are the most frequently mentioned element regarding the concept of digital transformation. Less, but also often emphasized elements are "Processes", "Data" and "Business models". The authors' latent purpose was to find arguments about the importance of the "people" element." (Verina N., Titko J. ; 2019).

References:

1. Allen, F., Gu, X., & Jagtiani, J. (2020). A survey of fintech research and policy discussion.
2. Anagnostopoulos, I. (2018). Fintech and Regtech: Impact on regulators and banks. *Journal of Economics and Business*, 100, 7-25.
3. Beziade C. & Assayag S., (2014). L'impact du numérique sur les métiers de la banque. *Les études de l'observatoire*.
4. Cardona, M., Kretschmer, T., & Strobel, T. (2013). ICT and productivity: conclusions from the empirical literature. *Information Economics and policy*, *25*(3), 109-125.
5. Derridj, R., & Amiar, L. (2020). La digitalisation au sein du secteur bancaire : entre causes et conséquences cas d'ABC Bank.
6. Diener, F., & Špaček, M. (2021). Digital Transformation in Banking: A Managerial Perspective on Barriers to Change. *Sustainability*, 13(4), 2032.
7. Dorfleitner, G., Hornuf, L., Schmitt, M., & Weber, M. (2017). The fintech market in Germany. In *FinTech in Germany* (pp. 13-46). Springer, Cham.
8. Fichman, R. G., Dos Santos, B. L., & Zheng, Z. (2014). Digital innovation as a fundamental and powerful concept in the information systems curriculum. *MIS quarterly*, 38(2), 329-A15.
9. Genzorova, T., Corejova, T., & Stalmasekova, N. (2019). How digital transformation can influence business model, Case study for transport industry. *Transportation Research Procedia*, 40, 1053-1058.
10. Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W. (2018). On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. *Journal of management information systems*, 35(1), 220-265.
11. Khanboubi, F., & Boulmakoul, A. (2019). Digital Transformation Metamodel in Banking. *INTIS*, 2019, 8th.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

12. Khanchel, H. (2019). The Impact of Digital Transformation on Banking. *International journal of trends in business administration*, (2).
13. KPMG International Cooperative (2017). Setting course in a disrupted marketplace. 134198-G.
14. Krasonikolakis, I., Tsarbopoulos, M., & Eng, T. Y. (2020). Are incumbent banks bygones in the face of digital transformation?. *Journal of General Management*, 46(1), 60-69.
15. Kretschmer, T., & Khashabi, P. (2020). Digital transformation and organization design: An integrated approach. *California Management Review*, *62*(4), 86-104.
16. McKinsey & Company (2018). Synergy and disruption: Ten trends shaping fintech. Global Banking.
17. McKinsey & Company. 2015a. "Strategic Choices for Banks in the Digital Age."
18. Miklos D., Somesh K., Tunde O., Kausik R. (2016). Cutting through the noise around financial technology Financial Services. *McKinsey & Company*.
19. Omarini, A. (2017). The digital transformation in banking and the role of FinTechs in the new financial intermediation scenario.
20. Shin, Y. J., & Choi, Y. (2019). Feasibility of the FinTech industry as an innovation platform for sustainable economic growth in Korea. *Sustainability*, 11(19), 5351.
21. Terrar, D. (2015). What is digital transformation ?
22. Valdez-de-Leon, O. (2016). A digital maturity model for telecommunications service providers. *Technology innovation management review*, 6(8).
23. Verina, N., & Titko, J. (2019, May). Digital transformation: conceptual framework. *In Proc. of the Int. Scientific Conference "Contemporary Issues in Business, Management and Economics Engineering'2019"*, Vilnius, Lithuania (pp. 9-10).
24. Yoo, Y. (2010). Computing in everyday life: A call for research on experiential computing. *MIS quarterly*, 213-231.

ESJ Social Sciences

Décisions politiques face à la COVID-19 à Bukavu, République Démocratique du Congo: Entre nécessité économique et exigence sociale

Amos Cishunguluka Kanani
Professeur Associé au Département de Sociologie,
Université Officielle de Bukavu, RD Congo

Doi:10.19044/esj.2022.v18n12p123

Submitted: 24 May 2021
Accepted: 27 April 2022
Published: 30 April 2022

Copyright 2022 Author(s)
Under Creative Commons BY-NC-ND
4.0 OPEN ACCESS

Cite As:
Kanani A.C. (2022). *Décisions politiques face à la COVID-19 à Bukavu, République Démocratique du Congo: Entre nécessité économique et exigence sociale*. European Scientific Journal, ESJ, 18 (12), 123. https://doi.org/10.19044/esj.2022.v18n12p123

Résumé

Cette étude s'est assignée pour but de discuter les fondements économiques et sociaux des décisions politiques face à la pandémie de Corona virus. Il en a découlé les objectifs spécifiques d'identifier l'importance accordée à l'économie et au social à travers les décisions politiques face à la pandémie de COVID-19; relever l'interprétation de ces décisions politiques par la population dans la ville de Bukavu en RD Congo; et enfin, expliquer l'enjeu de la primauté accordée à l'économie au détriment du social dans le processus de lutte contre la propagation de la pandémie de COVID-19 à Bukavu. Au plan méthodologique, la collecte des données a été axée principalement sur l'entretien libre et la discussion en groupe. Sur la base de l'échantillonnage occasionnel, 93 personnes ont été enquêtées individuellement et 35 intellectuels ont participé aux discussions de groupe. Les données ont été analysées au moyen des outils d'analyse qualitative. En rapport avec les objectifs lui assignés, l'étude a abouti aux résultats qui montrent qu'en RDC, les décisions politiques consistant à la fermeture des écoles, églises, espaces culturels et récréatifs à l'exception des activités marchandes ou commerciales ont accordé plus d'importance à l'économie qu'au social. Bien plus, ces mesures sont interprétées par les enquêtés comme relevant de l'injustice, parce qu'elles sont restrictives des libertés et inégalitaires ou sélectives. Enfin, l'analyse révèle que l'enjeu de la primauté

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

accordée à l'économie à travers ces décisions a été non seulement de protéger la population contre la pandémie mais aussi et surtout de permettre à l'État de maintenir sa capacité extractive (poursuite de la mobilisation des ressources en vue de répondre aux exigences sociales) en dépit de la crise sanitaire. Néanmoins, l'État est critiqué de n'avoir pas témoigné la solidarité à travers une politique de distribution dans ce contexte de crise sanitaire. Il est taxé d'avoir lui-même renforcé les inégalités sociales.

Mots-clés: COVID-19, nécessité économique, exigence sociale, décisions politiques, rationalité, inégalités

Political Decisions between Economic Necessity and Social Demands in the Face of COVID-19 in Bukavu, Democratic Republic of Congo

Amos Cishunguluka Kanani
Professeur Associé au Département de Sociologie,
Université Officielle de Bukavu, RD Congo

Abstract

This paper focuses on discussing the economic and social foundations of political decisions regarding the Corona virus pandemic. The objectives of the study aimed to identify the importance attributed to economics and social throughout political decisions due to the COVID-19 pandemic. The results from this study point out the interpretation of these political decisions by the population in Bukavu city, DRC. The supremacy system of economics over the social in the process of combating the spread of the COVID-19 pandemic was outlined also in Bukavu. Methodologically, data collection was carried out through open interviews and group discussions. Occasional sampling technique was utilized and 93 persons were individually analysed while 35 intellectuals attended group discussion. The data was analyzed using qualitative analysis tools. The results of the study reveal that DRC political decisions to close schools, churches, culture, and leisure spaces, with the exclusion of business activities, gave more relevance to economics than the social. These State regulations are interpreted by respondents as unfair because they are selective and liberty restrictive. The analysis highlights that the supremacy system given to the economy through these decisions was not only to protect the population against the COVID-19 pandemic but also to allow the State to maintain its extractive power (purpose of resources movement in order to respond to social obligations) despite the health crisis.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

The state is criticized for not having shown solidarity through a distribution policy in this context of health crisis and is known to have reinforced social inequalities.

Keywords: COVID-19, Economical necessity, social obligations, political decisions, rationality, inequalities

Introduction

Il n'est plus à douter ni à démontrer que le monde est en guerre contre un nouvel ennemi commun, à savoir le Corona virus, dit aussi la COVID-19. Ce nouveau fléau à amplitude mondiale vient s'ajouter à la liste des problèmes mondiaux les plus redoutables. Son adversité et sa capacité de nuisance dépassent encore les prévisions humaines et la bataille contre ce fléau n'est pas encore gagnée (World Bank, 2019). La planète terre n'en finit plus d'enregistrer différentes vagues et variantes de cette pandémie et d'en dresser le lourd bilan tant humain que financier, tout en cherchant les voies et moyens de vaincre le fléau. Il faut peut-être se projeter sur le long terme pour prétendre faire reculer ce mal à répercussion mondiale (Djiofack et al., 2020)**.** Sans nul doute, les cerveaux sont mis à contribution pour tenter de trouver des solutions idoines, combinant la recherche scientifique et les décisions politiques.

Soucieux de protéger les populations contre la contamination et limiter la propagation de la pandémie, les acteurs politiques prennent des décisions qu'ils jugent pertinentes, adéquates et conformes aux différents contextes. Toutefois, ces différentes décisions politiques ne semblent pas bénéficier de la même compréhension des gouvernés, et par conséquent, ne produisent pas les mêmes effets sur la diminution du taux de contamination.

Des comportements individuels ou collectifs de banalisation sont aussi observés au sein des populations pour défier la lutte déclenchée contre la pandémie. Rien d'étonnant pourtant, lorsqu'on sait que certaines de ces décisions touchent aux libertés, les restreignent et limitent l'accès à des droits. Des mécontentements à l'égard de ces mesures ont été entendus dans plusieurs pays, au Nord comme au Sud. Par exemple, en France, les patrons de bars, sous l'effet de la colère, ont manifesté à Lille contre la fermeture à 22 heures (AFP, septembre 2020).

Évidemment, face à cette pandémie, la politique de restriction des libertés n'est pas la même dans tous les pays. Par exemple, la suspension des activités économiques et socioculturelles s'est observée plus en Europe; tandis que la suspension des activités socioculturelles et la clémence à l'égard de certaines activités économiques s'est plus observée en République Démocratique du Congo (Djiofack, 2020).

Ainsi, en RD Congo, en général, et dans la ville de Bukavu en particulier, les décisions politiques face au Corona virus ont suspendu les

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

activités scolaires, universitaires, religieuses, culturelles (les cérémonies festives de masse, les stades et cercles sportifs, les restaurants et bars, les hôtels, etc.), alors que les marchés, les magasins, les alimentations, les supermarchés, etc., ont été gardés en activité. Cela a étonné les populations qui ont estimé que les mesures barrières édictées par les autorités seraient plus faciles à respecter et à faire respecter plutôt dans les églises, les écoles, les universités que dans les marchés.

Le marché central de Kadutu à Bukavu, par exemple, a fonctionné durant toute la période de confinement, quand les églises, les écoles et les espaces récréatifs étaient restées fermées. Cela a suscité des controverses et des incompréhensions au sein de l'opinion.

Cette réflexion sociologique ne peut probablement pas dissiper le mal entendu entre les décideurs et les populations concernant les décisions prises face à la COVID-19. Tout au moins, elle vise principalement à discuter les fondements économiques et sociaux des décisions politiques face au Corona virus. Spécifiquement, l'analyse vise à :

- Identifier l'importance accordée à l'économie et au social par les décideurs politiques à travers ces décisions. Autrement dit, comprendre et expliquer laquelle d'entre la nécessité économique et la nécessité sociale, prime sur l'autre, dans la praxis politique face au Corona virus, en RD Congo;
- Expliquer l'enjeu de la primauté accordée à l'économie au détriment du social dans le processus de lutte contre la propagation de la pandémie de COVID-19 en RD Congo et dans la ville de Bukavu.

Méthodologie

La réalisation de cette étude s'est appuyée sur une méthodologie qualitative. En effet, les conditions et les limites de l'efficacité des décisions politiques face à la COVID-19 ne peuvent être appréhendées que par l'analyse de leur pertinence dans un contexte donné, et ce, en portant un jugement sur les fondements et la qualité de ces décisions. Ainsi, les données collectées ont été essentiellement qualitatives, tout comme le type d'analyse étayée.

La collecte des données s'est effectuée en deux moments : pendant le confinement lors de la première vague de COVID-19 en RDC (avril-juillet 2020) et lors de la deuxième vague de COVID-19 (entre janvier-février 2021).

Ainsi, pendant le confinement, les membres des corps scientifiques et académiques de différentes facultés de l'Université Officielle de Bukavu, ont participé à des discussions à travers le groupe ou forum WhatsApp, autour des décisions prises par les autorités et les conséquences du confinement. Le nombre de ces universitaires qui ont débattu en groupe est de 35. Ce sont des enseignants des facultés des sciences sociales, Économie, Santé publique et Philosophie.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Lors de la deuxième vague de COVID-19 (janvier –février 2021), les écoles, les buvettes, les salles de fête, les stades, les cercles récréatifs, ...ont été fermées, à l'exception cette fois des églises (à cause probablement de la pression des prélats catholiques sur la présidence de la République) et des marchés. Ainsi, nous nous sommes entretenus avec 93 personnes rencontrées occasionnellement sur des artères routiers (place de l'indépendance, place dite feu rouge et Nyawera (place Munzihirwa) et dans les cours intérieures des églises après les messes ou les cultes (deux dimanches : un dimanche consacré à deux églises protestantes, à savoir 4e CEPAC SAYUNI et 3e CEBCA BUGABO, et un dimanche consacré aux églises catholiques dont la cathédrale notre Dame et la paroisse de Kadutu).

Les données recueillies ont été transcrites, traitées soumises à l'analyse du contenu qualitatif (Wanlin, 2007). Il convient de mentionner que l'analyse de contenu a été nourrie d'arguments articulant la dialectique et la praxéologie dans un système social global propice aux contradictions suivant le modèle de Savoie-Zajc (2000).

1. Nécessité économique et nécessité sociale dans les sociétés humaines

L'évolution des idées et des faits sociaux renseigne que dans toute société humaine, les volontés économiques et celles sociales sont souvent instrumentalisées par les logiques politiques. Ces volontés se trouvent alors considérées comme étant le fruit de la rationalité politique. Mais, dans certaines circonstances, l'économique est magnifié, tandis que le social est relégué au rang inférieur, dans la mesure où l'économie au sens large du terme est omniprésente et investit tous les domaines de la vie quotidienne : social, culturel et politique (Goethals et al., 2013).

1.1. La nécessité économique magnifiée

Parler de la « nécessité », c'est insinuer le besoin, l'impératif vital. Toutes les sociétés, traditionnelles ou modernes, ont l'expérience de la nécessité, en général, et de la nécessité économique, en particulier. Produire des richesses est une préoccupation primordiale des sociétés humaines dans toutes les circonstances. Aucune communauté ne peut exister sans une quelconque forme d'économie substantielle (Chavance, cité par Alary, 2012). L'économie a toujours été considérée comme étant nécessaire et sa place dans la société a toujours été soulignée. L'économie au sens large du terme est omniprésente dans la société humaine et investit tous les domaines de la vie quotidienne : social, culturel et politique. Elle est selon Goethals et ses collègues (2013), un pouvoir.

À la lumière des travaux de Polanyi (2007) dans le cadre de l'Anthropologie économique, il est possible de situer l'importance de

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

l'économie dans la société et de comprendre le possible passage de son encastrement à son désencastrement.

Au fait, l'auteur sus évoqué avait déjà constaté une sorte de mystification du paradigme économique dans les sociétés modernes, mystification qu'il désigne par le vocable de « sophisme économiste ». En effet, pour expliquer cette situation, il montre que jadis, « les différentes formes de commerces assuraient les flux de biens et la logique qui présidait au contrôle des prix était celle de la stabilité [...] L'esprit de marché domine les représentations économiques de l'homme moderne et contemporain.

Dans les sociétés traditionnelles, l'économie était logiquement encastrée. Pour Polanyi (2007), historiquement, le système économique n'était pas institutionnellement séparé. Il était simplement un corollaire d'autres institutions, non économiques. Les actes économiques, les transferts de biens par exemple, s'intégraient au processus général de socialisation et servaient des mobiles politiques, religieux, etc.

Au demeurant, pour cet auteur, le concept d'encastrement traduit cette intégration du système économique dans le social et s'oppose au concept de désencastrement qui est le fait pour l'économie de se placer à l'écart du social (Polanyi, 2007).

C'est dans le contexte de désencastrement de l'économie que se situe notre réflexion portant sur la nécessité économique au cœur des mesures politiques de lutte contre la propagation de la pandémie de la COVID-19 en RD Congo.

En effet, il se trouve que dans les sociétés actuelles en général, et la société congolaise, en, particulier, l'économie est magnifiée, placée à l'avant-garde des décisions. Les liens sociaux sont subordonnés à la majesté de l'économie; le marché est la forme économique que les mesures politiques semblent protéger dans les circonstances de crise. Il est peu probable que la place de l'économie dans ces sociétés ait connu des mutations. Le marché y est impératif pour faire interagir l'offre et la demande, sans trop se préoccuper explicitement de liens sociaux.

Le système de marché apparaît, se développe et se perfectionne, par la faim et le gain. L'impôt et la taxe deviennent des éléments essentiels de la puissance économique marchande, avec en toile de fond, l'autorité de l'État ou le pouvoir de coercition légitime.

En situation de crise de tout genre, l'État adopte un comportement rationnel qu'il pense a priori, capable d'influencer, en sa faveur, le fonctionnement du marché.

Des circonstances de crise de n'importe quelle sorte obligent donc l'État à prendre des mesures, y compris des mesures économiques, en vue de préserver son fonctionnement. À cet effet, l'économie reste nécessaire même pendant des périodes critiques. Ce n'est pas une circonstance de guerre qui a

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

dicté des mesures qui font polémique en RD Congo en général, et dans la ville de Bukavu en particulier. C'est une crise d'une autre nature qui aiguillonne la controverse, à savoir la pandémie de Corona virus, dont les mesures politiques de prévention ou de réduction de contamination semblent verser dans ce qui a été considéré plus loin comme relevant du « sophisme économiste ». L'État congolais désencastre lui-même l'économie et semble en souligner l'impérieuse nécessité, dans un contexte particulier de crise sanitaire. Ce faisant, le pouvoir étatique fait le choix et s'obstine à en assumer les conséquences.

Est-ce un choix risqué et non judicieux dans le contexte de la lutte contre la pandémie?

Il est tôt de le confirmer ou de l'infirmer, puisque le deuxième point va s'y atteler.

Cependant, il est incontestable que l'économie, dans le choix des options à prendre face à la COVID-19, a bénéficié d'une plus grande attention de la part des décideurs politiques.

Par ce développement, il sera démontré ici entre autres, qu'en formulant sa métaphore de l'encastrement-désencastrement, Polanyi (2007) dénonce le mythe d'un marché autorégulateur, émancipé des institutions et des sociétés. Pour lui, l'économie doit être subordonnée aux besoins des hommes, et non l'inverse.

De ce qui précède, il se trouve que les sociétés humaines contemporaines, sous l'égide de l'appareil étatique, accordent une place de choix à l'économie, au marché, et donc à l'argent.

Dans ce même sillage, Lazarus et al. (2020) ont réverbéré sur le thème « L'argent occupe-t-il une place trop importante dans notre société? ». Et sans doute conviennent-ils que les rapports à l'argent sont immuables dans le monde d'aujourd'hui et qu'en tant qu'outil irremplaçable des échanges et des transactions, l'argent a aussi une utilité sociale et libère. L'État en a donc besoin, tout comme les individus et les groupes et ce, dans n'importe quelle circonstance.

La magnificence de l'économie qui vient d'être soulignée explique que les individus et l'État sont calculateurs, rationnels. Si l'économique s'est vu attribuer une telle importance, il pourrait ne pas en être le cas pour le social qui, pourtant, se trouve évoqué dans tous les discours des décideurs. Devrait-il être la cause de l'économique ou sa finalité? L'économique est-il plutôt envisagé comme un outil au service du social dans le contexte actuel obligeant de décider face au Corona virus? La section suivante tente d'apporter un éclairage sur la place que les décisions et les choix politiques accordent à l'impératif social.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

1.2. La nécessité sociale reléguée?

Le social est ici compris comme un ensemble de dépenses, de responsabilités, des actions que l'autorité publique doit endosser en vue de répondre aux sollicitations et satisfaire les besoins collectifs.

Aux dires de Steiner et Vatin (2013), la sociologie économique considère que l'activité économique est une dimension de l'activité sociale. En d'autres termes, le fait économique est en propre un fait social. Molénat (2015) tombe d'accord avec eux que les activités économiques sont, comme les autres, des activités sociales, même si ce ne sont pas nécessairement des activités sociales comme les autres. Bref, pour lui, l'économie, c'est aussi la société.

Dans cette étude, la notion de social désigne un ensemble de dépenses, de responsabilités, des actions que l'autorité publique doit endosser en vue de répondre aux sollicitations et satisfaire les besoins collectifs.

Il n'est donc pas insensé de commencer par affirmer que le social, vu sous l'angle instrumental ou finaliste, est une charge, un coût pour l'appareil étatique. Mais, d'un autre son de cloche, il est un moyen pour réaliser ou d'atteindre l'économique.

Pourtant, l'État moderne est fondamentalement capitaliste pour une finalité sociale. Il serait utopique de lui exiger un regard attentif sur le social sans l'encourager à réaliser ses ambitions économiques en termes de richesses ou de croissance.

Les liens sociaux ont souvent été affectés par des crises économiques qui frappent de plein fouet les sociétés humaines. Mais, quant à elle, l'économie a souvent trouvé sa place dans ces crises, qu'elle en soit la cause ou non.

La nécessité sociale a souvent exigé la nécessité économique, mais le débat en rapport avec l'imbrication de ces deux nécessités reste de taille en sciences sociales.

Avec le triomphe de l'individualisme, même l'État n'est pas forcément une instance de solidarité. Dans le contexte de la lutte contre la propagation du virus de Corona, à Bukavu, la nécessité sociale s'est vue reléguée à l'arrière plan (l'église, l'école, le sport, la culture etc.) au profit de la nécessité économique (marché, magasin etc.). Cependant, l'économie ne se résume pas dans l'idée de marché ou de magasin comme lieu de vente et d'achat. Certains secteurs de la vie économique comme le travail au sens large, ont aussi subi de plein fouet les effets néfastes des mesures politiques de lutte contre la pandémie; surtout que le télétravail n'est pas la réalité de toutes les sociétés.

Le social, bien que nécessaire, se trouve dominé par l'économique dans certaines circonstances. Bourdieu (2000) en convient lorsqu'il note que le monde social est formé de champs sociaux caractérisés par des rapports de pouvoir ou de domination. Ces champs sociaux sont des lieux de prise de

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

positions conflictuelles autour d'enjeux spécifiques : l'école, les médias, l'art, l'économie, la politique, le langage, la science, etc. Ceci est encore plus vérifiable dans un contexte où l'État est lui-même capitaliste.

L'intervention de l'État sur le marché n'a pas réussi à déraciner la suprématie du capital au bénéfice du social. La dictature des marchés s'impose aujourd'hui aux États pour éviter l'implosion financière, jusqu'à les pousser à privilégier malgré eux la nécessité économique et reléguer au second plan la nécessité sociale.

La nécessité sociale et la nécessité économique seraient pourtant placées au même niveau dans un État Providence, ayant le devoir de jouer un rôle actif de stimuler la croissance économique, en fournissant une protection sociale et en corrigeant les injustices sociales.

Pour nous, l'État doit remplir les fonctions extractives, mais aussi celles distributives en vue de conserver son monopole de la violence symbolique légitime et pour la justice sociale.

Au cas où il autorise le fonctionnement du marché tout en paralysant le social et le culturel, il reproduit les inégalités sociales. L'État est appelé à réduire ces inégalités en redistribuant une partie de la richesse nationale créée.

Dans ce sillage, Alesina et Glaeser (2006) ont tiré quelques conclusions sur le fonctionnement de la redistribution sur les deux rives de l'Atlantique. En effet, ils trouvent que les flux de ressources pris aux riches pour donner aux plus pauvres sont bien plus importants en Europe occidentale qu'aux États-Unis. Les dépenses publiques y sont en moyenne plus élevées, 45% du PIB dans l'Union Européenne contre moins de 30% aux États-Unis.

Il en demeure que les États, bien que se considérant tous comme étant Providence, n'ont cependant pas la même politique de redistribution. Pourtant, cette dernière est intimement liée à la nécessité sociale qui ne saurait donc pas être reléguée au dernier plan. C'est cela qui justifierait le besoin de jonction de la nécessité économique et la nécessité sociale dans la prévention contre le Corona virus.

En RD Congo, en général et à Bukavu, en particulier, à cause de la COVID-19, les activités socio-culturelles ont été confinées autant que les humains, mais les activités économiques exercées au marché au sens populaire ont été maintenues. C'est probablement une question de rationalité de la part des autorités. Il est important de scruter les fondements de la primauté de la nécessité économique sur la nécessité sociale dans la lutte contre la propagation de la pandémie, en vue de relever et expliquer la rationalité ou l'irrationalité des décisions politiques face au Corona virus à Bukavu-RD Congo.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

2. Résultats de l'enquête

Les préoccupations majeures de ce point sont celles de déceler les fondements de la primauté accordée à l'économique dans les décisions politiques de lutte contre la propagation de la pandémie et le débat que suscite le choix politique opéré dans ce contexte sanitaire difficile. L'ambition ultime est d'arriver à établir, à la lumière des opinions, si ces décisions politiques sont ou non justes et expliquer l'enjeu de leur orientation plutôt économique que sociale.

2.1. Prise de conscience de l'existence de la COVID-19 à Bukavu

A Bukavu, la plupart des enquêtés ont affirmé l'existence de cette pandémie et de sa dangerosité. Réagissant dans le forum whatssap de l'Université Officielle de Bukavu, un enseignant en Science politique et administrative soutient ce qui suit : *« un gouvernement responsable ne pouvait pas prendre des mesures aussi fortes si rien de dangereux n'était vu ni ressenti »*. C'est quasiment le même point de vue d'un enseignant en santé publique qui estime que : « *nous devons être vigilants et attentifs aux mesures barrières édictées par le gouvernement, que la pandémie soit réelle ou pas, c'est pour notre bien* ». On voit dans ce propos un message de conscientisation et de sensibilisation.

Pour leur part, les individus sceptiques ont argué que cette pandémie est une réalité ailleurs mais pas en RD Congo et encore moins à Bukavu où les quelques cas signalés de mise en quarantaine restent minimes pour confirmer la présence du virus. Et d'ajouter qu'aussi longtemps que des cas de décès prouvés de COVID-19 n'étaient pas fournis par l'Etat et les structures médicales, ils ne croiront pas à la présence de cette pandémie. Parmi eux, un philosophe s'exprime : « *Je pense que le Gouvernement, par l'entremise de la coordination nationale de riposte, invente des faux cas en vue d'être éligible aux financements de l'OMS et des autres partenaires internationaux œuvrant dans le domaine de la santé. C'et pour cela que tout cas de décès qui survient dans les hôpitaux de proximité avec le pouvoir est mis au compte de COVID-19* ».

Les discussions entre universitaires dans le forum montre aussi que plusieurs co-débateurs ont été conscients de la présence de cette pandémie, mais certains d'entre eux restent convaincus que la pandémie est instrumentalisée par les gouvernants pour montrer leur arrimage au monde, mais qu'il n'y avait pas de cas de COVID-19 à Bukavu. Toutefois, la conscience du danger est avouée de la part de plusieurs enquêtés et implique la nécessité de se protéger.

Autant la plupart des gens étaient convaincus de la présence de la pandémie, autant ils avaient pris conscience de la nécessité de se protéger.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Pour leur part, les personnes enquêtées individuellement ont également reconnu l'existence de cette pandémie et ont à leur tour souligné la nécessité de se protéger en respectant les mesures barrières. L'un d'entre eux rencontré à l'église de la 3e CEBCA à Bugabo/ Kadutu explique : « *la population de Bukavu est toujours dubitative et s'oppose souvent à tout avant de vérifier. Je crains que cela ne risque de favoriser la propagation de cette pandémie. Moi je pense que la COVID-19 existe, mais les décisions du gouvernement pour en empêcher la propagation ne sont pas justes*».

Ces différents points de vue montrent que globalement, à Bukavu, l'opinion croit en l'existence de la pandémie de COVID-19 et trouve utile de se protéger contre ce fléau. Tout de même, il se dégage qu'une certaine opinion n'a pas confiance au gouvernement, l'accusant de faire preuve d'un conformisme complaisant à un ordre mondial dont les effets ne touchent pas directement la RD Congo.

2.2. Diversité d'opinions sur l'orientation des mesures politiques de lutte contre la propagation de la COVID-19 à Bukavu

A Bukavu, il n'a été trouvé aucun cas de contamination à partir du marché, alors que là, aucune mesure barrière n'est observée. La contrainte et la volonté de se protéger ainsi que de protéger autrui n'y sont pas des règles d'usage.

Les mesures édictées par les autorités pour faire face à la crise sanitaire liée au Corona virus (fermeture des écoles, des églises, des bars, restaurants, des stades, des cercles récréatifs, …excepté les marchés), sont jugées de très rigoureuses et injustes par tous les enquêtés. Ainsi, une opinion importante estime que ces mesures restreignent les libertés individuelles et publiques.

Les discussions en groupe avec les universitaires ont à leur tour permis de constater que le problème ne se situe pas au niveau de la protection (il est normal qu'un gouvernement protège son peuple contre un mal), mais au niveau de la rationalité des mesures prises. Visiblement, pour nombre d'enquêtés, le problème ne se pose pas en termes de pourquoi le gouvernement a pris des décisions en vue de protéger la population contre la propagation de la pandémie, mais plutôt au niveau de l'efficacité et de la justesse desdites mesures. Il est donc intéressant de noter que le débat se trouve plutôt au niveau de l'orientation que l'État donne aux mesures face à la pandémie, lesquelles orientations s'avèrent plus économiques que sociales. C'est dans cette perspective qu'il s'avère utile d'examiner les fondements matérialistes de ces mesures en RD Congo, en général, et dans la ville de Bukavu, en particulier.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

2.3. Dialectique des mesures politiques et des opinions populaires face à la COVID-19

Lorsqu'on cherche à accéder à la connaissance sur l'appréciation à l'égard des décisions d'arrêt des activités socioculturelles à l'exclusion de celles économiques ou marchandes, à Bukavu, on se met à l'évidence de la colère populaire froide et de la désobligeance.

Les mesures politiques adoptées en RD Congo pour faire face à la crise sanitaire due au Corona virus ne sont pas appréciées de la même manière par leurs destinataires. Deux tendances se dégagent de ces appréciations étayées par l'opinion : la tendance opposée à ces mesures (tendance pessimiste) considérant ces mesures comme irrationnelles, et la tendance favorable à ces mesures (tendance optimiste) qui voit en ces mesures le reflet du sens de responsabilité du gouvernement.

A la suite de ces considérations, il ressort des entretiens individuels et des discussions en groupe avec les universitaires que ces décisions politiques sont appréciées soit de très mauvaises soit de mauvaises et rarement de bonnes.

Mais, au fond, qu'est-ce qu'on reproche à ces mesures?

Au fait, ces mesures sont considérées comme étant injustes et très restrictives en ce qui concerne les libertés individuelles et publiques. Bien plus, elles sont trouvées injustes en ce qu'elles n'ont pas touché tous les secteurs (elles sont sélectives en ce qui concerne les secteurs à paralyser pendant le confinement).

L'opinion estime que les décideurs n'ont pas tenu compte du contexte de pauvreté et en cela, les mesures édictées ont été considérées comme susceptibles d'aggraver les inégalités sociales.

2.4. La primauté de l'économique dans la praxis politique face à la pandémie de COVID-19 : le social négligé

À ce stade de l'analyse, s'engage la dialectique des mesures politiques et des opinions en vue d'expliciter la question de la rationalité desdites mesures. Les discussions entre universitaires au sujet de la pertinence des mesures d'arrêt des autres activités à l'exception des activités commerciales ont été mises à profit. A la même occasion, les universitaires ont fait des supputations pour essayer de comprendre les raisons qui pousseraient les gouvernants à ne pas fermer les marchés pendant que d'autres secteurs d'activités étaient paralysés.

S'ils sont tous restés unanimes que ce n'est pas au marché que ces mesures barrières seraient mieux observées qu'en classe, à l'auditoire et à l'église, et que c'est absurde que le gouvernement ait paralysé d'autres secteurs, ils ne sont pas cependant tombés d'accord sur les motifs de laisser ouverts les marchés.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

La question qui a alimenté le débat à ce stade est celle de savoir pourquoi ces mesures ont-elles épargné les marchés ?

Les économistes, en première ligne, ont soutenu que l'État a agi rationnellement, puisque les besoins restent à satisfaire en dépit de la présence de la pandémie et c'est à l'instance étatique qu'il appartient de satisfaire ces besoins. Un enseignant en Economie soutient que : *« Les activités économiques doivent être protégées et maintenues en toutes circonstances, sauf pendant la guerre, pour permettre à l'État de prélever taxes et impôts afin de demeurer capable de répondre aux demandes de la nation. ».*

Pour les analystes des autres disciplines (sociologues, politologues, philosophes, spécialistes de santé publique), même s'il est nécessaire pour l'Etat de poursuivre le jeu de ses rôles et assumer ses responsabilités, les mesures prises par le gouvernement n'étaient rationnelles que d'apparence. Ces intervenants jugent d'injustes les décisions politiques qui ont paralysé certaines activités aussi importantes au profit des activités économiques. Par exemple, un politologue martèle que *« Face à la pandémie de COVID-19, le marché ne protège pas mieux et n'expose pas moins la population que l'école et l'église. D'ailleurs, les richesses économiques réalisées pendant le confinement n'ont pas été équitablement distribuées entre les citoyens ».*

Dans ce même ordre d'idées, un sociologue s'interroge : « *les individus qui vivent au « taux du jour », c'est-à-dire les chômeurs et les pauvres, empêchés de se débrouiller pendant deux mois, ont-ils aussi bénéficié de ces richesses réalisées par l'État sur les activités économiques en période de confinement pour raison de pandémie? ».*

On peut noter, à la lumière de toutes ces discussions avec les universitaires de tendance critique à l'égard de ces mesures, que ces dernières ont sacrifié cette masse de personnes dont la survie repose sur la débrouille. Pourtant, selon l'opinion la plus repandue, ces personnes confinées devraient, au nom de la solidarité et de la fraternité, bénéficier d'une partie de ces richesses réalisées sur les activités économiques pendant le confinement. Un sociologue soutient par exemple que : « *Des vivres pouvaient être distribués aux ménages pauvres pendant le confinement pour leur témoigner la solidarité et prouver la justice sociale en des circonstances d'exception* ». Cette opinion ne fut pas différente de celle d'un philosophe qui a argué que « *puisque l'État a privilégié les activités économiques ou marchandes pendant qu'il a imposé le confinement aux autres couches socio-professionnelles, il devait distribuer à manger aux personnes incapables de réaliser des stocks de nourritures* ».

Ainsi, si l'État avait agi de cette façon, il serait passé de la rationalité économique à la rationalité sociale, toutes deux indispensables pour l'équilibre social.

Les points de vue sont partagés mais un large consensus se dégage pour constater que la rationalité des décideurs a été plutôt économique que sociale.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Un autre point de vue avance que le maintien des activités économiques au détriment des autres activités sociales et culturelles aura été une stratégie pour le gouvernement de protéger le social dans ce contexte de fléau mondial. Toutefois, cette stratégie est jugée injuste par sa finalité : ses résultats n'ont pas profité de la même manière à tous les citoyens soumis au confinement. L'État n'a pas procédé à la redistribution des gains tirés de ces activités économiques que ses décisions ont favorisées pendant le confinement. Ce sont ceux qui en profitent en période normale qui en ont toujours profité pendant les circonstances de confinement. Bref, le social a été négligé au travers des décisions politiques face à la COVID-19.

2.5. Une nécessité économique acquise à la cause du social?

En dernière analyse, ces mesures politiques protégeant l'économique au détriment du social ont été taxées de s'être écartées de l'utilité sociale de l'économie et n'ont pas favorisé le lien social en situation de crise dans la société. Rappelons que ces mesures politiques sont considérées par les enquêtés comme ayant relégué le social au second plan, mais pour une raison valable selon les uns (maintien des capacités de répondre aux exigences sociales de la population) et pour rien de social selon les autres.

Il se trouve donc que la nécessité économique a guidé le choix politique. Pour l'ensemble des enquêtés, le caractère économique de ces mesures ne leur confère pas la particularité de protéger le social. Aucun élan de solidarité ne s'est manifesté envers les pauvres et les chômeurs, aussi bien pendant le confinement que pendant le couvre-feu. L'État a maintenu en activité les marchés pour prélever taxes et impôts et garnir le trésor public, mais pas en vue de la redistribution. Le social n'a pas bénéficié de plus de regard qu'ordinaire, alors que le contexte s'y prêtait le mieux.

L'État est accusé de s'être limité à décréter des mesures limitant la liberté d'exercer et d'entreprendre mais il ne s'est pas assumé comme instance responsable, garante de la protection sociale et modèle de solidarité pendant des circonstances d'exception.

Fort de cela, on peut affirmer que le système étatique congolais n'a pas réalisé la jonction des impératifs politiques, économiques et socioculturels. L'économique devrait être mis au service du social et du culturel, au travers de l'action politique d'intérêt publique.

Le choix politique pragmatique est celui qui cherche à joindre l'économique et le social, en vue de contribuer à la construction d'une société plus solidaire et plus cohésive en situation de crise.

Or, selon une certaine opinion, dans son choix politique en contexte de Corona virus, l'État congolais a fait de l'économie pour l'économie et non pour le social.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

3. Discussion

En RD Congo, en général, et à Bukavu, en particulier, les décisions politiques prises face à cette pandémie ont protégé l'économie et relégué au second rang le social. Les fondements de cette tendance se situent dans la rationalité politique, consistant à opérer des choix moins risqués, et considérant le social comme étant un ensemble d'exigences dont les réponses sont à trouver dans l'économie. Ce sont des mesures rationnelles mais jugées antisociales par les enquêtés. Ces résultats se rapprochent de ceux de l'étude sur l'évaluation de l'impact économique de la COVID-19 en Afrique subsaharienne : perspectives à partir d'un modèle d'équilibre général calculable (EGC) qui montre que les décisions politiques efficaces constituent une condition essentielle pour prévenir l'impact négatif de la pandémie. Ces deux études ont en commun d'avoir mis en évidence les décisions politiques, soit comme facteur important pout prévenir l'impact négatif de la pandémie soit comme instrument d'articulation ou de liaison de l'économie et du social dans la prévention contre la propagation de la pandémie.

Par ailleurs, face à la COVID-19, les décideurs politiques congolais ont agi par rationnalité et pragmatisme. Ils ont fait le choix qui donne la primauté à la nécessité économique au détriment de l'exigence sociale. Ils endossent les conséquences de leur choix, tout en prétendant apporter des réponses économiques aux exigences sociales.

Ce résultat se rapproche des analyses de Campbell et Rule (2002) sur la rationalité. En effet, leurs analyses sur le choix rationnel soulignent l'instrumentalisme et l'analyse coût-avantage. Les acteurs (y compris les acteurs politiques) font des calculs des lignes d'actions les plus susceptibles de maximiser leurs récompenses globales et assument les conséquences de chaque choix opéré. Cependant, en dépit de différents dilemmes et impasses des choix politiques, le pragmatisme doit être la règle.

Ce résultat se rapproche aussi de l'analyse de Goethals et al. (2013) selon laquelle l'économie au sens large du terme est omniprésente et investit tous les domaines de la vie quotidienne : social, culturel et politique. C'est pour cela que les autorités politiques instrumentalisent l'économie en la faisant passer pour un référentiel dans la recherche des solutions aux sollicitations ou aux besoins sociaux en toute circonstance.

Enfin, les résultats de cette étude reneigent qu'à Bukavu en RD Congo, l'opinion constate que l'État a privilégié l'économie mais n'a pas amélioré sa capacité distributive. En situation de crise sanitaire imposant le confinement, il était attendu que l'Etat redistribue ou réponde aux demandes sociales de la population, cela n'a pas été fait. Ce résultat semble converger vers celui obtenu par Alesina et Glaeser (2006) qui, dans un élan de comparaison, ont trouvé que la part de la distribution par l'Etat est plus importante en Europe occidentale qu'aux États-Unis.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Cela suggère donc que l'économie devrait être mise au service du social et du culturel, par l'action politique d'intérêt publique.

Conclusion

Les choix que les décideurs opèrent lorsqu'ils se trouvent confrontés à des exigences d'ordre social et d'ordre économique sont multiples et peuvent être controversés.

Ainsi, il est ressorti de cette recherche que les décisions politiques prises dans le cadre de la lutte contre la propagation du virus sont interprétées comme étant injustes et inégalitaires.

On peut retenir que les décisions politiques face au Corona virus ont privilégié la nécessité économique au détriment de la nécessité sociale. Le choix du politique a été guidé par la rationalité mais qui, comme on le sait, en accord avec bien des penseurs, reste limitée.

D'autres résultats renseignent que la rationalité économique qui caractérise ces mesures politiques n'a pas été suivie de la rationalité sociale. L'État congolais est considéré ici comme un acteur rationnel, mais pas au bénéfice du social, puisque tout en ayant imposé le confinement de la population pour prévenir la contamination par la pandémie de COVID-19, l'État n'a cependant pas procédé à la redistribution des richesses économiques à tous les citoyens au cours de cette période. Sans faire preuve de solidarité, l'État a désencastré l'économie au détriment du social, avec comme enjeu le maintien de sa capacité à répondre aux exigences sociales, en dépit de la crise sanitaire.

Les résultats analysés dans cet article portent à croire qu'en situation sociale de crise comme celle de COVID-19, l'économie et le social ne peuvent plus être chacun désencastrés mais devraient être articulées, enchevêtrées, pour le maintien de l'équilibre au sein du système social. La raison en est que l'économie est conçue pour servir d'outil au social.

References:

1. Alary, P. (2012). « La subsistance de l'homme : l'économie selon Karl Polanyi », *Revue de la régulation.* http: journals.openedition.org/régulation/10008 ; DOI : 10.4000/regulation.10008. Consulté le 14 mars 2021.
2. Alesina, A. & Glaeser, E. (2006). Combattre les inégalités et la pauvreté : les Etats-Unis face à l'Europe, Editions Flammarion.
3. Aron, R. (1958). « Note sur le pouvoir économique », *Revue économique*, v.9, n° 6.
4. Bourdieu, P. (2000). *Théorie du pouvoir symbolique : la domination dans les champs sociaux.* http://www.sietmanagement.fr consulté le 8 février 2021.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

5. Coronavirus en France: à Paris aussi, les patrons de bars sont mécontents et le font savoir © NICOLAS TUCAT-AFP, 27septembre 2020 à 18h 55.
6. Djiofack, Z., Dudu, H., & Zeufack, A.G. (2020). "Évaluation de l'impact économique de la COVID-19 en Afrique subsaharienne : perspectives à partir d'un modèle d'équilibre général calculable (EGC)", International Development Policy | Revue internationale de politique de développement URL: http://journals.openedition.org/poldev/3546; DOI: https://doi.org/10.4000/poldev.3546.
7. Goethals, C. (2013). « Le pouvoir économique », in *Dossier du CRISP*, n° 82.
8. Lazarus, J., Pauget G., Ruimy, M., & Micoleau-Marcel, P. (2020). « L'argent occupe-t-il une place trop importante dans notre société? », *Les journées de l'économie*, Lyon.
9. Meadwell, H. (2002). « La théorie du choix rationnel et ses critiques », *Sociologie et sociétés*, vol 34, N° 1.
10. Molénat, X. (2015). « L'économie, c'est aussi la société », in *Grands Dossiers*, n° 16.
11. Polanyi, K. (2007). « Le sophisme économiciste », *Revue du Mauss*, N° 29, La Découverte.
12. Savoie-Zajc, L. (2000). L'analyse de données qualitatives: pratiques traditionnelle et assistée par le logiciel NUD*IST. Recherches qualitatives, 20, 99-123.
13. Steiner, P. & Vatin, F. (2013). « Introduction - Le fait économique comme fait social », *in Traité de sociologie économique,* Col. Quadrige, Puf.
14. Suzanne de Brunhoff (1981). « Le champ d'action de l'état (sic) capitaliste », in *Etat et Capital, recherche sur la politique économique*, Col. Fondations, la Découverte.
15. Wanlin, P. (2007). L'analyse de contenu comme méthode d'analyse qualitative d'entretiens : une comparaison entre les traitements manuels et l'utilisation de logiciels. Actes du colloque BILAN ET PROSPECTIVES DE LA RECHERCHE QUALITATIVE © 2007 Association pour la recherche qualitative. ISSN 1715-8702243.
16. World Bank (2019). "The Economic Impact of the 2018 Ebola Epidemic in the Democratic Republic of Congo. Estimates for DRC and Four Neighboring Countries".

ESJ Social Sciences

La Russie en Afrique : ambition de puissance et *pôles* médias *stratégiques*

Dr. Qemal Affagnon
Université d'Abomey-Calavi, Bénin

Doi:10.19044/esj.2022.v18n12p140

Submitted: 30 January 2022
Accepted: 18 April 2022
Published: 30 April 2022

Copyright 2022 Author(s)
Under Creative Commons BY-NC-ND
4.0 OPEN ACCESS

Cite As:
Affagnon Q. (2022). *La Russie en Afrique : ambition de puissance et pôles médias stratégiques.* European Scientific Journal, ESJ, 18 (12), 140.
https://doi.org/10.19044/esj.2022.v18n12p140

Résumé

À la chute de l'URSS, l'État russe avait mis en veilleuse son influence dans l'espace mondial de l'information. Après le trou noir des années 1990, la Russie semble cependant avoir retrouvé les chemins de la puissance médiatique. Depuis quelques années, le pouvoir russe fait de la diplomatie médiatique, l'un des pivots de sa politique étrangère en Afrique. Depuis le début des années 2000, la Russie a lancé une politique de rapprochement afin de retrouver son statut d'alliée auprès de l'Afrique. Dans un contexte de visibilité accrue, ce travail porte sur l'influence médiatique russe qui tente de se projeter sur de nouveaux territoires. En Afrique, cette stratégie est portée par une myriade de sites, mais les deux figures de proue de cette offensive sont RT et Sputnik. Le présent article s'attache à expliquer les conditions d'émergence et le positionnement de ces médias. Notre énoncé vise également à explorer les effets néfastes de cette démarche qui consiste à envahir des espaces géographiques en inondant les internautes de messages éminemment stratégiques. Sur la base d'une observation ethnographique, cette recherche essaie aussi de mettre en lumière, les motifs géopolitiques et économiques qui font de l'Afrique, un terrain propice dans le champ de l'information internationale.

Mots-clés: Russie- Afrique- Média- Données- Télévision - réseaux sociaux

European Scientific Journal, ESJ
April 2022 edition Vol.18, No.12
ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Russia in Africa: Power Ambition and Strategic Media Hubs

Dr. Qemal Affagnon
Universite d'Abomey-Calavi, Benin

Abstract

After the fall of the USSR, the Russian state put on hold its influence in the world information space. However, following the black hole of the 1990s, Russia seems to have found its way back to media power. For several years now, the Russian government has made media diplomacy one of the pivots of its foreign policy in Africa. Since the beginning of the 2000s, Russia has launched a policy of reconciliation in order to regain its status as an ally in Africa. In a context of increased visibility, this work focuses on Russian media influence which is trying to project itself into new territories. In Africa, this strategy is carried by a myriad of sites, but the two leading figures of this offensive are RT and Sputnik. This article seeks to explain the conditions of emergence and positioning of these media. Our statement also aims to explore the harmful effects of this approach, which consists of invading geographical spaces by flooding Internet users with eminently strategic messages. On the basis of ethnographic observation, this research also attempts to shed light on the geopolitical and economic motives that make Africa a favorable terrain in the field of international information.

Keywords: Russia- Africa- Media-Data- Television -social networks

Introduction

En Afrique francophone, l'évolution des médias semble indiquée que ces derniers n'ont pas comme seul objectif, l'information des populations. À partir des indépendances par exemple, le paysage médiatique de l'Afrique francophone subissait les influences de la guerre froide. Durant cette période, (Lepri, 2010) relate que l'espace médiatique africain a servi de terrain d'affrontement entre les deux superpuissances de l'époque. C'est ainsi que l'Union soviétique et les États-Unis ont fait un usage intensif des médias de masse afin d'étendre au maximum leur zone d'influence. Ces pays se sont livré une véritable guerre d'images, d'idées, de propagande et de désinformation. Dès 1958, Radio Moscou procéda au lancement de ses émissions en langues française, anglaise et portugaise à destination du continent africain. Pour sa part, la BBC profita de la période des indépendances pour diffuser des programmes en langues africaines. Ces opérations furent exécutées en swahili, somali et haoussa. Ensuite, ce fut le tour des pays francophones de l'Afrique de recevoir en 1960, les programmes

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

en français du média britannique. Pendant ce temps, La Voice of America s'intéressait également au continent africain. Dès 1959, des programmes furent ainsi diffusés depuis l'Amérique à destination de l'Afrique. Dans un premier temps, cette diffusion s'effectua en anglais. Par la suite, des programmes en français de la VOA furent disponibles et ce fut ensuite le cas des émissions en swahili.

À travers sa volonté de s'adapter aux audiences africaines , (Browne,1975) souligne que Radio France Internationale verra le jour afin de se tourner vers un un nouveau pôle d'auditeurs. Pour sa part, (Castells, 2010) observe que les changements induits par la révolution numérique favorisent de nouvelles tentatives de rapprochement de ces médias envers leurs publics. C'est notamment le cas des médias russes sur le continent africain. En effet, bien que de réelles opportunités de diffusion existent sur le continent depuis 1990 ; (Tudesq, 1997) précise que de nouveaux marchés restent à conquérir par les médias. Au début de la guerre froide, l'URSS avait rapidement développé des moyens d'information en direction de l'Afrique. Profitant d'un long passé commun avec l'Afrique subsaharienne, la Russie intégra dans les programmes de Radio Moscou ou encore de Radio Paix et Progrès, des émissions destinées aux populations africaines.

Cependant, (Arkhangelskaya, 2013) observe que cette puissance médiatique perdra peu à peu en intensité. Par ailleurs (Arkhangelskaya, 2013) note que moins d'une décennie plus tard, les relations de la Russie avec la plupart des pays en développement ont quasiment été interrompues. Par la suite, la stratégie de désengagement de la Russie s'est poursuivie en Afrique. Pour certains observateurs, les difficultés économiques que rencontrait la Russie sur le plan interne avaient été exacerbées par les coûteuses relations que Moscou entretenait avec l'Afrique. Cet argument est partagé par (Karassin, 1993) au regard de la façon dont l'aide soviétique permettait de maintenir des régimes favorables à l'URSS.

Ce dernier note cependant que même si la Russie décida de se retirer d'Afrique, elle garda un attrait pour le continent noir. Pendant les années 1990 (Arkhangelskaya, 2013) remarque que les relations entre la Russie et l'Afrique subsaharienne se réduisent comme peau de chagrin. Cette situation va s'améliorer par la suite. Cette situation interviendra avec la mise en place d'une nouvelle politique de Moscou envers l'Afrique. Dès 1994, cette politique fut marquée par un recentrage sur les intérêts économiques. Dans cette nouvelle stratégie, les médias jouent un rôle central et éminemment stratégique. Depuis quelques années par exemple, RT et Sputnik ont noué des partenariats sur le continent. Ces partenariats incluent notamment la reprise de contenus avec de nombreux médias africains. En 2019, par exemple, la Radiotélévision nationale congolaise a signé un accord avec Sputnik. Cet

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

accord prend en compte un échange régulier de contenus en français et en anglais. C'est aussi le cas de la télévision érythréenne qui a fait de même avec Russia Today. En dehors de la reprise des programmes, les partenariats avec certains médias africains incluent aussi la formation de journalistes. Partant de constat, l'Afrique constitue d'une part un terrain idéal afin de cerner comment deux médias , craints pour leur usage des nouvelles technologies de l'information, se positionnent dans les champs médiatiques africains. Afin de mener cet exercice, nous faisons recours à l'observation ethnographique. Il s'agit d'une démarche empirique qui permet d'étudier des situations, des interactions ou encore des comportements individuels et collectifs. Comme le souligne (Laplantine, 2002), l'ethnographie renvoie au processus du voir autrement ainsi que du faire voir, c'est-à-dire du montrer cherchant à faire devenir audible et visible , ce qui était inaudible et invisible . Dans un contexte marqué par de nouvelles tendances, cette étude permet enfin d'examiner la manière dont ces deux diffuseurs russes tentent d'ancrer leur positionnement en Afrique en s'adaptant à l'évolution de l'environnement médiatique.

Sputnik : vecteur de la puissance Russe

Vers la fin des années 1930, (Lepri, 2010) relève que le moyen le plus adéquat pour approcher les masses était la radio. Durant cette époque, la radio internationale soviétique était diffusée dans 13 langues du monde, à l'exception de l'Afrique. Quelques décennies plus tard, les populations africaines furent en mesure de capter les ondes russes. Pour (Eroy-Ey, 2020) ce succès, est lié à deux facteurs. D'une part, il pointe du doigt la progression rapide du taux d'équipement en poste transistor durant ces années. D'autre part, il relie cette percée à la puissance des transmetteurs de radiodiffusion. C'est pour cette raison que (Skorov, 1960) déclare que l'URSS fut ainsi le premier pays au monde à commencer à émettre en langues étrangères. Cette situation laissait par ailleurs entrevoir une victoire dans le rapport international des forces de l'époque. Malgré des débuts prometteurs, la puissance médiatique de la Russie va toutefois s'émousser par la suite.

En effet, (Lévesque, 2021) observe que les relations de la Russie avec la plupart des pays africains seront quasiment interrompues au tournant des années quatre-vingt-dix. Comme (Valkenier, 1983), plusieurs auteurs estiment que durant les années quatre-vingt, les dirigeants soviétiques étaient inquiets du coût lié au maintien de leur aide économique et militaire à des alliés instables. À partir de la fin 2014, la relance de la politique russe en Afrique, connaîtra cependant un regain d'intérêt. Une décennie plus tôt, l'État russe en a profité pour faire de la diplomatie médiatique, un maillon essentiel de sa nouvelle politique étrangère. C'est dans ce contexte, que l'agence Sputnik est arrivée sur la scène internationale.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Pour la Russie, les enjeux qui gravitent autour du lancement de l'agence Sputnik sont grands. De fait, celle-ci fait partie d'un ambitieux dispositif médiatique et représente un outil multimédia novateur. Par exemple, le nom de l'agence multimédia a été choisi en référence au programme spatial soviétique du même nom. Ce dernier avait fait la renommée de l'URSS à la fin des années 1950. À l'époque, les Russes étaient entrés dans l'histoire avec ce satellite terrestre. En-dehors de ce constat, Sputnik représente une marque bien connue à l'international. En raison du succès rencontré par l'URSS pendant la conquête spatiale, le nom Sputnik apparaît donc comme un label. L'intérêt de l'utilisation de la référence Sputnik se comprend dans la mesure où il peut servir de tremplin auprès des audiences étrangères. Depuis 2014, Sputnik offre ainsi une panoplie de services divers et variés. Ces services incluent par exemple des fils d'actualités, des sites d'information, du contenus pour les réseaux sociaux et des applications mobiles. Dans la palette des services qui sont offerts par l'agence Sputnik, on retrouve également une radio et des centres de presse multimédia. De par son mode de fonctionnement, l'agence propose une couverture quotidienne et extensive de l'actualité politique, économique, sportive et culturelle internationale. Émettant dans plus de trente langues, Sputnik se retrouve selon (Limonier, 2018) au cœur d'un véritable réseau d'influence à destination de l'Afrique. Pour parvenir à cette conclusion, le chercheur a établi une base de données. Celle-ci consigne l'ensemble des pages ayant repris une partie ou l'intégralité des nombreux articles produits par Sputnik entre le 1er janvier et le 1er août 2018 au sujet de l'Afrique. Dans le cadre de cette étude (Limonier, 2018) a eu recours à la plus grande base de données publiques d'indexation à savoir Google. Toutefois, il importe de préciser que si Google dispose d'une gamme d'indexation assez large, ses robots sont juste en mesure de ne parcourir que 20 à 30 % des pages existantes sur le web. De fait, il n'est pas toujours possible d'indexer les 70 % restantes, car il arrive qu'elles soient inaccessibles. Quand ces pages ne sont pas accessibles, il arrive que les administrateurs de ces pages refusent tout référencement susceptibles de les prendre en compte. En tenant compte de ces limites, il ressort de la recherche effectuée par (Limonier, 2018) que Sputnik est relayé au total par trois mille cinq cent soixante-neuf sites à travers le continent africain. Ces relais sont constitués entre autres des plateformes d'intermédiation. Cependant (Limonier, 2018) souligne que les réseaux sociaux à savoir Facebook, Twitter, YouTube ainsi que Pinterest constituent la quasi-totalité des plateformes d'intermédiation utilisées dans le cadre de son travail de recherche. La seconde catégorie de sites présents dans cette étude est celle des agrégateurs de contenu. Dans cette branche d'activité (Limonier, 2018) y classe des plateformes telles que le site africain.info. Ce dernier diffuse une revue de presse de l'actualité africaine. Sur la

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

plateforme africain.info, (Limonier, 2018) souligne que le partage de contenus produits par le média Sputnik se fait de manière automatique. Dans ces conditions, il estime qu'il peut s'avérer difficile de se prononcer au sujet des publications du site africain.info. Au sujet des agrégateurs de contenu, (Limonier, 2018) est parvenu à repérer un autre site du nom de niooz.fr. Des investigations conduites, il ressort que le site niooz.fr est surtout consulté en Afrique depuis la RDC, l'Algérie et le Burkina Faso. À la différence de la plateforme africain.info, le site niooz.fr fonctionne cependant comme un agrégateur classique, mais son fonctionnement est piloté par des algorithmes.

À travers son enquête (Limonier, 2018) observe aussi l'appui des sites institués dans le rayonnement de Sputnik en Afrique. La catégorie des sites institués renvoie à des institutions clairement identifiées, sous la forme d'une personne morale. Cependant (Limonier, 2018) nuance son constat en précisant que les sites institués qui relaient Sputnik se répartissent en deux sous-catégories. Au sein de la première sous-catégorie, on retrouve des sites institués généralistes. Il s'agit de sites qui reprennent des contenus issus de sources politiques très variées. Quant à la deuxième sous-catégorie, elle se compose de sites que (Limonier, 2018) qualifie de militants. L'auteur répertorie dans cette sous-catégorie, les activités d'Afrique média TV. Il s'agit d'une chaîne de télévision panafricaine. Généraliste dans l'édition de ses programmes, cette chaîne basée au Cameroun, touche à plusieurs thématiques à savoir la politique, l'économie, la santé, la gouvernance, la culture, la technologie et les faits de société. En-dehors, d'Afrique média TV, (Limonier, 2018) classe également le site africa24.info dans la catégorie des sites militants. Toujours selon (Limonier, 2018), les consultations de ce site proviennent surtout de la Guinée et de la Côte d'Ivoire. Le site africa24.info a également la particularité d'être suivi par plus de 121 000 personnes sur Facebook. Toutes ces informations permettent à (Limonier, 2018) de conclure que Sputnik bénéficie d'une réelle force de pénétration dans le champ médiatique africain. Dans son étude, (Limonier, 2018) expose les blogs comme la dernière catégorie de sites qui servent de ressorts à Sputnik en Afrique. Au sujet des blogs, il précise qu'il s'agit de pages gérées de manière plus ou moins formelle par une ou plusieurs personnes. Le plus souvent, ces blogs sont hébergés sur des plateformes telles que Wordpress ou Overblog. C'est pour cette raison que (Limonier, 2018) explique que ces blogs constituent un écosystème qui favorise la reprise d'articles de Sputnik de manière militante. Concernant les blogs analysés, le chercheur en cyber-stratégie, note que ces derniers servent parfois à soutenir une cause ou une idée défendue par les administrateurs de ces pages. Bien souvent, ces administrateurs sont des personnes physiques politiquement engagées. Dans la guerre de l'information que les chaînes de télévision

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

internationales se livrent, Sputnik bénéficie de l'appui des différents supports médiatiques ci-dessus évoqués. Au regard des chiffres avancés par (Limonier, 2018) , il ne serait pas superflu d'avancer que la stratégie d'implantation de Sputnik en Afrique commence à porter ses fruits. Toutefois, depuis l'invasion de l'Ukraine par la Russie, le diffuseur satellite sud-africain Multichoice a annoncé la suspension de la diffusion sur ses antennes, à la suite des sanctions imposées par l'Union européenne.

Russia Today: un intérêt grandissant auprès des internautes d'Afrique

À l'instar de Sputnik, la filiale française de la chaîne qui s'appelait par le passé Russia Today, est présente depuis quelques années dans l'espace médiatique africain. En parallèle à son évolution en Afrique, cette chaîne semble nourrir de grandes ambitions et tente de se positionner parmi les grands acteurs de l'espace médiatique africain. En effet, RT est déjà disponible sur le satellite à travers sa présence dans le bouquet Yahlive. En dehors du satellite, la chaîne d'information russe, est aussi accessible depuis quelques années aux abonnés de Canal+. Disponible dans plus de quarante pays sur le continent africain, les bouquets de télévision payante de Canal+ Horizons comptent plusieurs millions d'abonnés. Si la réception par satellite ou par câble est possible pour de nombreux milliers d'Africains, RT revendique aussi une audience sur le net. Au mois de juillet 2020, (Gérard et al., 2020) note que RT France était suivie par 1,14 million d'utilisateurs sur Facebook. Sur Twitter , (Gérard et al., 2020) font savoir que la chaîne était suivie par 160 000 usagers et sur YouTube, ce nombre s'élevait à 679 000 personnes. Sur YouTube, en dehors du nombre d'abonnés, l'audience peut également être mesurée en termes de nombre de vues totales des vidéos. Sur ce segment d'activités, (Gérard et al., 2020) expliquent que RT France est suivi par plus de 291,5 millions de personnes. Cependant (Gérard et al., 2020) insistent sur l'importance de prendre le nombre de vues avec des pincettes. En effet, les auteurs précisent qu'il s'agit d'une donnée sensible. À travers diverses techniques, dont l'achat de bots par exemple, ils expliquent par exemple que certains fournisseurs de services parviennent à trafiquer leur nombre de vues sur YouTube. Par ailleurs, si la chaîne d'information russe tente de se démarquer en proposant des vérités alternatives à son audience (Crilley et al., 2022) notent que ce média utilise certaines techniques à des fins stratégiques. Parmi celles-ci, certaines sont élaborées afin d'attirer un maximum d'internautes sur les réseaux sociaux. Au nombre des techniques les plus efficaces, on retrouve la diffusion de vidéos en direct. En dehors du direct, RT France publie plusieurs dizaines d'articles en format texte et vidéo sur Facebook. Sur YouTube, RT France propose également un direct en continu. Toujours sur Youtube, une vingtaine de vidéos sont postées en moyenne entre 8 h à 23

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

h. En général, une grande partie des vidéos proposées sont des extraits ou des rediffusions d'émissions diffusées à l'antenne de RT.

Sur les réseaux sociaux, (Chardon, 2019) souligne que RT France est également relayée sur de pages anonymes telles que In The Now ou Soap Box. Sur Facebook par exemple, plusieurs millions d'abonnés suivent In the Now. Il s'agit d'une page spécialisée dans les vidéos virales en ligne. Sur un continent tel que l'Afrique, qui se démarque par sa démographie, l'utilisation des réseaux sociaux semble désigner une cible apparente. Au regard des tranches d'âges connectés sur les réseaux sociaux en Afrique, la tranche des 18-35 ans pourrait être la cible probable de RT. Cependant, il faut préciser que le facteur comportemental sur lequel repose la diffusion d'une vidéo auprès d'un internaute reste complexe. De fait, la complexité de cet acte est soumis à une multitude d'enjeux techniques. Ces enjeux sont en partie liés au comportement des internautes.

Ce comportement prend en compte par exemple, le type de comptes suivis, ou encore les interactions avec les publications. Sur la base de ce constat (Hong et Davison, 2010) expliquent que le choix d'afficher des contenus susceptibles de susciter le plus d'intérêt auprès des internautes tient généralement compte de ces différents paramètres. En Afrique où, la télévision occupe une part importante de la vie quotidienne, cette stratégie semble payer. Entre novembre 2017 et janvier 2018 (Limonier, 2018) montre que la page Facebook de RT France a connu une augmentation significative du nombre de ses abonnés. En moins de deux mois, la page est passée d'environ 500 000 à plus de 850 000 likes. Si ces chiffres montrent que l'audience de la chaîne a quasiment doublé en quelques mois, c'est en Afrique que se trouvent les raisons de ce succès. De fait, la majorité de ces abonnés provient de plusieurs pays francophones du Maghreb et d'Afrique subsaharienne. En outre (Limonier, 2018) précise que la page Facebook de RT en français a ainsi engrangé près de trente mille abonnés en Algérie, dix mille au Maroc, neuf mille en Tunisie, cinq mille au Mali, sans compter des milliers d'autres au Sénégal, Cameroun, Burkina Faso ou encore en Côte d'Ivoire.

À travers une recherche sur les relais de RT en Afrique (Limonier, 2018) est également parvenu à un autre constat. Au terme de sa recherche, il parvient à la conclusion que les relais de RT sont moins nombreux que ceux de Sputnik sur le continent. Cependant , (Limonier, 2018) affirme que ces résultats ne sont pas surprenants. Il estime de surcroit que cette situation peut se comprendre dans la mesure où, les deux médias ont des lignes éditoriales différentes. Tandis que RT s'affiche comme un média utilisant les codes des grandes agences de presse internationales, Sputnik opte pour une ligne éditoriale plus militante. Ce mode opératoire permet à (Limonier, 2018) de déduire que RT produit des contenus moins sensationnalistes que Sputnik. Par

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

conséquent, cette dernière serait moins susceptible d'être reprise par des blogs ou sites qui n'entretiennent aucun rapport avec les positions défendues par la Russie sur la scène internationale.

Le chercheur découvre aussi qu' à travers son fonctionnement, Sputnik se servirait beaucoup plus des techniques d'optimisation de visibilité que RT. À ce sujet, il fait référence au clickbait qui peut se révéler très utile sur les réseaux sociaux. Par exemple, ces techniques favorisent l'apparition de nouveaux usages. Autrefois (Newcomb et Hirsch, 1983) rappellent que la télévision représentait un cadre culturel capable de fonctionner comme un espace unique et d'attirer un large public. À l'heure du web et des réseaux connectés, cette tendance a cependant beaucoup évolué. En effet, la réception de la télévision s'inscrit désormais dans une pluralité de niches ou de forums divers et variés. Selon (Hennion , 2009), nous, assistons désormais à des gestes inscrits dans une relation qui se prolonge avec les technologies. À travers ces gestes, les publics arrivent désormais à intégrer des communautés actives en ligne. Lorsqu'ils rejoignent une conversation par exemple sur les réseaux sociaux, les internautes, font partie intégrante d'une communauté. Par ailleurs, quand ils partagent des opinions et des émotions liées aux programmes diffusés en ligne, leurs actions sont en quelque sorte amplifiées. En effet, les interfaces du web contribuent à cartographier ce mouvement, malgré son évolution constante. De façon pratique, ces actions bénéficient d'une visibilité augmentée et de la possibilité de rejoindre un nombre étendu de personnes qui s'intéressent au sujet discuté. Ces usages représentent de nouvelles formes de consommation de la télévision qui peuvent représenter une abondante quantité de précieuses informations sur les réseaux sociaux. Grâce au numérique, des espaces de discussion en réseau apparaissent ainsi et les téléspectateurs ont la possibilité de signaler leur présence au sein de groupes ou communautés en ligne. À travers ces habitudes, les consommateurs des émissions diffusées en ligne sèment dans les espaces d'Internet, de nombreuses traces. Ces traces, marquées d'opinions ou de critiques, vont ensuite créer des territoires de données en ligne. Pour les concepteurs et diffuseurs de contenus médiatiques, ces traces peuvent - être d'une grande utilité. À titre d'exemple, ces traces, laissées en ligne, peuvent permettre de proposer des contenus adaptés à l'offre médiatique disponible dans une région ou un continent. Sur un autre plan, ces traces peuvent également permettre de cibler certaines spécificités qui pourraient servir de ressort au déploiement d'activités lucratives dans le monde réel ou virtuel.

Face aux autres chaînes d'informations, et dans un contexte de reconfigurations médiatiques, RT pourrait bénéficier d'un avantage concurrentiel grâce à son influence en ligne. En d'autres mots, la stratégie médiatique de RT pourrait s'appuyer sur le développement d'un réseau d'alliances en quête de nouvelles opportunités en Afrique. De plus, cette

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

stratégie médiatique pourrait renforcer indirectement les intérêts géopolitiques de la Russie en Afrique.

En tant que symbole emblématique des médias de masse, la télévision offre depuis toujours une distribution rapide de programmes à une audience hétérogène. En devenant numérique, ce média bénéficie cependant d'un certain nombre d'avantages intrinsèques aux nouvelles technologies. En effet, de grandes quantités de données sont désormais recueillies auprès de sources médiatiques. Cette collecte s'effectue par exemple, à partir des activités quotidiennes telles que la consommation de médias ou par le biais de l'engagement sur les médias sociaux. À l'instar de (Agrawal et Swami, 1993) certains chercheurs estiment que ces données peuvent fournir des informations plus précises et plus nuancées sur le comportement humain.

Tentative de minage du net Africain par le techno - pouvoir Russe

En république du Bénin et ailleurs en Afrique, le phénomène de la réception des chaînes internationales ne cesse de prendre de nouvelles dimensions. Dans un contexte marqué par la libéralisation de l'espace médiatique, on observe ainsi la prolifération de nombreux canaux de communication et supports d'information électronique. Ce constat se fait également en Algérie où, RT envisage de produire un show télévisé qui sera spécifiquement destiné aux téléspectateurs locaux. Dans des pays comme le Bénin ou l'Algérie, de nouveaux médias ont fait leur apparition dans le paysage audiovisuel en proposant diverses sortes de contenus.

De plus, ces pays connaissent l'essor de sites de partages de vidéos tels que Youtube. On note également le fait que les chaînes internationales telles que la Voix de l'Amérique, Radio Chine internationale ou encore BBC Afrique disposent de bureaux en Afrique et produisent déjà leurs émissions à partir du continent. De son côté, RT cherche aussi à rejoindre ce mouvement, en créant un bureau en Afrique francophone. Autant qu'ils sont, ces médias évoluent désormais dans un environnement où la technologie permet d'entrevoir l'apparition de nouveaux marchés. Or en Afrique, certains travaux (Waverman, Meschi et Fuss, 2005) popularisent l'idée selon laquelle, l'utilisation du téléphone mobile a un impact sur les performances économiques des pays africains. Dans le même temps, le secteur de la téléphonie et celui des données personnelles sont des domaines très mouvants. Dans le secteur médiatique (Sadowski, 2019) remarque que l'analyse de ces données ouvre de nouvelles perspectives économiques et politiques. Pour sa part(Hokka, 2018) estime que pour les chaînes traditionnelles de télévision, la collaboration avec les plateformes numériques représente un moyen innovant pour accéder à de nouveaux publics. D'autres auteurs tels que (Gillespie, 2010 ; Helmond, 2015) estiment cependant que ce tournant pourrait favoriser la domination des plateformes

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

commerciales telles que Google, YouTube ou Facebook. Dans un secteur médiatique forte,ent compétitif, les conflits entre divers acteurs ne manquent cependant pas . À titre d'exemple, YouTube a mis fin à la diffusion de la filiale allemande de RT, dans le cadre d'un bras de fer. Cette décision fut prise dans le cadre d'une action visant de prétendues fausses informations liées au coronavirus. Il convient toutefois de souligner que ce n'est pas la première fois que YouTube suspend une chaîne du groupe RT. La plateforme vidéo avait fait l'objet de critiques pour un cas similaire. Il s'agissait d'une interdiction temporaire qui avait frappé RT Arabic, suivi par quelque 5,5 millions d'abonnés en ligne. Par la suite, Youtube déclara que la mesure de suspension a été prise après les signalements d'un internaute. Ces signalements concernaient plusieurs lacunes dans la fourniture du service de RT Arabic. Ces quelques exemples nous permettent de comprendre aussi l'importance de la guerre autour des données issues du secteur de la vidéo en ligne. En effet, à l'image de RT, de nombreuses chaînes de télévision surfent sur la vague de la vidéo en ligne, espérant tirer leur épingle du jeu dans ce secteur d'activité. Il convient de citer par exemple, la plateforme de vidéo à la demande Netflix. Depuis peu, le géant Américain de la vidéo propose ses services sur le continent africain. Il est ainsi possible pour ses abonnés de profiter d'une offre globale avec des émissions TV et des films.

Avec un accès illimité à de grandes quantités de contenus comme les séries télé et les films, les abonnés de ce pionnier du service de vidéos, peuvent visionner des millions d'heures de contenus en ligne. Pour parvenir à de tels résultats, (Akrich, 1998 ; Jauréguiberry & Proulx, 2011) soulignent que la plateforme de vidéo nourrie ses algorithmes avec le profil d'un usager-idéal. Toutefois, ce profil correspond aux attentes du modèle économique de ce géant Américain de la vidéo. Le profil d'un usager-idéal intègre aussi les actions qui sont attendues chez le téléspectateur. Selon (Woolgar, 1991), les concepteurs du système algorithmique sont les chevilles ouvrières du processus qui est mis en place. En dehors des algorithmes, d'autres dispositifs permettent aussi aux médias tels que RT, de voir leurs informations amplifiées à grande échelle. Ces dispositifs peuvent prendre la forme de réseau plus ou moins dense de robots informatiques. Une fois qu'ils sont activés, ces robots sont capables d'agir de façon anonyme sur les réseaux sociaux. Il convient de préciser que ces dispositifs produisent une influence latente sur les internautes. L'influence de ces messages s'exercerait sur la façon dont les internautes perçoivent le monde et sur la structuration de leurs pensées. Ces méthodes, élaborées par les médias, visent à mettre en place une communication ciblée auprès d'un public défini, afin d'impacter sa façon de penser ou son comportement. Grâce à ce type de procédé, il est possible d'utiliser des données d'audience détaillées afin de personnaliser les services de diffusion télévisée.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Dans le cadre de ce processus, certains observateurs estiment que la personnalisation guidée par les données peut également être utilisée afin d'influer sur la diversité des publics. S'il est cependant possible que les médias utilisent des données afin d'affiner leurs offres commerciales, de nombreux dérapages sociétaux sont à craindre. À titre d'exemple, la mise à profit des données met en danger le rôle fondamental des médias dans la société à savoir la solidarité et l'esprit civique (Andrejevic, 2020 ; Couldry, 2012 ; Nikunen, 2019).

De fait, le temps où les réseaux sociaux ne monétisaient pas leur audience est révolu. De nos jours, les réseaux sociaux ne sont plus un terrain vierge en ce qui concerne les pratiques commerciales. Ces plateformes sont désormais engagées dans une course à la monétisation de la publicité. Aux quatre coins de l'Afrique, les annonceurs peuvent ainsi y acheter des espaces publicitaires. Dans ce nouveau marché, il existe aussi une importance différence par rapport au fonctionnement de la télévision traditionnelle. En effet, il importe de savoir ce à quoi les gens s'intéressent à chaque instant. Ce contrôle permanent permet de pouvoir leur mettre sous les yeux, les offres d'annonceurs prêts à payer pour se trouver au bon endroit et au bon moment. Aux dires de (Turow, 2011 ; Zuboff, 2019) , cette pratique fait cependant craindre des risques liés à la surveillance des internautes. De plus (Mann & Matzner, 2019) déplorent un fait regrettable. Selon eux, cette sphère d'activités est susceptible de créer de nouvelles formes de marginalisation et de discrimination aux seins des téléspectateurs.

Aux regards de ces différentes menaces, il convient aussi de se demander si cette industrie naissante parviendra à respecter l'internaute et sa vie privée. Compte tenu des enjeux de pouvoir qui sont liés à ces données, une autre question est de savoir si cette industrie restera obsédée par cette ruée vers l'or de la donnée. À une époque où, des scandales de grande ampleur entachent régulièrement le paysage numérique,(Babinet, 2014) estime que la donnée fait figure de pétrole du 21ème siècle. Dans un tel contexte, les quelques questionnements ci-dessus évoqués, méritent une attention particulière.

Conclusion

En Afrique, la question de la relation entre les médias et les populations est de plus en plus souvent mise sur la table. Sur le continent, l' influence exercée par les chaînes de télévision internationales en Afrique francophone est aujourd'hui un fait avéré. Dans la pratique, ces chaînes occupent une place centrale dans le paysage médiatique des sociétés africaines contemporaines. Si ces chaînes produisent en quantité industrielle des émissions capables de franchir les barrières linguistiques africaines, cette production numérique pose

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

un certains nombres de problèmes. Soucieuses de s'implanter sur le continent et de toucher divers publics, ces chaînes diffusent désormais du contenu audiovisuel par l'intermédiaire des réseaux sociaux. Tout en soulignant l'importance de la consommation de ces nouveaux médias, ce travail a permis de mettre en exergue la compétition que suscite le développement de la télévision numérique.

Dans ce cadre, notre étude s'est appuyée sur les exemples de RT et Sputnik. L'objectif visé est de montrer qu'au moment où, l'Afrique amorce son décollage numérique, des acteurs tel que la Russie, cherchent à s'y implanter. C'est dans ce contexte que la Russie tente, de mobiliser de nouveau ses réseaux de l'époque de la guerre froide. À long terme, cette stratégie pourrait permettre de convertir d'anciennes affinités idéologiques en flux d'affaires. Sur un continent où les populations sont de plus en plus nombreuses à opter pour les avancées numériques, notamment via le portable, le développement de la télévision numérique est souhaitable pour quantité de raisons. Dans l'ensemble, ce travail a permis de mettre en évidence la dynamique à l'œuvre à travers l'orientation des chaînes RT et Sputnik vers l'Afrique. Ce travail montre également que fort de certains atouts, les médias RT et Sputnik pourraient jouer bien plus qu'un simple rôle de fournisseur d'informations en Afrique. Par conséquent, le tableau que nous avons esquissé à travers cette réflexion, est un appel à la prudence face à l'exploitation abusive des données personnelles.

References:

1. Agrawal, R. et Swami, A. (1993). Mining Associations Between Sets of Items in Massive Database, p.375
2. Akrich, M. (2006). La construction d'un système sociotechnique. Esquisse pour une anthropologie des technique. Dans M. Akrich, M. Callon, & B. Latour (Éd.), sociologie de la traduction : textes fondateurs . Paris: École des mines de Paris,p.480
3. Andrejevic, M. (2020). Automated media. Routledge,p.350
4. Arkhangelskaya, A. (2013). Le retour de Moscou en Afrique subsaharienne : Entre héritage soviétique, multilatéralisme et activisme politique. Afrique contemporaine,pp 35- 50
5. Babinet, G. (2014). L'ère numérique, un nouvel âge de l'humanité. Paris : Le Passeur,p.410
6. Browne, D. (1974). International Broadcasting to African Audiences.Temple University Press,p.290
7. Chardon, C. (2019). Le soft power russe 2.0 : les stratégies de communication de RT en France et au Royaume-Uni. Sciences de l'information et de la communication,p.220

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

8. Castells , M. (2010). The power of identity. Malden, Mass : Blackwell,p.340
9. Coli ,G., Guilhem, M., et Loqman S. (2020). RT, Sputnik et le mouvement des Gilets jaunes : cartographie des communautés politiques sur Twitter . L'Espace Politique,pp.75-90
10. Couldry, N. (2012). Media, society, world: Social theory and digital media practice. Polity Press, p.405
11. Gillespie, T. (2010). The politics of platforms. New Media & Society,p.360
12. Helmond, A. (2015). The platformization of the web: Making web data platform ready. Social Media + Society (July–December), pp.110- 127
13. Hennion, A.(2009) . Réflexivités. L'activité de l'amateur, Abstract . Réseaux, n° 153, pp.40-65
14. Hokka, J. (2017). Making public service under social media logics. International Journal of Digital Television,p.330
15. Hokka, J. (2018). Towards nuanced universality: Developing a concept bible for public service online news pro-duction. European Journal of Communication, 34,pp.85-99
16. Hong L., et Davison, B. (2010). Empirical study of topic modeling in Twitter . Proceedings of the First Workshop on Social Media Analytics.p.425
17. Jauréguiberry F., et Proulx , S.(2011). Usages et enjeux des technologies de communication. Toulouse, Eres,p.325
18. Grigori , K. (1993). Russia and Africa . International Affairs ,p.354
19. Laplantine F. (2002), La Description ethnographique, Paris, Éditions Nathan,p.115
20. Lepri, C. (2010). De l'usage des médias à des fins de propagande pendant la guerre froide. Revue internationale et stratégique,pp.17-30
21. Lévesque, J. (2021). La nouvelle puissance russe en Afrique: atavisme des ambitions soviétiques, néo-impérialisme ou pragmatisme ? Diplomatie ,pp.60-80
22. Limonier, K . (2018) Diffusion de l'Information Russe en Afrique .Note de recherche numéro 66, Institut de Recherche Stratégique de l'Ecole Militaire,pp.16-34
23. Mann M., et Matzner, T.(2019). Challenging algorithmic profiling: The limits of data protection and anti-discrimination in responding to emergent discrimination. Big Data & Society,pp.201-222
24. Newcomb H., et Paul, H.(1983). Television as a cultural forum: Implications for research .Quarterly Review of Film Studies,p.360
25. Nikunen, K. (2019). Media solidarities: Emotions, power and justice in the digital age. Sage,p.300

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

26. Rhys, C., Marie, G., Bertie, V., et Alistair W.(2022) . Understanding RT's Audiences: Exposure Not Endorsement for Twitter Followers of Russian State-Sponsored Media .The International Journal Of Press/Politics , Vol 27, Issue 1,pp.130-165
27. Roth-Ey, K. (2020). How Do You Listen to Radio Moscow? Moscow's Broadcasters,Third World Listeners, and the Space of the Airwaves in the Cold War. The Slavonic and East European Review,p.273
28. Sadowski, J. (2019). When data is capital: Datafication, accumulation, and extraction. Big Data & Society,pp.110-130
29. Skorov, G. (1960). L'aide économique et technique de l'URSS aux pays sous-developpés. Revue Tiers Monde,pp.94-120
30. Tudesq, A.-J.(2002). L'Afrique parle, l'Afrique écoute. Paris, Karthala,p.391
31. Turow, J. (2011). The daily you: How the new advertising industry is defining your identity and your worth. Yale University Press,p.472
32. Valkenier, E. (1983). The Soviet Union and the Third World: An Economic Bind. New York: Praeger,p.416
33. Waverman, l., Meschi, M., et Fuss M. (2005). The Impact of Telecoms on Economic Growth in Developing Countries, Africa: The Impact of Mobile Phones. Vodafone Policy Paper Series,pp.14-37
34. Woolgar, S. (1991). Configuring the user: the case of usability trials, A Sociology of Monsters: Essays on Power, Technology and Domination London: Routlege,p.407
35. Zuboff, S. (2019). The age of surveillance capitalism: The fight for a human future at the new frontier of power. Profile Books, p.445

ESJ Social Sciences

Teachers' Perception of the Moroccan ICT Portal of the Ministry of Education

Youssra El Janous, PhD student
Interdisciplinary Laboratory of Research in Pedagogical Engineering (LIRIP), Abdelmalek Essaadi University, Tetouan - Morocco
Mohamed Laafou
Professor, Interdisciplinary Laboratory of Research in Pedagogical Engineering , Abdelmalek Essaadi University, Tetouan - Morocco
El Hassan El-Hassouny
Professor, Higher Institute of Nursing Professions and Health Technique Tetouan - Morocco
Mourad Madrane
Professor, Interdisciplinary Laboratory of Research in Pedagogical Engineering, Abdelmalek Essaadi University, Tetouan – Morocco

Doi:10.19044/esj.2022.v18n12p155

Submitted: 02 March 2022
Accepted: 12 April 2022
Published: 30 April 2022

Copyright 2022 Author(s)
Under Creative Commons BY-NC-ND
4.0 OPEN ACCESS

Cite As:
El Janous Y., Laafou M., El-Hassouny E.H. & Madrane M. (2022). *Teachers' Perception of the Moroccan ICT Portal of the Ministry of Education*. European Scientific Journal, ESJ, 18 (12), 155. https://doi.org/10.19044/esj.2022.v18n12p155

Abstract

School failure is a difficult experience for students and their families. The identified causes of such failures however vary. While some are related to the educational system, others are extrinsic and related to the family or society. This paper focuses on promoting the notion of equity in education since there is a close relationship between equality of opportunity and the reduction of school failure and drop-out. Oftentimes, students from disadvantaged social backgrounds have less access to teaching aids, which results to the highest rate of school failure. The results interpret two things: the impact of the integration of the ICT in education through the Ministry of National Education and Vocational Training and the use of teaching aids in the performance of students. Through the responses of students and teachers to the questionnaire, two main factors of school failure were distinguished. The first factor is specific to the school such as teaching and evaluation

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

methods, the school climate, the content of the curricula taught, and the difficult relationship between teacher and student, while the second factor is identified outside the school such as the students' standard of living or the lack of support at home.

Keywords: School failure, education system, ICT, educational means, digital resources

I. Introduction

The term “school failure” is a recent notion. In France, in the middle of the twentieth century, few students reached a longer and more advanced level of study, while a larger number of students went to school only to acquire basic knowledge like reading, writing, and counting (Chauveau & Rogavas-Chauveau, 1995).

However, the galloping socio-economic change and the unbridled urbanization, as well as the appearance of more technical jobs, made schooling compulsory for the majority of the population from 1959 onwards, especially since the discourse of the public authorities focused more and more on the role of the school in correlation with economic development.

As a result, a growing number of students found themselves on the school benches, thereby revealing school failure. According to Philippe Perrenoud, a good number of them found themselves "gathered and compared in view of a selection at the entrance to secondary school" (Perrenoud, 1995), to the pedagogy at the school of differences, and most of them did not succeed in the passage from primary to secondary school.

Although it seemed normal that there were intelligent students who succeeded in their studies and other unintelligent ones who failed, some humanists and pedagogues like Louis Legrand looked into the heterogeneity of the school environment and tried to elaborate on new pedagogical methods to offer all students the same chances to succeed at school (Legrand, 1994).
However, a significant quote from Jean-Jacques AYME work titled “Laïcité - École laïque” was affirmed by Pierre Bourdieu in 1966: "For the most favored to be favored and the most disadvantaged to be disadvantaged, it is necessary and sufficient for the school to ignore, in the content of the teaching transmitted, in the methods and techniques of transmission and in the criteria of judgment, the cultural inequalities between the children of the different social classes" (Ayme, 2015).

According to him, it is the disregard of indifferences between individuals that creates the differences as a final result.

In the same context, a study was carried out by Aliette Fuxet under the title "school failure and differentiated pedagogy"(Fuxet, 2004).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

In 1975, the establishment of a single college was accompanied by the advent of differentiated pedagogy based on the work of Louis Legrand (Legrand, 1994) in junior school. It was mainly a question of making the transition from mass teaching to democratization and individualization of teaching on a case-by-case basis, which led to the establishment of level groups.

Thus, in 1989, the foundation of equal opportunities in the education system was officially promulgated through the Orientation Law in France. According to this law, teachers are required to take into consideration the learning pace of each student in their practice in order to bring 80% of students to the level of the baccalaureate.

In the middle of the 90s, France recorded very high unemployment rates. According to Gérard Chauveau, the notion of school failure affects the educational system in its entirety, which no longer ensures one hundred percent integration into the world of work. He opined that the more the requirements of the educational system increase, the more the school failure is placed on a higher level (Chauveau, 1996).

Context/Issue

In Morocco, the issue of school failure has recently reached a worrying level. The latest reforms of the education system have enabled the students to pass their school year regardless of the knowledge and skills they have acquired. Certainly, important progress has been made in reducing the rate of academic failure in Moroccan schools. However, there are many disillusions, especially in the way teachers and students perceive this problem.

General Objective

The objective of this study aims to explore the perception of teachers and students so as to identify the causes of school failure. The province of Ouazzane is used as a case study.

1. Materials and methods

In this paper, the validity of the hypotheses will be examined based on an in-depth analysis of the questionnaire aimed at exploring the causes of school failure.

Research Methodology

Choice of Tools

One of the steps in any research process is questioning. For this reason, a questionnaire was administered in order to verify the validity of the hypotheses that were extracted from the analysis of the databases studied. The

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

choice of using a questionnaire as a methodological tool for the research was intended to:

Provide qualitative responses.
Facilitate access to information.
Have a large number of people in a relatively short period of time.
To be completed anonymously and at the person's own pace without feeling any external pressure or interference from the interviewer.

Target Audience

The questionnaires were administered to 1000 teachers of secondary college and qualifying education who all belong to the Provincial Directorate of Ouazzane, while 100 college students belong to the different colleges of the province.

The Questions in the Questionnaire

This questionnaire is composed of the following 6 questions:

- Does the use of teaching aids (video projector, computer, interactive board, etc.) improve the student's level of learning?
- Do you use the portal of the Ministry of Education for the integration of ICT in education?
- Do you integrate ICT into your teaching process?
- Do you know the digital resources that are provided by the Ministry of Education?
- Have you attended any training courses organized by the Ministry?
- What type of training do you prefer?

Data Processing

The questionnaires were analyzed anonymously. All the information collected was copied onto a computer format in order to process and analyze it with Excel software. Using this software, the results of the questions were translated as follows:

- Yes / No: in the form of a pie chart.
- Closed with multiple choices: in the form of a histogram graph.

II. Results and Discussion

Presentation and Analysis of Results

Information and Communication Technologies for Education (ICT in education)

The questions in this axis validate or invalidate the hypotheses that determine the role of information and communication technology in education for academic success. This axis consists of 6 questions:

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

1. Does the use of teaching aids improve the student's level of acquisition?
2. Do you use the portal of the Ministry of National Education (www.taalimtice.ma) for the integration of ICT in education?
3. Do you integrate ICT into the teaching process?
4. Do you know the digital resources provided by the Ministry of National Education and Vocational Training?
5. Do you Follow-up training courses organized by the Ministry?
6. What type of training is preferred by teachers?

Question 1: Does the use of teaching aids (video projector, computer, interactive board, etc.) improve the level of acquisition of the student?

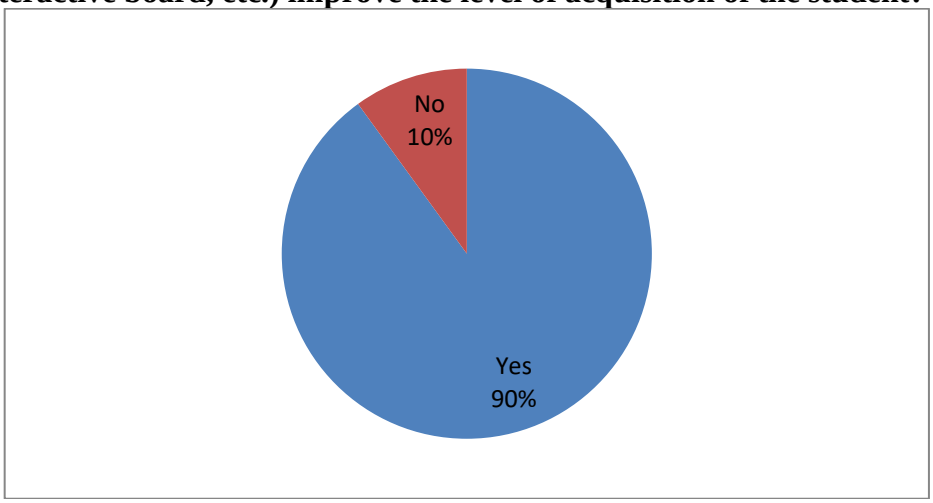


Figure 1. Teaching aids (Video projector, Computer, Interactive board, etc.) and the level of acquisition of the student (Teacher's point of view)

The graph presents the teachers' answers concerning the use of pedagogical means such as video projectors, computers, interactive boards, etc., to improve the level of acquisition of the students. 90% of the teachers affirm that the use of these tools improves the level of acquisition, while 10% of the teachers do not see a relation between the two.

The same question was asked to the students, and the graph below shows the answers received:

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

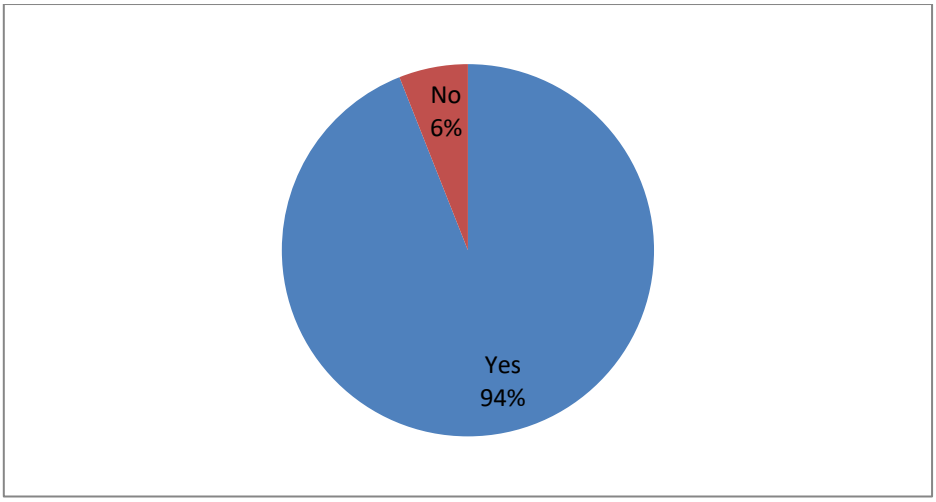


Figure 2. Teaching aids (Video projector, Computer, Interactive board, etc.) and the level of acquisition of the student (Student's point of view)

Figure 2 indicates that 94% of the students are of the opinion that the use of a video projector, computer, or interactive whiteboard improves their acquisition, while 6% of the students assert that the level of knowledge acquisition is not related to the use of these means. Thus, students and teachers are generally in favor of the use of digital technology.

In the same view as the responses of teachers and students, the documentary review "TACT production" states that "Technologies (video projector, computer, interactive board, etc.) can contribute in several ways to advance the assimilation of knowledge in the various educational subjects as well as the improvement of skills and behaviors that are attached to this knowledge. The nature and development of this learning remain linked to the students' prerequisites and the activities they carry out with these techniques" (Bracewell & Laferrière, 1996).

In addition, teachers were asked to identify the most effective tool among these different tools and to mention any other tools. The graph below shows the teachers' answers to this question.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

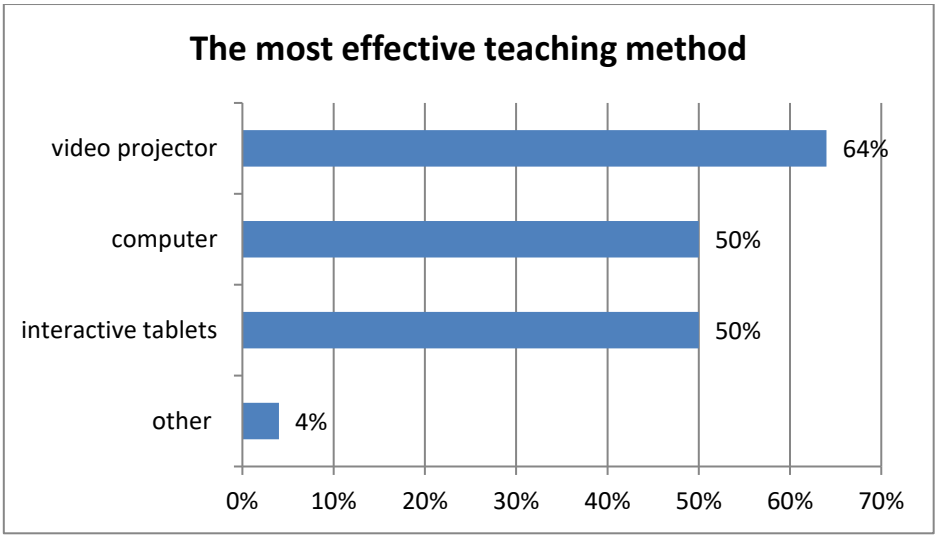


Figure 3. The most effective teaching method

According to the teachers' answers, 50% state that the use of a computer with a video projector is the most effective method. On the other hand, 50% of the teachers opine that the use of an interactive board with a video projector is the most active means, while 4% of the teachers suggest that there are other more effective tools such as the Smartphone, the digital binder (interactive tablets), and the social networks.

In the same context, a study conducted by Laval University and McGill University on the contribution of NICTs to the learning of primary and secondary school students announces that "The use of computers seems to be well used, along with other pedagogical innovations (video projector, courseware, etc.), to improve the acquisition of students in various subjects such as English, mathematics, and science" (Bracewell & Laferrière, 1996).

Concerning the interest in using an interactive whiteboard, Louise Sarrasin announces in her article, TBI/TNI and the 3-O strategy in MST, that "The 3-O approach (TablO-BurO-CervO) integrates three known areas of the classroom, i.e., the blackboard (or the front of the class), the desk (the student's working environment) and the brain (where learning takes place), which is taken advantage of by teachers. As the teacher works with TBIs, the students should thus be allowed to learn in these three spaces (TablO-BurO-CervO). Also, the teacher is definitely required to modify the learning situations (Sarrasin, 2012).

Based on the responses of teachers, students, and the research conducted in this area, it is deduced that the use of teaching aids such as video projectors, computers, TBI, and others remains one of the most important tools for academic success.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Question 2: Do you use the portal of the Ministry of National Education and Vocational Training for the integration of ICT in education?

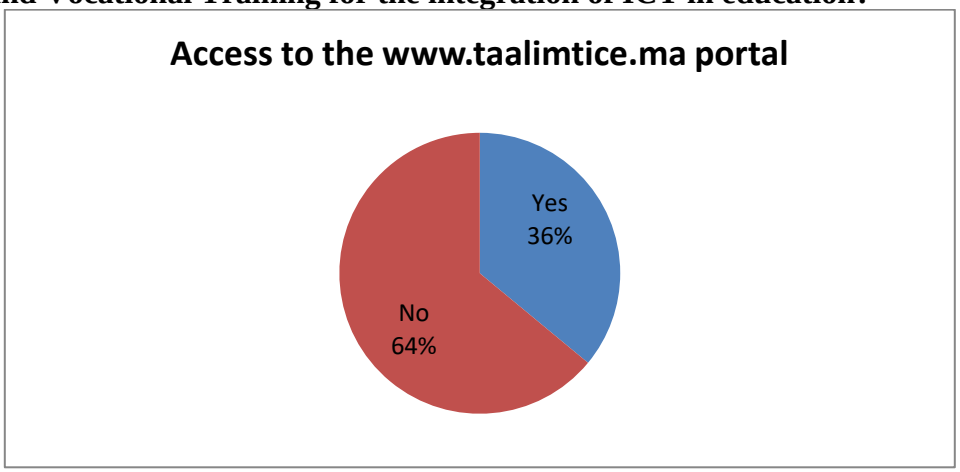


Figure 4. Percentage of access to the www.taalimtice.ma portal (Teacher's point of view)

The graph in Figure 4 shows the percentage of access by teachers to the Ministry of Education portal (www.taalimtice.ma) for the integration of ICT in education. Nearly 64% of teachers do not use this portal, and only 36% access it.

Thereafter, the teachers who use this portal were asked to give their opinion on it. The graph below shows their answers.

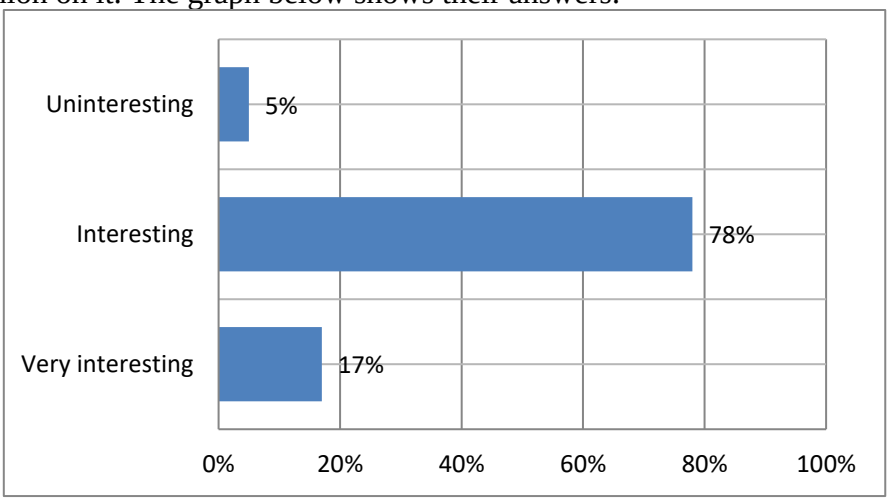


Figure 5. Teacher ratings on the www.taalimtice.ma portal

From Figure 5, it can be seen that 78% of the teachers who use this portal find the content of the site interesting. Subsequently, 17% of the teachers find the content of the portal very interesting, while 5% find the

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

content of this portal uninteresting. Using these percentages, it suffices to say that the site is interesting, but most teachers are not aware of it.

The same question was asked to the students concerning the access to the portal (taalimtice.ma) and the graph below presents their answers.

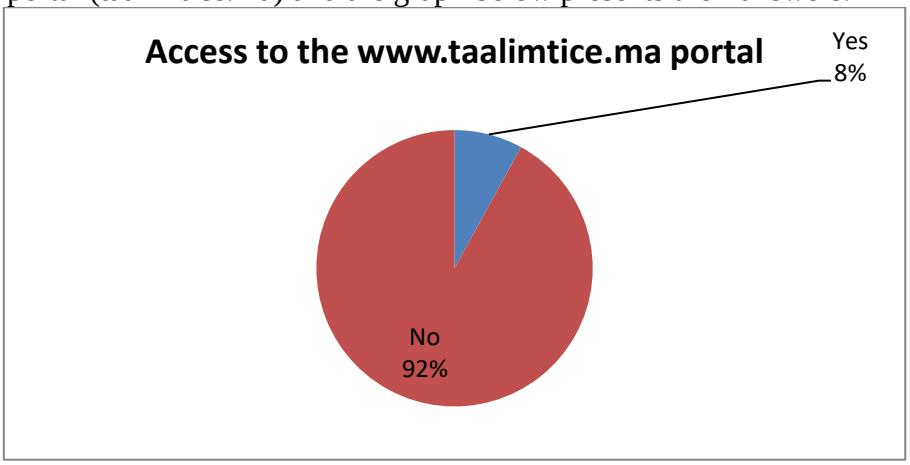


Figure 6. Percentage of access to the www.taalimtice.ma portal (Student's perspective)

Figure 6 shows that 92% of students did not access this portal, and only 8% consulted it. The portal (taalimtice.ma) was created by the Ministry of National Education to facilitate access to digital resources for different subjects, from the first year of primary school to the second year of the baccalaureate, in order to integrate ICT into the teaching process. The portal contains a large number of applications and a lot of videos to facilitate the explanation of different phenomena. Therefore, it is necessary to sensitize teachers through meetings, notes from the ministry, or announcements to access this portal and also to sensitize students on the importance of using this portal.

Question 3. Do you integrate ICT into the teaching process?

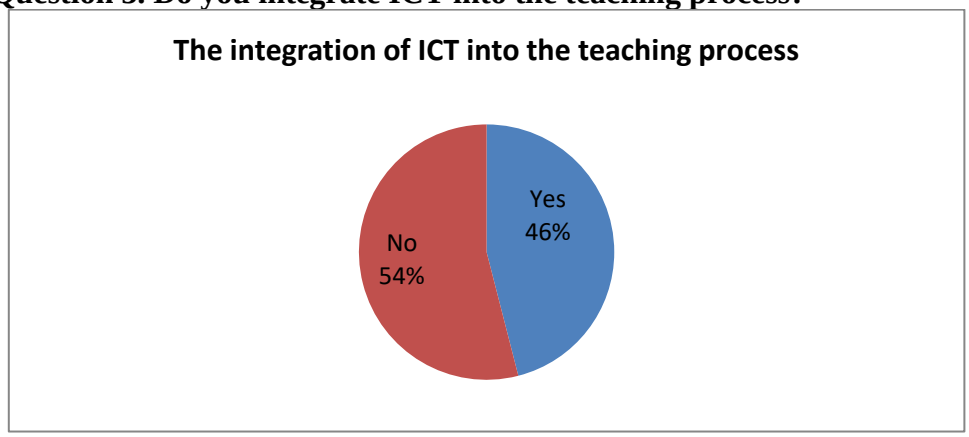


Figure 7. The integration of ICT into the teaching process

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

The graph shows the percentage of teachers who integrate ICT in the teaching process. Figure 7 shows that 54% of teachers do not integrate ICT in the teaching process, while 46% of teachers integrate ICT in the teaching process. According to Nicole Perreault in her research entitled "Rôle et impact des TIC sur l'enseignement et l'apprentissage au collégial", she states that "ICT improves the adoption of a pedagogical method that places the student in the middle of the learning process. Certainly, ICT provides new means, not only for the dissemination of knowledge but also for the deepening of learning that promotes the construction of competencies" (Perreault, 2003).

In the same vein, Catherine Bizot stated in an interview on "Numerical schooling" that "The ICT in education provides an opportunity to improve and vary teaching practices which are becoming more and more interactive and better adjusted to the wishes of each student. It also allows the adaptation of teaching according to the profile of each student, as well as group work in project logics where they can carry out an activity together. More so, it offers the way to the development of the courses through the provision of several educational resources. Furthermore, it offers the possibility for all students to access information and develop the link between the school and the environment, especially with families" (Bizot, 2013).

Based on these statistics and the benefits of ICT integration, the ministry should put more effort to encourage teachers to integrate ICT into their teaching process.

Question 4: Are you aware of the digital resources that are provided by the Ministry of Education?

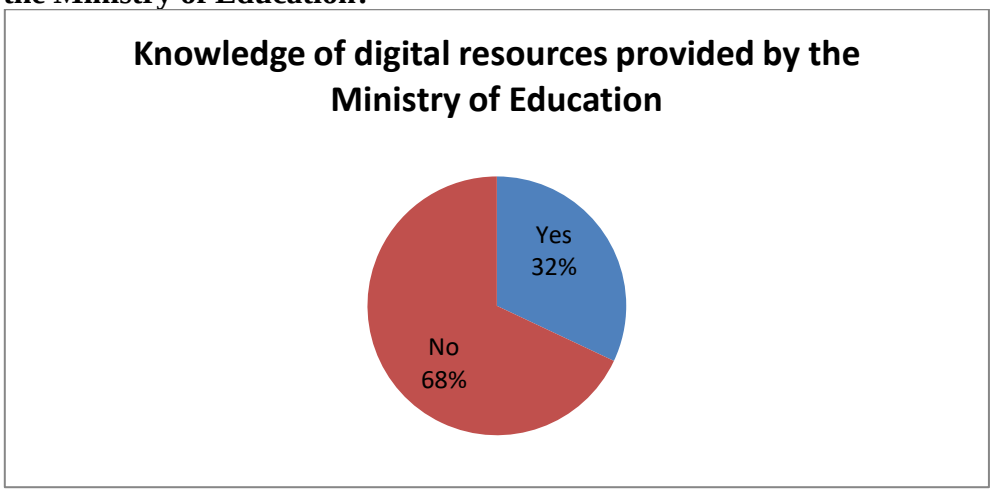


Figure 8. Knowledge of digital resources provided by the Ministry of Education

Every year, the Ministry of National Education, more precisely the Engineering Directorate, offers CDs containing digital educational resources for students of all levels and for all subjects (mathematics, life science, and

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

earth, Arabic language, etc.) to each provincial directorate of the Ministry. Figure 8 shows the statistics of teachers who are aware of these digital resources. While 32% of teachers are aware of these resources, 68% of teachers are unaware. It is also noted that more than two-thirds of teachers do not know that these resources actually exist. Thus, despite the efforts of the Ministry to create these digital resources, this digital content is hardly being used by teachers.

The graph below shows that among the teachers who know about these digital resources, 62.5% use them in their learning process while 37.5% of the teachers do not use them.

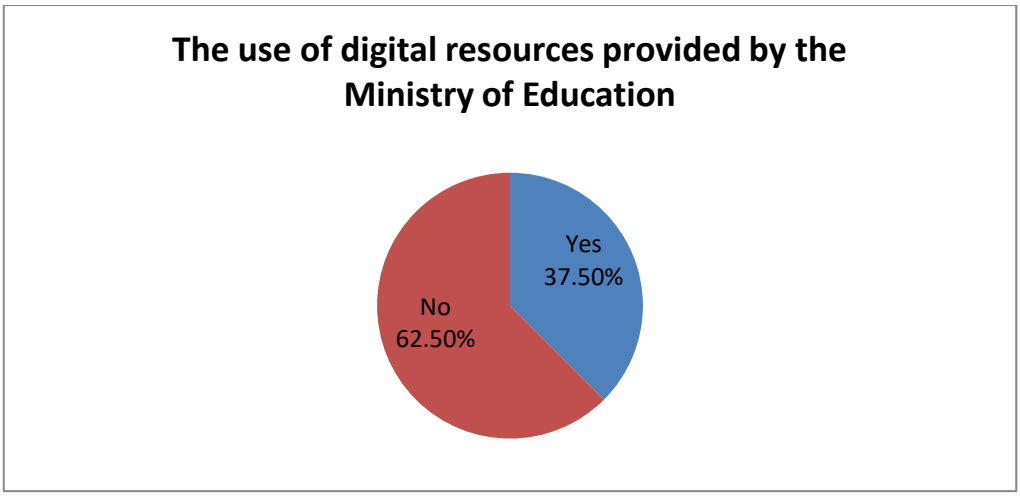


Figure 9. The use of digital resources provided by the Ministry of Education

The teachers who use these resources were asked to give their opinion on the use of these resources, and their responses are presented in the graph below.

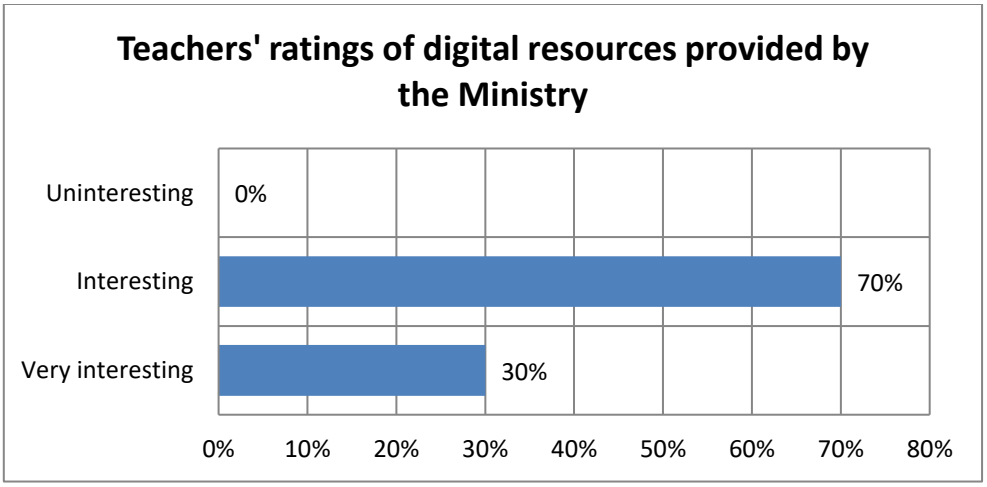


Figure 10. Teachers' ratings of digital resources provided by the Ministry

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

According to Figure 10, 70% of teachers find these resources interesting while 30% of teachers state that these resources are very interesting.

Digital learning resources offer a very important capacity for pedagogical renovation, which allows the advancement of the performance and equity of the educational system. The digital educational resources provided by the Ministry are very effective and important in the learning process. Also, they allow teachers to integrate ICT in teaching in an easy and quick way (without any effort of research or creation by the teacher).

Conversely, the same question was asked to the teachers who know about these resources and do not use them in order to justify why they never integrate them into the learning process. The graph below shows the answers provided by the teachers.

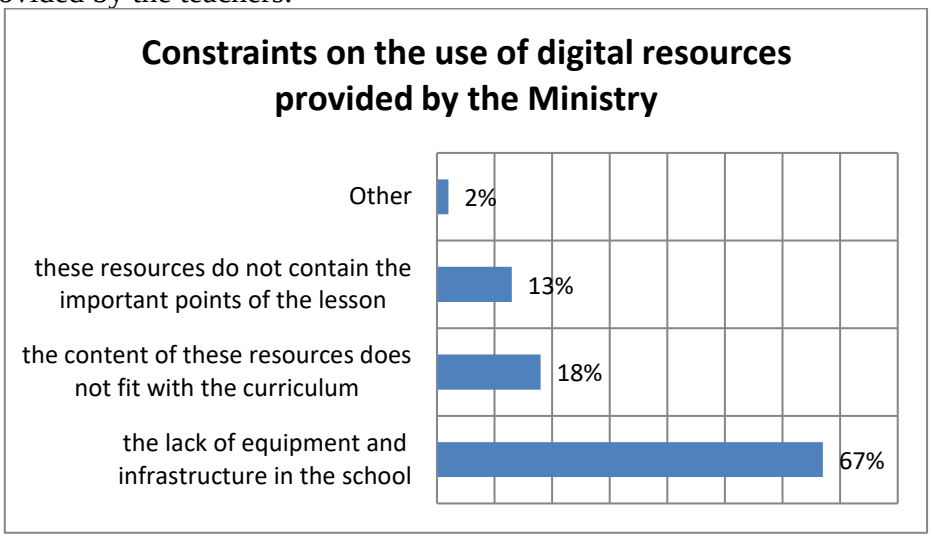


Figure 11. Constraints on the use of digital resources provided by the Ministry

According to Figure 11, 67% of the teachers do not use these resources because of the lack of equipment and infrastructure in the school. Also, 18% of the teachers are of the opinion that the content of these resources does not fit with the curriculum. Furthermore, 13% of the teachers stated that these resources do not contain the important points of the lesson, while 2% of the teachers assert that there are other constraints such as incompetence in using computer tools.

Despite the efforts of the Ministry of National Education, in the field of integration of ICT, to aid the learning process through the creation of the portal and the distribution of digital resources, teachers are still unaware of the availability and ready usage of these resources (i.e., the portal and digital resources). Therefore, the Ministry should create methods of publication and

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

announcements to inform and sensitize teachers on the importance of these resources.

Subsequently, it is necessary to create an infrastructure that will facilitate and encourage teachers to use these technologies. For example, it is necessary to equip all rooms with at least one computer, a video projector, and a modem to access the Internet and also change the blackboards to interactive whiteboards (TBI). However, it is important to check these resources to avoid differences between them and the curriculum of the subject taught. The teachers also require training so as to comprehend the methods of integration of ICT in the learning process.

Question 5: Have you attended any training courses organized by the Ministry?

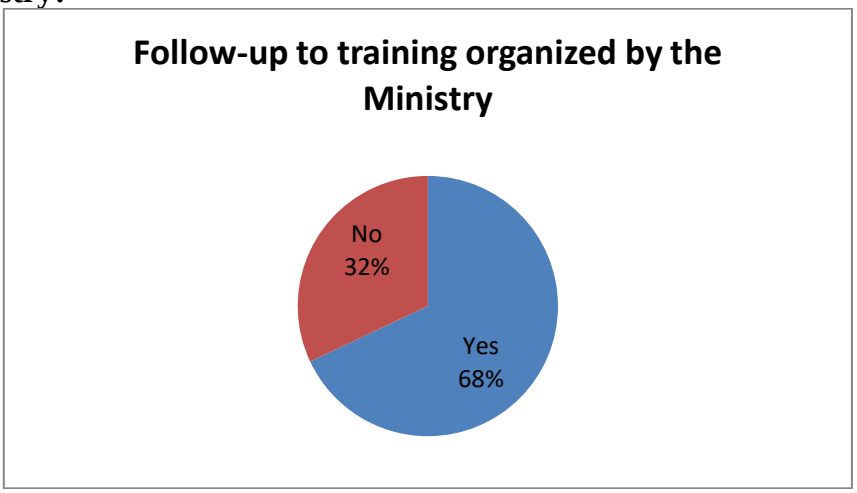


Figure 12. Follow-up to training organized by the Ministry

Figure 12 shows that 68% of the teachers state that they have already taken a training course set up by the Ministry, while 32% of the teachers assert the opposite. The 68% of the teachers have taken one of the following trainings:

- Microsoft Office Specialist training,
- Training in integration pedagogy,
- Engineering training.

Concerning the importance of teacher training, Michael Barber and Mona Mourshed, in their study titled “Keys to the success of the best performing school systems”, stated that "The best-performing systems are proof that, in the end, it is the level of teacher competence that makes a school system good" (Barber & Mourshed, 2007).

It should be noted that the percentage of beneficiaries is a little high. Therefore, it is necessary to reach 100% of the beneficiaries. This is because

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

all the teachers must follow at least compulsory training during one school year so that they remain up to date with the innovations in teaching and new learning technologies.

To this end, the Ministry has created the MOOC (Massive Open Online Course) ICT in education engineering platform (Information and Communication Technologies in Education) for the training of teachers in the field of computer science to improve their performance. This, in turn, will increase the success rate of students.

The training within the ICT in education engineering MOOC is divided into sections and each section represents an AREF (Regional Academy of Education and Training). By simple method of organization, the teacher could follow the training only in his section. In addition, the content of the training remains the same at the national level.

The ICT in education engineering online platform is a learning and professional development space, which is dedicated specifically to education professionals who wish to improve their skills and knowledge in the use and integration of ICTs. The platform makes available online courses and resources for the purpose of following up before, during, and after the training courses.

Participants have a choice of access to resources and courses according to their wishes and pace. These courses are integrated into the platform in such a way that participants can access them even before attending the face-to-face training.

In this survey, none of the teachers interviewed are registered on this platform. For this purpose, teachers were asked to identify the type of training they prefer.

Question 6: What type of training do you prefer?

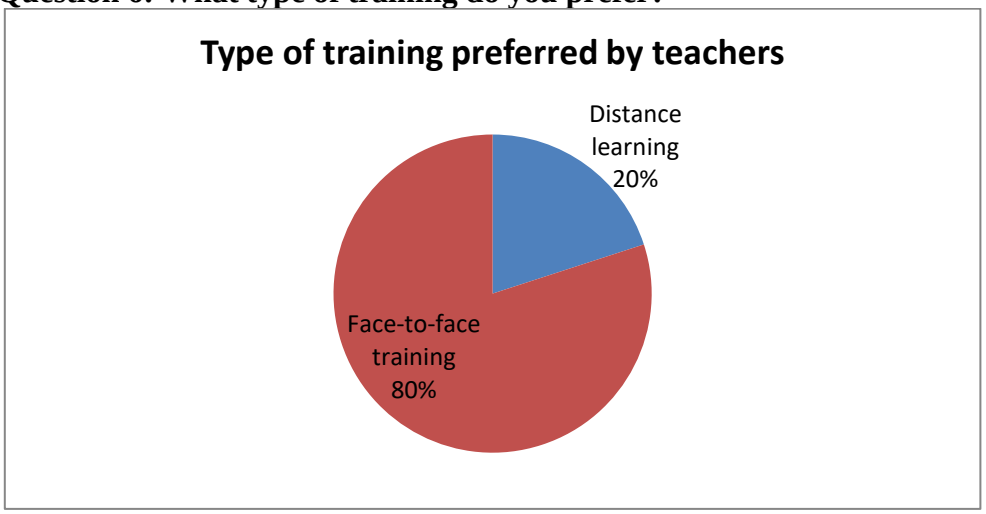


Figure 13. Type of training preferred by teachers

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

It is observed from Figure 13 that 80% of the teachers prefer face-to-face training, while only 20% of the teachers favor distance learning. This result reflects the absence of MOOC registration by teachers. The main constraint of distance learning is that the learner (teacher) is alone in front of the class session. There is no instructor who can give a written or oral explanation or demonstration, and there are no fellow students who can motivate each other. For this reason, most teachers opt for face-to-face training.

Teachers were also asked to identify the types of motivations that might encourage them to take training. From the teachers' responses, the graph below

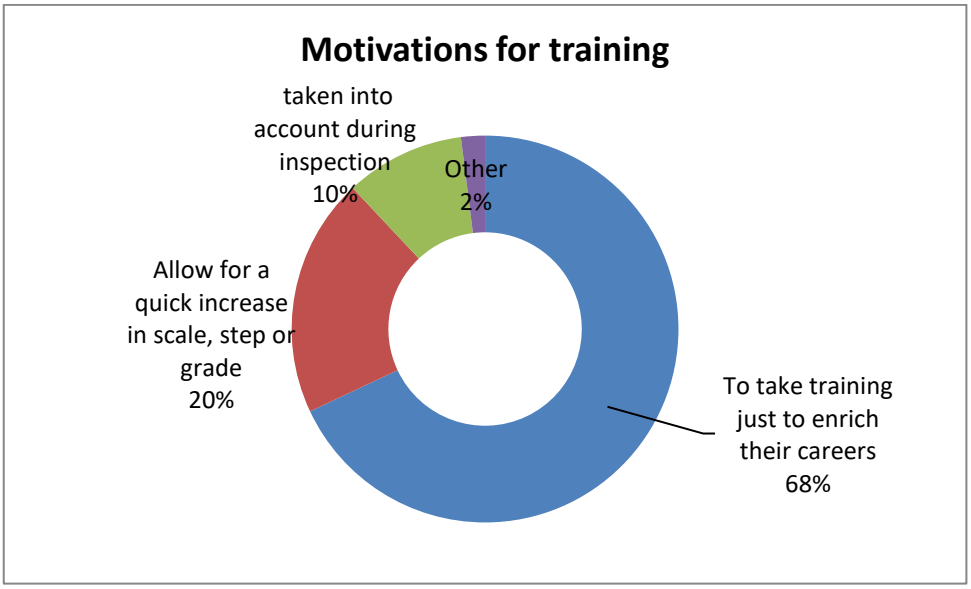


Figure 14. Motivations for training

According to this graph, 68% of teachers state that they want to take training just to enrich their careers, while 20% indicate that training should allow for a quick increase in scale, step or grade. On the other hand, 10% of teachers consider that training should be taken into account during the inspection.

Research shows that the most important factor in teacher improvement is the development and improvement of skills, as well as updating and increasing knowledge.

Conclusion

Affirmatively, the result of the analysis carried out through the questionnaire reveal that there is no single cause of school failure, but several

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

overlapping causes. Therefore, the main causes of school failure are summarized in this research as follows:

- Pedagogical learning methods used by teachers,
- Techniques of animation and motivation of the student,
- Lack of integration of ICT into the learning process and lack of use of the department's digital resources,
- The lack of in-service training for teachers,
- The lack of good infrastructure, poor school climate, and unfavorable working conditions,
- And the different levels of difficulty of the students.

From this empirical study, it is observed that the ministry provides enough efforts to develop the level and performance of the teachers, especially in the field of integration of ICT (MOOC, ICT in education platform). Nonetheless, the majority of teachers are unaware of this, despite their interest in this field of integration of ICT in the learning process. Concerning the students, there is a digital space dedicated to them that meets their multiple needs.

References:

1. Ayme, J.J. (2015). Laïcité - École laïque "Collection cours d'Histoire". FINLANDE : Éditions Atramenta.
2. Barber, M. & Mourshed M. (2007). Les clés du succès des systèmes scolaires les plus performants. Chicago USA : Éditions McKinsey & Company.
3. Bizot, C. (2013). Numérique scolaire - Interview. Published at www.20minute.fr available at http://www.20minutes.fr/magazine/ numerique-alecole/interview/le-numerique-augmente-la-motivation-et-le-plaisir-dapprendre-5016/ [Accessed April 28, 2021].
4. Bracewell, R. & Laferrière, T. (1996). L'apport des nouvelles technologies de l'information et de la communication (NTIC) à l'apprentissage des élèves du primaire et du secondaire. Canada : Éditions L'UNIVERSITÉ LAVAL et de L'UNIVERSITÉ McGILL.
5. Chauveau, G. (1996). L'échec scolaire existe - t - il ?, in Échec et réussite scolaires (n°104). Paris : Revue Migrants - formation.
6. Chauveau, G. & Rogovas-Chauveau, E. (1995). À l'école des banlieues. France: Éditions Esf Editeur.
7. Fuxet, A. (2004). Échec scolaire et pédagogie différenciée. Marseille : Éditions de l'institut universitaire de formation des maîtres de l'académie d'aix-marseille
8. Legrand, L. (1994). Encyclopedic dictionary of education and training. Paris: Éditions Nathan.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

9. Perreault, N. (2003). Rôle et impact des TIC sur l'enseignement et l'apprentissage au collégial. Canada: Éditions Collège Édouard-Montpetit.
10. Perrenoud, P. (1995). La pédagogie à l'école des différences (2nd ed). Paris : Éditions ESF.
11. Sarrasin, L. (2012). TBI/TNI et la stratégie des 3-O en MST. Available on the link: http://recit.qc.ca/article/tbitni-et-la-strat%C3%A9gie-des-3-o-en-mst [Accessed May 26, 2021].

ESJ Social Sciences

Enhancing Primary Schoolchildren's Autonomy and Interest towards Reading through Inquiry-based Activities and Digital Applications (A Case of Georgian Private School)

Irina Chikovani, PhD Candidate
Prof. Dr. Ekaterine Pipia
International Black Sea University, Georgia

Doi:10.19044/esj.2022.v18n12p172

Submitted: 07 March 2022
Accepted: 26 April 2022
Published: 30 April 2022

Copyright 2022 Author(s)
Under Creative Commons BY-NC-ND
4.0 OPEN ACCESS

Cite As:
Chikovani I. & Pipia E. (2022). *Enhancing Primary Schoolchildren's Autonomy and Interest towards Reading through Inquiry-based Activities and Digital Applications (A Case of Georgian Private School).* European Scientific Journal, ESJ, 18 (12), 172. https://doi.org/10.19044/esj.2022.v18n12p172

Abstract

Over the last century language teaching methods have undergone fundamental changes. A different set of approaches has appeared in response to the ineffectiveness of traditional teaching methods. As traditional approaches are not designed to pursue students' interests and do not encourage them to cooperate in self-directed learning, there is an urgent need to develop more effective teaching and learning approaches for 21st-century learners. Nowadays, teacher-centered education gives the way to more student-centered approaches, where the main goal of learning is to nourish interest in students and give them an opportunity to inquire and master learning in a more meaningful way. As technology-assisted education has become an indispensable and challenging part of student-centered education, it has become absolutely vital for teachers to enhance the integration of technology into their classrooms. Inquiry-based English language teaching through digital applications is among the most contemporary teaching approaches, which perfectly corresponds to the 21st-century demands while enhancing autonomy and fostering students' reading interest. Considering the urgency of integrating contemporary teaching methods in English as a Foreign Language (EFL) class, the objective of the presented study has been shaped to outline the impact of inquiry-based English language teaching through digital applications on primary learners' autonomy and interest development in one

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

of the Georgian private schools. A quantitative method was applied to the present study in order to compare pre and post-experimental questionnaire results and measure primary schoolchildren's autonomy level, curiosity, and interest in reading through digital applications before and after the experiment. The learning processes of the experimental and control groups were compared. The obtained data has been analyzed using SPSS to compare the survey results. The quantitative study has revealed that the 21st-century generation positively responds to contemporary teaching methods and inquiry-based teaching through digital applications has proved to be effective. Based on the research findings, eBooks and digital applications are reasonable resources to be utilized in EFL reading lessons as learning only with the help of traditional books appears to be boring for students. Based on the study results, it is obvious that working on electronic texts through inquiry-based approaches has assisted students in completely changing their negative attitudes toward reading and increased engagement and autonomy. Consequently, because of the decreasing interest in reading through traditional books, there is a need of promoting more student-centered teaching practices and increase technology integration in the teaching and learning process.

Keywords: Inquiry-based learning, digital reading applications, student-centeredness, learner autonomy, e-reading

Introduction

In the era of development and technological improvements there is an urgent necessity for innovative approaches at schools. Unfortunately, schools with traditional approaches work in a way that discourages students to become autonomous learners and provoke a sense of inquiry. Students lose motivation as existing teaching methods do not serve the demands of students with 21st-century skills. Schools and teachers need to diversify and change methods of teaching and provide students with appropriate real-life education. Effective, high-quality teaching is totally different and it requires a different set of methods, resources, activities, and approaches as students should learn the language without losing motivation and inspiration.

The language teaching area is in constant development and is filled with innovations (Alameddine & Ahwal, 2016). In the last twenty years, there is a great interest in using the inquiry approach to implement engaging lessons for students (Murdoch, 2006). There are a variety of methods that aim to increase students' motivation and autonomy. One of the methods is inquiry-based learning, a student-centered approach, which is based on holistic and authentic learning (Kuhlthau, Maniotes, & Caspari, 2007).

The inquiry-based approach is among the most contemporary teaching approaches, which perfectly corresponds to the 21st-century demands while

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

fostering interest in students and creating an interactive learning environment where discovery, reflection and creative learning are highly supported (Alameddine & Ahwal, 2016).

The implementation of inquiry teaching benefits second and foreign language instruction in all aspects. It serves the purpose of increasing the opportunity for participation and maintaining students' attention as it is an instrument to initiate and sustain the instructional interaction (Lee, 2014).

Inquiry-based learning emphasizes active participation and the learner's responsibility for discovering knowledge that is new to the learner (de Jong & van Joolingen, 1998). Inquiry teaching aims to provide students with knowledge via investigation, rather than receiving knowledge directly from teachers (Lazonder & Harmsen, 2016). In other words, inquiry-based teaching puts the stress on teaching through discoveries. Students are not only passive recipients of the language, they are involved in the teaching and learning process which, in turn, enhances students' autonomy and interest in reading. Each interesting experience or activity determines students' deep interest in the studying process and lays the foundation for further inspired actions (International Baccalaureate Organization, 2020).

While studying with inquiry-based approaches, students construct new knowledge and meaningful learning experience with great willingness and the most important factor is that for effective inquiry-based teaching and learning students should be deeply interested in the content. Genesee (1994) claims that understanding the content is an effective motivation for language learners, especially when the content is interesting or has some value to them. According to Hulstijn (2005), through the process of feeling curious about a topic, asking questions, and seeking answers, language learners can clarify their understanding of the content and develop their language skills simultaneously. Specifically, learners gain implicit knowledge by processing target-language input without consciously giving attention to acquiring the forms and structures of the language.

In inquiry-based learning (IBL), students are active during the learning process, they initiate different meaningful questions, become independent learners, are responsible for the acquisition of their knowledge, and inquire about and get knowledge throughout their lives (Rejeki, 2017). IBL provides valuable experience for EFL learners as it allows students to make creativity, reflect, discover, and encourage cognitive skills. Aside from this, inquiry-based learning ensures that learners are knowledge inquirers and not only the receivers of information (ibid.). Such valuable experience facilitates future self-regulated learning and success.

IBL encourages children to be more active and autonomous during the knowledge acquisition process and concentrates on students' needs and interests. "Teachers do not teach everything directly or explicitly. Instead,

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

learners are expected and encouraged to discover the knowledge, to generate underlined rules based on a series of examples and counterexamples" (Lee, 2014, p.1237). Students are interested and deeply involved in the process of investigation because the topics are according to their needs and interests (Murdoch & Wilson, 2006). While learning with inquiry approaches students are willing to experiment, explore, ask questions, think, reflect, and be aware of their style and pace (Abrams, Southerland & Silva, 2008)

In addition to this, in the last years, technology has remarkably advanced and brought significant changes in English language teaching. According to Mohammed (2015), technology integration in EFL (English as a Foreign Language) is commonly accepted and has undoubtedly improved the teaching and learning process. In the 21st century, digital tools have become inevitable in English Language Learning and have given rise to more innovative language teaching methods. Tabari and Tabari (2014) claim that technology gives us an unlimited amount of resources and makes the learning process more motivational and stimulating for learners.

E-reading provides unlimited opportunities and the availability of materials online. Students have access to eBooks any time they need. E-reading not only develops students' reading skills but also fosters learners' interest and motivation in reading in general.

It is notable that digital learning offers many opportunities to language learners. Implementation of technology in EFL classes increases students' motivation and interest. Students prefer working and reading in digital applications rather than in textbooks (Cutter, 2015). Hoven (1999) highlights that technology offers more engaging resources and undoubtedly provides learners with tremendous opportunities to become more autonomous learners. Modern devices give students a sense of freedom and encouragement so with the help of technology students become more motivated, active, and involved in the knowledge acquisition process (Ilter, 2009).

Reading through digital applications seems to be appealing to today's generation, they find eBooks modern, unique, and more attractive as they are eager to try out various digital options while reading and become more and more interested in the reading process. Students' interest can also be increased when they are granted an opportunity to read an eBook that is relevant to their level and interests (Larson, 2010). eBooks enable language learners to become involved in reading, to increase motivation, interest, and a desire for further reading (Yoon, 2013). Reading eBooks undoubtedly increases enthusiasm for reading and significantly improves students' reading achievement, comprehension, vocabulary, and attitude toward reading all of which are vital in order for students to become successful and enthusiastic readers.

Correspondingly, the following research questions have been formulated: To what extent will students' autonomy increase as a result of

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

participating in inquiry-based learning activities through digital applications? To what extent will students' attitudes and interests toward reading through digital applications increase as a result of participating in inquiry-based learning activities through digital applications? The paper follows different sections. Firstly, it provides an introduction including the importance of the research and a relevant review of the literature. After the introduction, the article discusses the methods and analysis of obtained findings of the research.

Methods

This study aimed at exploring the role and importance of inquiry-based English teaching through digital applications on EFL primary schoolchildren's autonomy and interest enhancement in Georgia. The quantitative approach was applied to the research to analyze questionnaire results and identify students' level of autonomy and general attitude towards reading lessons before and after the treatment. The quantitative approach was used as (a) It is precise; (b) it produces reliable and replicable data; and (c) statistically significant results are generalizable (Creswell, 2013; Cohen, Manion, & Morrison, 2007). The researchers collected statistical data from experimental and control groups and conducted a statistical analysis of the data using SPSS.

The questionnaire, which was applied for pre-and post-experimental assessment of students' level of autonomy and attitudes towards reading, was developed by the researchers based on literature analysis within the framework of this study.

A questionnaire was implemented with 3 multiple-choice items and 12 Likert Scale questions for data collection. The items were designed to evaluate students' general attitudes towards reading and the level of autonomy before and after the experiment. A five-point Likert scale was used, rating from 1 (completely disagree) to 5 (completely agree). The pre-and post-experimental questionnaires were the same, in order to assess the change (if any) in learner autonomy and attitudes towards reading.

In order to ensure content validity, first, the questionnaire was given to three independent judges to assess the quality of questions and the ability to cover the topic under study. A pilot study was established in one of the private schools in Tbilisi to test the reliability and validity of the survey questionnaire. There were 15 participants from the 5th grade in the pilot study.

Initial data was assessed in SPSS Version 16.0 and the reliability coefficient for each statement was higher than 0.8 out of 1, and the significance is $p=0,000<0.05$ which means that there is a strong correlation between the two results, the result is statistically significant and the questionnaire is reliable (See table 1).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

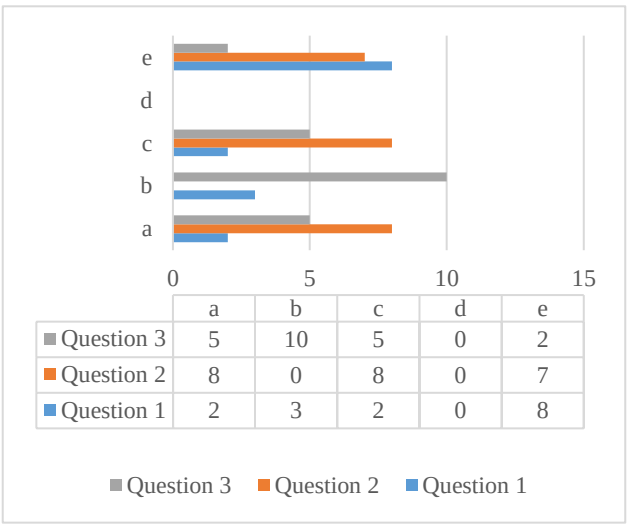
Table 1. Cronbach's Alpha analysis

Items	Cronbach's Alpha analysis (Pearson Correlation)	Significance (P)
1. Learning only with the help of books is sometimes boring.	0.853	0.000
2. I regularly use different online platforms (e.g., Raz-Kids) to improve reading.	0.866	0.000
3. Educational platforms and modern technologies should be integrated in learning process.	0.938	0.000
4. Educational websites (e.g., Raz-Kids, Epic) offer plenty of opportunities for reading improvement.	1.000	0.000
5. Online platforms are ideal places to share views and opinions.	1.000	0.000
6. Online platforms (e.g., Raz-Kids, Epic) and modern technologies can make reading easier.	0.938	0.000
7. In addition to the given homework by the teacher, I use additional books to read in my spare time out of class.	0.952	0.000
8. I can choose the reading material appropriate for my reading level by myself.	0.826	0.000
9. I can decide what topics to read without the support of my teacher.	0.877	0.000
10.I can identify my strengths and weaknesses in English reading and can overcome my difficulties.	0.980	0.000
11.I can evaluate my own reading progress.	0.932	0.000
12. I can set goals for the improvement of my reading skills.	0.986	0.000

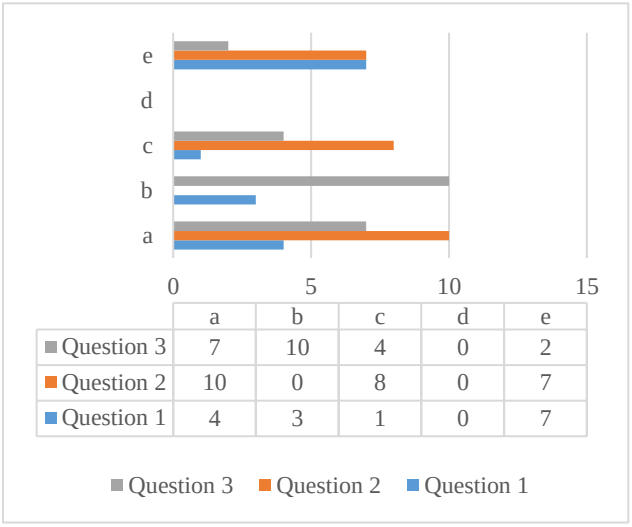
The pre and post-questionnaires included 3 multiple-choice items. To assess the reliability of the questions, the multiple-choice items were piloted with the same pilot study participants. The pilot study revealed that there was a balance between the first and the second result, so, it means that the multiple-choice questions are reliable (see figures 1-2).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Figures 1-2. Pilot study findings
Results obtained the first and the second time



	a	b	c	d	e
Question 3	5	10	5	0	2
Question 2	8	0	8	0	7
Question 1	2	3	2	0	8



	a	b	c	d	e
Question 3	7	10	4	0	2
Question 2	10	0	8	0	7
Question 1	4	3	1	0	7

The study consisted of two groups from the 5th grade. Learning processes of experimental (grade 5 [n = 18]) and control group (grade 5 [n = 20]) were compared. The selection of a private school in Georgia for the experiment was based on a convenience sample. It was relevant for the study as the school was easily reachable for the researchers. The research is quasi-experimental as the researchers used the groups which were formed by the school administration. However, two classes were chosen at random to be control and the experimental ones. The groups were selected at random among volunteers for the duration of the experiment.

The procedure of the experimental study

Pre- and Post-experimental questionnaires were held in order to evaluate the level of students' autonomy, and attitudes towards reading lessons and identify students' interest and curiosity in reading through digital applications before and after the experiment. The control and the experimental groups were taught the same material but with different approaches.

English language lessons in X private school were held five times per week. During 16 weeks, out of five hours, 1 hour each week was dedicated to the experiment. The English lessons were based on the textbook *Macmillan English* in both the experimental and control groups.

The teaching and learning conditions were the same for the experimental and control groups. The amount of time spent on in-class and out-of-class activities was the same for both the control and experimental groups. The control and the experimental groups were taught the same material but with different approaches. The experimental group was taught

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

with inquiry-based teaching methods using digital applications. Students were given special rubrics for choosing different books in a digital library (Raz-kids) in order to become more autonomous learners. Based on the information given in the rubric, students were trying to find the relevant book on Raz-kids. The teacher had a role of a facilitator during the process. After a less-restricted inquiry-based activity, students were reading and listened to books during 40 minutes lessons. They were given different individual projects for each book (Monolingual English-English dictionary, mini book report, comics book, reflection journal, etc.), and each project was assessed according to rubrics or checklists. In order to promote critical thinking, after reading each book, Padlet wall was constantly used, where students had an extended research-based question uploaded by the teacher (Free inquiry-based activity). Students were working on the question and were trying to find appropriate information on the internet. After completing the inquiry process, students were making presentations on the inquiry question and were uploaded on Padlet. Feedback was given not only from the teacher but from the students as well. However, the control group was not given any special treatment. They were given books by the teacher. Learners in the control group were taught with traditional approaches. They were reading books in the class. Students were translating all the sentences. They had in-class discussions and were given quizzes as homework.

To ensure the ethical issues, the researchers used the following procedures:

An application form for ethical approval was obtained from the target school before the research was conducted. The school's name and other recognizable remarks were not used. All the participants in the experiment were informed about the purpose of the study.

The students' (and their parents') oral consent to involve them in the study was obtained. The students and their parents were informed that the study was being conducted for research purposes only and would not harm the students in any way. All the participants were informed that their participation was voluntary and that they could withdraw themselves at any stage of the research.

Participants' names were not mentioned. Their responses were anonymous and their participation was closed to publicity. The information provided was strictly used within the scope of this research only and was not disclosed to any other third party.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Results

Results of the survey questionnaires (Pre and Post Questionnaires)

The data collected from the questionnaire were analyzed via SPSS 16.0 version. The pre-and post-questionnaires were given to the control and the experimental groups to measure the level of students' autonomy and attitudes towards reading lessons as well as interests in reading through digital applications. The results of pre- & post-experimental questionnaires are given in the following tables (see tables 2, 3, 4, 5)

Table 2. The results of the questionnaire in the experimental group in the pre-experimental stage

	1	2	3	4	5	Mean	Mode	Median	SD
1. Learning only with the help of books is sometimes boring.	0	5	0	6	7	3.83	5.00	4.00	1.25
2. I regularly use different online platforms (e.g., Raz-Kids) to improve reading.	3	8	0	3	4	2.83	2.00	2.00	1.50
3. Educational platforms and modern technologies should be integrated in learning process.	0	0	8	3	7	3.94	3.00	4.00	0.94
4. Educational websites (e.g., Raz-Kids, Epic) offer plenty of opportunities for reading improvement.	0	1	9	4	4	3.61	3.00	3.00	0.92
5. Online platforms are ideal places to share views and opinions.	0	0	5	5	8	4.17	5.00	4.00	0.86
6. Online platforms (e.g., Raz-Kids, Epic) and modern technologies can make reading easier.	0	0	10	3	5	3.72	3.00	3.00	0.895
7. In addition to the given homework by the teacher I use additional books to read in my spare time out of class.	0	10	0	4	4	3.11	2.00	2.00	1.32
8. I can choose the reading material appropriate for my reading level by myself.	3	5	8	2	0	2.50	3.00	3.00	0.92
9. I can decide what topics to read without the support of my teacher.	5	1	6	4	2	2.83	3.00	3.00	1.38
10. I can identify my strengths and weaknesses in English reading and can overcome my difficulties.	3	3	9	2	1	2.72	3.00	3.00	1.07
11. I can evaluate my own reading progress.	2	5	8	2	1	2.72	3.00	3.00	1.02
12.. I can set goals for the improvement of my reading skills.	2	6	8	1	1	2.61	3.00	3.00	0.98

Only three items (1,3,5) were answered by the students positively. The majority of the items (9 out of 12) did not receive positive results.

The high standard deviations (all above 0.5) on all statements reveal that the views of group members differ widely, which means that the group is quite heterogeneous.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

For items 1, 3, 5, Means and Medians are close to each other but Mode is quite different. For items 2, 4, 6 ,7 Medians and Modes are the same but the Mean is different. This means that the results, in this case, do not very well represent the real situation. However, for all the other items we can speak about normal distribution, this means that the results very well represent the real situation as all the Means, Medians and Modes are very close to each other.

Table 3. The results of the questionnaire in the experimental group in the post-experimental stage

	1	2	3	4	5	Mean	Mode	Median	SD
1. Learning only with the help of books is sometimes boring.	0	0	0	3	15	4.83	5.00	5.00	0.38
2. I regularly use different online platforms (e.g., Raz-Kids) to improve reading.	0	0	0	4	14	4.78	5.00	5.00	0.43
3. Educational platforms and modern technologies should be integrated in learning process.	0	0	0	4	14	4.78	5.00	5.00	0.43
4. Educational websites (e.g., Raz-Kids, Epic) offer plenty of opportunities for reading improvement.	0	0	0	6	12	4.67	5.00	5.00	0.49
5. Online platforms are ideal places to share views and opinions.	0	0	0	4	14	4.78	5.00	5.00	0.43
6. Online platforms (e.g., Raz-Kids, Epic) and modern technologies can make reading easier.	0	0	0	2	16	4.89	5.00	5.00	0.32
7. In addition to the given homework by the teacher I use additional books to read in my spare time out of class.	1	2	0	7	8	4.06	5.00	4.00	1.21
8. I can choose the reading material appropriate for my reading level by myself.	0	0	1	7	10	4.50	5.00	5.00	0.62
9. I can decide what topics to read without the support of my teacher.	0	0	0	5	13	4.72	5.00	5.00	0.46
10. I can identify my strengths and weaknesses in English reading and can overcome my difficulties.	0	0	3	5	10	4.39	5.00	5.00	0.78
11. I can evaluate my own reading progress.	0	0	2	7	9	4.39	5.00	4.50	0.70
12.. I can set goals for the improvement of my reading skills.	0	0	2	6	10	4.44	5.00	5.00	0.70

All the items were answered positively by the students in the experimental group, unlike the pre-questionnaire answers.

The low standard deviations (all below 0.5 except items 7, 8, 10, 11,12) on all issues reveal that the students' views are not so different from each other after the experiment and are more or less homogeneous.

Mean, Mode and Median are close to each other for most of the items. For items 7 and 11 Means and Medians are quite close to each other but the

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Mode result is different; however, for item 10 Mode and Median are the same but the Mean is different. This means that the results, in this case, do not very well represent the real situation. However, for all the other items we can speak about normal distribution, this means that the results very well represent the real situation as all the Means, Medians and Modes are very close to each other.

Table 4. The results of the questionnaire in the control group in the pre-experimental stage

	1	2	3	4	5	Mean	Mode	Median	SD
1. Learning only with the help of books is sometimes boring.	2	4	0	7	7	3.65	4.00	4.00	1.42
2. I regularly use different online platforms (e.g., Raz-Kids) to improve reading.	9	8	0	2	1	1.90	1.00	2.00	1.17
3. Educational platforms and modern technologies should be integrated in learning process.	1	1	7	5	6	3.70	3.00	4.00	1.13
4. Educational websites (e.g., Raz-Kids, Epic) offer plenty of opportunities for reading improvement.	0	0	10	5	5	3.75	3.00	3.50	0.85
5. Online platforms are ideal places to share views and opinions.	0	0	5	3	12	4.35	5.00	5.00	0.88
6. Online platforms (e.g., Raz-Kids, Epic) and modern technologies can make reading easier.	0	3	13	2	2	3.15	3.00	3.00	0.81
7. In addition to the given homework by the teacher I use additional books to read in my spare time out of class.	3	10	0	4	3	2.70	2.00	2.00	1.38
8. I can choose the reading material appropriate for my reading level by myself.	4	4	10	2	0	2.50	3.00	3.00	0.95
9. I can decide what topics to read without the support of my teacher.	1	1	12	4	2	3.25	3.00	3.00	0.91
10. I can identify my strengths and weaknesses in English reading and can overcome my difficulties.	2	1	15	1	1	2.90	3.00	3.00	0.85
11. I can evaluate my own reading progress.	2	2	14	1	1	2.85	3.00	3.00	0.88
12.. I can set goals for the improvement of my reading skills.	2	3	12	3	0	2.80	3.00	3.00	0.83

Only four items (1, 3, 4, 5) were answered by the students more or less positively, however, the majority of the items (8 out of 12) did not receive positive results, as it was in the experimental group.

The high standard deviations (all above 0.5) on all statements reveal that the views of group members differ too much, which means that the group is quite heterogeneous.

For items 2, 3, 4 Mean and Median are quite close to each other, but the Mode is different, however, for items 5 and 7 Median and Mode are the same, but Mean is different. So, for these items, we can't say that we have a normal distribution. This means that the results, in this case, do not very well

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

represent the real situation. However, for all the other items we can speak about normal distribution, this means that the results very well represent the real situation as all the Means, Medians and Modes are very close to each other.

Table 5. The results of the questionnaire in the control group in the post-experimental stage

	1	2	3	4	5	Mean	Mode	Median	SD
1. Learning only with the help of books is sometimes boring.	2	2	0	7	9	3.95	5.00	4.00	1.36
2. I regularly use different online platforms (e.g., Raz-Kids) to improve reading.	4	15	0	1	0	1.90	2.00	2.00	0.64
3. Educational platforms and modern technologies should be integrated in learning process.	0	2	8	5	5	3.65	3.00	3.50	0.99
4. Educational websites (e.g., Raz-Kids, Epic) offer plenty of opportunities for reading improvement.	0	0	8	7	5	3.85	3.00	4.00	0.81
5. Online platforms are ideal places to share views and opinions.	0	0	2	4	14	4.60	5.00	5.00	0.68
6. Online platforms (e.g., Raz-Kids, Epic) and modern technologies can make reading easier.	0	3	12	2	3	3.25	3.00	3.00	0.91
7. In addition to the given homework by the teacher I use additional books to read in my spare time out of class.	2	10	0	4	4	2.90	2.00	2.00	1.41
8. I can choose the reading material appropriate for my reading level by myself.	3	3	12	2	0	2.65	3.00	3.00	0.88
9. I can decide what topics to read without the support of my teacher.	0	1	11	4	4	3.55	3.00	3.00	0.89
10. I can identify my strengths and weaknesses in English reading and can overcome my difficulties.	4	3	10	1	2	2.70	3.00	3.00	1.17
11. I can evaluate my own reading progress.	1	2	14	2	1	3.00	3.00	3.00	0.79
12.. I can set goals for the improvement of my reading skills.	1	1	15	2	1	3.05	3.00	3.00	0.76

Only four items (1, 3, 4, 5) were answered by the students positively, however, the majority of the items (8 out of 12) did not receive positive results. The high standard deviations (all above 0.5) on all statements reveal that the views of group members differ too much, which means that the group is quite heterogeneous.

For items 1, 3, 4 Means and Medians are close to each other but Modes are different, for items 7 and 9 Modes and Medians are the same but Means are different. So, for these items, we can't say that we have a normal

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

distribution. This means that the results, in this case, do not very well represent the real situation. However, for all the other items we can speak about normal distribution, this means that the results very well represent the real situation as all the Means, Medians and Modes are very close to each other.

Table 6. Questionnaire- T-test analysis

Items	Pre-questionnaire (Grade 5 Control group)	Post-questionnaire (Grade 5 Control group)	Pre-questionnaire (Grade 5 Experimental group)	Post-questionnaire (Grade 5 Experimental group)	T-test analysis (P)
1.	3.65	3.95	3.83	4.83	0.002
2.	1.90	1.90	2.83	4.78	0.065
3.	3.70	3.65	3.94	4.78	0.001
4.	3.75	3.85	3.61	4.67	0.003
5.	4.35	4.60	4.17	4.78	0.003
6.	3.15	3.25	3.72	4.89	0.003
7.	2.70	2.90	3.11	4.06	0.004
8.	2.50	2.65	2.50	4.50	0.033
9.	3.25	3.55	2.83	4.72	0.017
10.	2.90	2.70	2.72	4.39	0.017
11.	2.85	3.00	2.72	4.39	0.017
12.	2.80	3.05	2.61	4.44	0.022

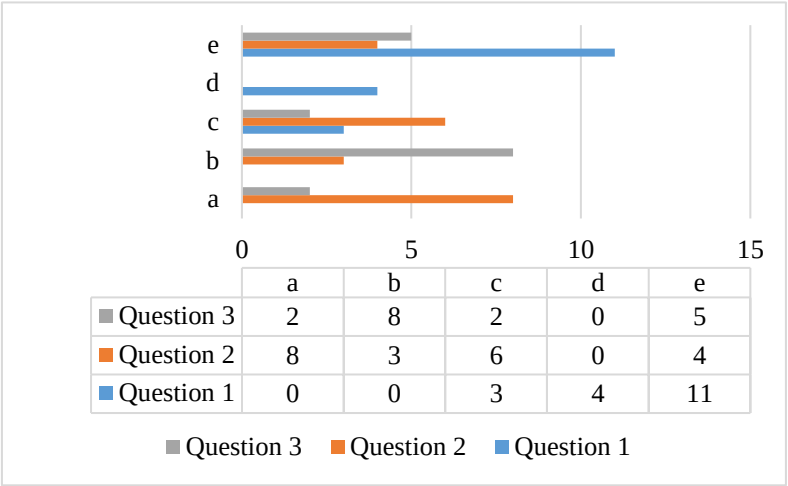
The researchers applied paired samples T-test (mean result for each statement was entered) to show whether the difference between the control (Pre-post questionnaire) and the experimental (pre-post questionnaire) group results are statistically significant. The significance of the differences is less than <0.05 for all the items which mean that the results are statistically significant.

Results of multiple-choice questions (Pre and Post questionnaires)

The second part of the survey was about students' attitudes toward reading. There were three multiple-choice questions in the questionnaire. In the first question, the researchers aimed to determine the time students spend reading every day, in the second question the researchers tried to identify the reason for reading, and in the third multiple-choice question students specified the reasons for their negative attitudes towards reading.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Figure 3. The results of the multiple-choice questions in the experimental group in the pre-experimental stage

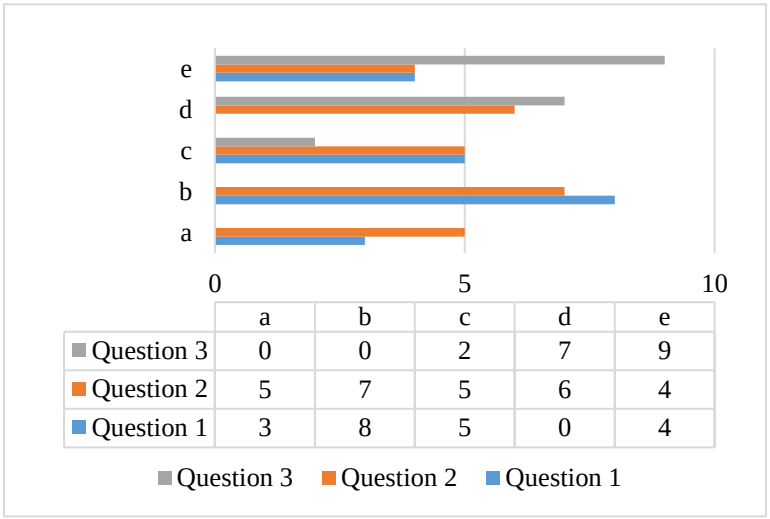


	a	b	c	d	e
Question 3	2	8	2	0	5
Question 2	8	3	6	0	4
Question 1	0	0	3	4	11

The results of the pre-questionnaire in grade 5 experimental group displayed that most of the students (11 out of 18) do not always read every day, 4 students read less than one hour, however, only 3 students read about one hour regularly. The results also show that the majority of students (8 out of 18) read for doing the homework and for improving their knowledge (6 out of 18), only 3 students out of 18 read for pleasure and four students for spending free time. None of the students read to improve their English language skills. The results obtained from the third question illustrate quite undesirable results, the majority of students (8 out of 18) find reading a boring activity. 5 students do not read because reading is difficult for them. Out of 18 students, 2 students do not like reading and the other 2 do not read because they are too busy with their phones.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Figure 4. The results of the multiple-choice questions in the experimental group in the post-experimental stage



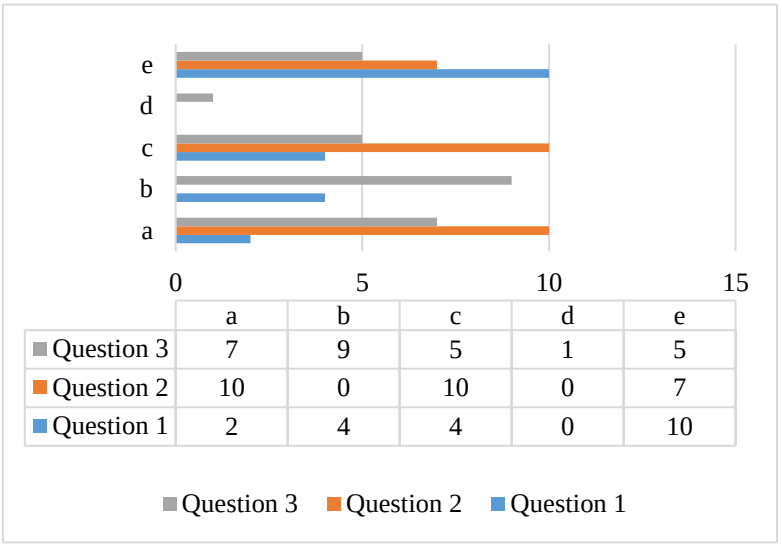
	a	b	c	d	e
Question 3	0	0	2	7	9
Question 2	5	7	5	6	4
Question 1	3	8	5	0	4

The experimental group's post-questionnaire results revealed that after having the experience of utilizing digital applications in reading lessons students have much more positive attitudes toward reading. According to the obtained results students (8 students out of 18) read about two hours every day, 3 students read about 3 hours, 5 students one hour and 4 students do not read every day at all. After the treatment students do not only read for doing homework, but they read for pleasure as well (7 out of 18). Out of 18 students, 5 students read to improve their knowledge while 6 students read to improve their English skills. Only 4 students read to spend their free time.

It is quite clear that intervention positively influenced students' attitudes about reading. Comparing the questionnaire results indicated from the pre and post-questionnaires the method was quite successful.

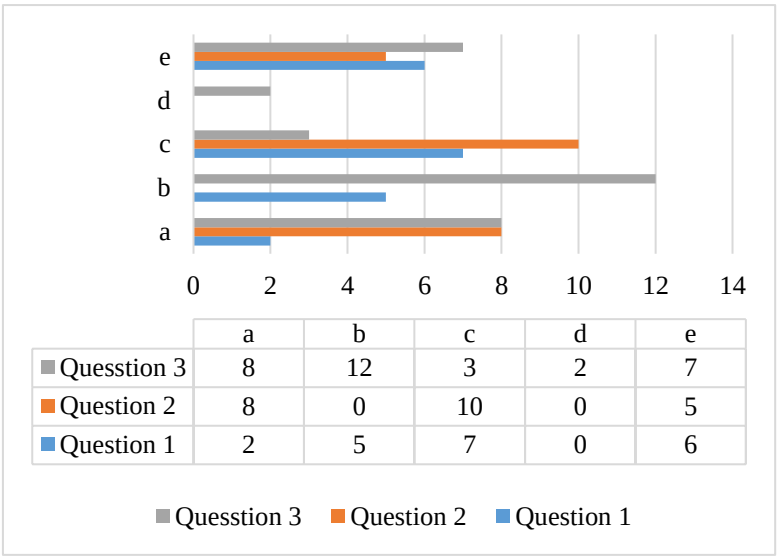
 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Figure 5. The results of the multiple-choice questions in the control group in the pre-experimental stage



	a	b	c	d	e
Question 3	7	9	5	1	5
Question 2	10	0	10	0	7
Question 1	2	4	4	0	10

Figure 6. The results of the multiple-choice questions in the control group in the post-experimental stage



	a	b	c	d	e
Quesstion 3	8	12	3	2	7
Question 2	8	0	10	0	5
Question 1	2	5	7	0	6

There were no significant changes in control group students' responses in the pre and postquestionnaire. Pre and post-survey results revealed that the majority of students do not pay attention to reading and do not read every day. Half of the students read for doing their homework and another half for improving their knowledge. Some of the students read to spend their free time. Most of the students do not like reading and find it a boring activity. No

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

significant changes were noticed in the post questionnaire in the control group, students' attitudes toward reading have not changed.

Results obtained from the pre and post-questionnaires reveal that students are quite reluctant to read every day, they mostly read for doing homework and for improving their knowledge. The same picture is noticeable in the post questionnaire results. As for the third question, students either find reading boring or they just don't like it. Some students find reading difficult and some do not feel the need at all.

Discussion

Based on the research it could be seen that inquiry-based reading activities through digital applications have a positive influence on students' autonomy and interest enhancement. The obtained results are in alignment with the studies conducted by Sotiriou, Lazoudis, and Bogner (2020) and Johnson and Cuevas (2016). The study, which was conducted by Bayram, Oskay, Erdem, Ozgur, and Sen (2013) to find out the effects of the inquiry-based learning approach on students' motivation and interest depicted similar findings to the current study. Some researchers like Maxwell, Lambeth, and Cox (2015) and Abdi (2014) clearly highlighted the positive effects of the inquiry approach on the academic achievement, motivation, and interest enhancement of students. In addition to this, Lee (2014), Levy and Wilensky (2011), Shamsudin, Abdullah, and Yaamat (2013) revealed the positive effects of inquiry learning strategy on developing students' autonomy and attitude toward learning. The findings of previous studies have highlighted the essential role of IBL in language teaching and learning. Based on the current and the previous studies it has been revealed that IBL highly increases students' interest and promotes a meaningful language acquisition process. According to the study findings, inquiry-based teaching, which ensures students' active participation in the learning process, changes students from being passive learners to be more independent inquirers. Reflecting on this point, the data gained through the quantitative research in Georgia depicts the necessity and importance of contemporary teaching approaches and the integration of educational platforms and modern technologies in the learning process. Despite the fact that the methods of teaching are constantly changing and developing, there is still much more to be done in order to encourage a student-centered environment and improve students' general attitudes towards reading lessons. While talking about students' interest in reading and the level of autonomy, it can be clearly seen that students are practically taught with the help of traditional approaches, which seem to be less effective and interesting for students. Considering the fact that students lose interest in reading and are not autonomous learners, there is the significance of promoting student-

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

centered methods for 21st-century learners in order to increase the level of interest and autonomy in digital natives.

The researchers clearly understand the limitations of the study. One of the main limitations of the study is the duration of the experiment. The results would be more valid and reliable if the duration of the experiment was a longer period of time. In addition to this, the experiment was a small-scale study, limited to two groups only (one control and one experimental group). So the participants of the experiment may not give a full picture of the situation and it is hard to generalize findings to all language learners. The study focused on only one private school, for this reason, the findings obtained from this research are not easy to generalize to the whole country finally, the number of research participants was restricted and the given number of students may not give a full picture of the problem. For future studies, it would be better to expand the scope of the research in order to gain more valid and reliable findings. Increasing the number of students and number of schools will bring more accurate results.

Conclusion

The research has revealed that the 21st-century generation positively responds to contemporary teaching methods. Inquiry-based teaching through digital applications has proved to be effective. Based on the research findings, eBooks and digital applications are reasonable resources to integrate into EFL reading lessons as the majority of students (14 out of 18) consider that educational platforms and modern technologies should be integrated into the learning process. Since today's learners are growing up in an increasingly technological world and are exposed to multiple forms of technology, it should certainly be utilized in the field of education to support the reading process.

It is obvious that working on electronic texts through inquiry-based approaches has assisted students in completely changing their negative attitudes towards reading and increasing motivation and engagement. The majority of students (15 out of 18) clearly state that learning only with the help of traditional books is sometimes boring. It has also helped reluctant and struggling readers to increase their interest in reading as the reading process has become easier for them. Out of 18 students, 16 students point out that online platforms and modern technologies make reading easier. According to the findings, students have become more autonomous learners after the treatment. 13 students (out of 18) have stated that they can decide what topics to read without the support of the teacher after the participation in inquiry-based activities. Consequently, because of the decreasing interest in reading through traditional books, there is a need of promoting more student-centered teaching practices and increase technology integration in the teaching and learning process.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

The research has found that giving students the opportunity to be more autonomous learners, choose the stories according to their interests, use the built-in dictionaries, narrative reading features, etc., positively influences them, makes them more enthusiastic readers and gives them the motivation for further reading. Based on the research findings, most of the students (12 out of 18) believe that educational websites offer plenty of opportunities for reading improvement.

Research findings have revealed that it is essential to change the traditional methods of teaching with more student-centered approaches. Although the methods of teaching are becoming more and more innovative and student-centered nowadays there is still a need to experience more technology integration and implement inquiry-based activities in Georgian private schools.

Conflicts of Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

References:

1. Abdi, A. (2014). The effects of inquiry-based learning method on students‘ academic achievement in sciences course. *Universal Journal of Educational Research, 2* (1), 37-41. DOI: 10.13189/ujer.2014.020104
2. Abrams, E., Southerland, S., & Silva, P. (Eds.). (2007). *Inquiry in the Classroom: Realities and Opportunities*. North Carolina: IAP-Information Age Publishing.
3. Alameddine, M.M., Ahwal, H.W. (2016). Inquiry-based teaching in literature classrooms. *Procedia -Social and Behavioral Sciences*, 232, 332-337.
4. 4. Bayram, Z., Oskay, O.O., Erdem, E., Ozgur, S.D., & Sen, S. (2013). Effect of inquiry-based learning method on students' motivation. *Procedia-Social and Behavioral Sciences, 106*, 988-996. DOI: 10.1016/j.sbspro.2013.12.112.
5. Cohen, L., Manion, L., & Morrison, K. (2007). *Research Methods in Education*. London, Rutledge.
6. Creswell, J. W. (2013). *Research Design (International Student Edition): Qualitative, Quantitative, and Mixed Methods Approaches*. London: SAGE Publications.
7. Cutter, M. (2015). *Using Technology with English Language Learners in the Classroom.* Master's Thesis, New York: St. John Fisher College.
8. De Jong, T., & Van Joolingen, W. R. (1998). Scientific discovery learning with computer simulations of conceptual domains. *Review of*

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Educational Research, 68(2), 179-201. DOI: https://doi.org/10.3102/00346543068002179

9. Genesee, F. (1994). *Integrating Language and Content: Lessons from Immersion.* UC Berkeley: Center for Research on Education, Diversity and Excellence.
10. Hoven, D. (1999). A model for listening and viewing comprehension in multimedia environments. *Language Learning & Technology,* 3(1), 73-90.
11. Hulstijn, J. H. (2005). Theoretical and empirical issues in the study of implicit and explicit second-language learning: Introduction. *Studies in Second Language Acquisition*, 27(2), 129-140. DOI: https://doi.org/10.1017/S0272263105050084
12. Ilter, B. G. (2009). Effect of technology on motivation in EFL classrooms. *Turkish Online Journal of Distance Education*, 10(4), 136-158.
13. International Baccalaureate Organization. (2020). *Personal inquiries in the PYP*. United Kingdom.
14. Johnson, S. A., & Cuevas, J. (2016). The effects of inquiry project-based learning on student reading motivation and student perceptions of inquiry learning processes. *Georgia Educational Researcher*, 13(1), 51-85. DOI: 10.20429/ger.2016.130102.
15. Kuhlthau, C. C., Maniote, L. K., & Caspari, A. K. (2007). *Guided Inquiry: Learning in the 21st Century*. Westport: Libraries Unlimited.
16. Larson, L. C. (2010). Digital readers: The next chapter in e-book reading and response. *The Reading Teacher,* 64(1), 15–22. DOI:10.1598/RT.64.1.2
17. Lazonder, A. W., & Harmsen, R. (2016). Meta-analysis of inquiry-based learning: Effects of guidance. *Review of Educational Research*, 86(3), 681-718. DOI: https://doi.org/10.3102/0034654315627366
18. Lee, H. Y. (2014). Inquiry-based teaching in second and foreign language pedagogy. *Journal of Language Teaching and Research*, 5(6), 1236-1244. DOI:10.4304/jltr.5.6.1236-1244.
19. Levy, S. T., & Wilensky, U. (2011). Mining students' inquiry actions for understanding of complex systems. *Computers & Education, 56*(3), 556-573. DOI:1016/j.compedu.2010.09.015
20. Maxwell, D. O., Lambeth, D. T., & Cox, J. T. (2015). Effects of using inquiry-based learning on science achievement for fifth-grade students. *Asia-Pacific Forum on Science Learning and Teaching, 16* (1), 1-31.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

21. Mohammed, M. I. (2015). The perceptions of students and teachers about the benefits of and barriers to technology aided EFL. *Journal of Literature, Languages and Linguistics,* 13, 85-99.
22. Murdoch, K. (2006). Inquiry learning: journeys through the thinking processes. *Teacher Learning Network,* 13(2), 32–34.
23. Rejeki, S. (2017). Inquiry-based language learning (IBLL): Theoretical and practical views in English classroom. *English Franca*, 1(02), 135-148.
24. Shamsudin, N. M., Abdullah, N., & Yaamat, N. (2013). Strategies of teaching science using an inquiry based science education (IBSE) by novice Chemistry teachers. *Procedia - Social and Behavioral Sciences, 90,* 583-592. DOI: 10.1016/j.sbspro.2013.07.129
25. Sotiriou, S. A., Lazoudis, A., & Bogner, F. X. (2020). Inquiry-based learning and E-learning: how to serve high and low achievers. *Smart Learning Environments.* 7(29), 24-27.
26. Tabari, I. G., & Tabari, A. G. (2014). Application of computer and technology in EFL syllabus design. *Journal of Language Teaching and Research,* 5(2), 376-381. DOI:10.4304/jltr.5.2.376-381
27. Yoon, T. (2013). Beyond the traditional reading class: The application of an e-Book in EFL English classroom. *International Journal of Research Studies in Language Learning*, 2(1), 17-26. DOI:10.5861/ijrsll.2012.93

ESJ Social Sciences

Croissance et Decroissance d'une Ville en Phase de Desurbanisation : Le Cas de Mossendjo en Republique du Congo

Jean-Romuald Mambou
Institut d'Architecture, Urbanisme, Bâtiment et Travaux Publics (ISAUBTP)
de l'Université Denis SASSOU-NGUESSO de Kintélé,
Centre de Recherches Géologiques et Minières du Congo
Hilaire Elenga
Université Marien NGOUABI de Brazzaville,
Centre de Recherches Géologiques et Minières du Congo

Doi:10.19044/esj.2022.v18n12p193

Submitted: 08 November 2021
Accepted: 31 March 2022
Published: 30 April 2022

Copyright 2022 Author(s)
Under Creative Commons BY-NC-ND
4.0 OPEN ACCESS

Cite As:
Mambou J-R. & Elenga H. (2022). *Croissance et Decroissance d'une Ville en Phase de Desurbanisation : Le Cas de Mossendjo en Republique du Congo*. European Scientific Journal, ESJ, 18 (12), 193. https://doi.org/10.19044/esj.2022.v18n12p193

Résumé

Cet article traite d'un phénomène urbain encore méconnu en Afrique, mais qui est fréquent ailleurs, à savoir la décroissance des villes. En effet, ce phénomène s'est fortement développé depuis les années 1990 dans plusieurs régions du monde. Les villes en décroissance sont celles qui perdent leurs populations qui migrent en direction d'autres villes plus attractives, à cause du déclin de l'emploi local, des problèmes sociaux et de la faiblesse de l'économie locale. Ce phénomène peut toucher des villes de toutes tailles et causé une crise structurelle multidimensionnelle. Notre enquête sur Mossendjo a conclu que cette ville, de taille moyenne dans l'armature urbaine congolaise, est depuis plusieurs années en phase de décroissance l'entraînant inexorablement vers sa ruralité et la pauvreté de sa population. Elle a démontré que cette décroissance est due essentiellement à la désindustrialisation et la désurbanisation de la ville : la part de la population vivant de l'agriculture de subsistance atteint aujourd'hui 90%, la structure de l'emploi montre que 79% de la population de Mossendjo est sans emploi, la ville compte 56,52% de femmes et sa population est relativement jeune, 92,65% de la population a

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

moins de 45 ans et 75% des habitants de la ville de Mossendjo est au chômage.

Mots-clés: Ville, Mossendjo, croissance urbaine, décroissance urbaine, désurbanisation, économie urbaine, hiérarchie urbaine

Growth and Decline of a City Undergoing De-Urbanization: The Case of Mossendjo in the Republic of Congo

Jean-Romuald Mambou
Institut d'Architecture, Urbanisme, Bâtiment et Travaux Publics (ISAUBTP)
de l'Université Denis SASSOU-NGUESSO de Kintélé,
Centre de Recherches Géologiques et Minières du Congo
Hilaire Elenga
Université Marien NGOUABI de Brazzaville,
Centre de Recherches Géologiques et Minières du Congo

Abstract

This article deals with an urban phenomenon still little known in Africa, but which is frequent elsewhere, namely the decline of cities. Indeed, this phenomenon has developed strongly since the 1990s in several regions of the world. Shrinking cities are those who lose their populations who migrate to other more attractive cities, because of the decline of local employment, social problems and the weakness of the local economy. This phenomenon can affect cities of all sizes and cause a multidimensional structural crisis. Our survey of Mossendjo concluded that this city, of medium size in the Congolese urban framework, has been in a phase of decline inexorably towards its rurality and the poverty of its population. It demonstrated that this decline is essentially due to deindustrialization and de-urbanization of the city: the share of the population living from subsistence agriculture today reaches 90%, the employment structure shows that 70% of the population of Mossendjo is unemployed, the city has 56.52% of women and its population is relatively young, 92.65% of the population is under 45 years old and 75% of the inhabitants of the town of Mossendjo are unemployed.

Keywords: City, Mossendjo, Urban growth, Shrinking cities, urban economy, urban hierarchy, de-urbanization

I. Introduction

L'urbanisation en Afrique, et plus particulièrement en République du Congo, est une réalité incontestablement dont les effets sont visibles dans les tissus urbains des établissements humains. Cette urbanisation est variable

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

selon le type de ville. Si dans les grandes villes, comme Brazzaville et Pointe-Noire, ce phénomène se matérialise par une extension démesurée de la ville du fait d'une occupation anarchique des espaces ; il n'en est pas le cas des villes moyennes et petites, comme Mossendjo, qui subissent une régression et un vieillissement de la population. Avec la mortalité qui touche naturellement les personnes âgées, la plupart des quartiers de ces villes renferme des habitations abandonnées par les enfants orphelins, partis dans les grandes villes à la recherche d'une vie plus meilleure. Pour freiner cette exode qui « tue » les petites et moyennes villes, car elles se désurbanisent, il convient d'analyser les facteurs de cette recomposition urbaine pour en atténuer les effets par des propositions de politique urbaine adaptée aux villes en phase de désurbanisation. Cet aspect du problème urbain fera l'objet d'une autre publication.

Nous avons, pour illustrer ce phénomène au Congo, choisi Mossendjo en exemple ; car, cette petite localité présente toutes les caractéristiques des villes qui se ruralisent progressivement du fait de la décroissance urbaine.

La ville est définie, aujourd'hui, par des critères quantitatifs, tels que la taille de sa population, la surface de son étendue, sa densité ou même le volume de sa production marchande. Elle fait également l'objet de définitions fonctionnelles comme son statut administratif, sa spécialisation économique ou son rôle dans la structuration des échanges et des communications. La coalition de concepts alternatifs à la ville, tels que l'agglomération, l'unité urbaine ou l'aire métropolitaine renvoient, tous, à un groupement de populations spatialement agglomérées, caractérisé par une organisation économique et sociale historiquement construite (Schaffar, 2009). Le processus de décroissance des villes est connu depuis fort longtemps, exactement depuis la fin des années 1970, mais il connait un regain depuis au moins deux décennies, accéléré par les effets de la mondialisation et des inégalités de développement dans les établissements humains. Il est considéré comme un processus naturel de transformation urbaine en lien avec le cycle de vie des villes.

L'évolution de la ville et sa structuration répondent à des processus controversés. En effet, Est-ce que les grandes métropoles croissent plus rapidement que les petites villes sous l'effet des externalités positives ? Ce qui conduirait, dans le très long terme, à un paysage caractérisé par une concentration urbaine extrême (Dimou et al., 2011). Ces controverses sont alimentées par de nombreux travaux qui traitent de cette question, et particulièrement de la désurbanisation ou de la ruralisation des villes. Un phénomène qui est le contraire de la croissance urbaine, c'est-à-dire de la croissance démographique des villes. Ces travaux ont été résumés par MOREL—DORIDAT et HAMEZ en 2019. La désindustrialisation dans les villes, étatsuniennes et allemandes en particulier, a mis à jour cette nouvelle

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

notion dans la littérature urbaine, à savoir les villes en décroissance ou *Shrinking cities*. Ce phénomène de déclin urbain s'observe également dans les autres pays européens et en Afrique, bien que, dans ce dernier cas, peu d'études y soient consacrées à ce jour.

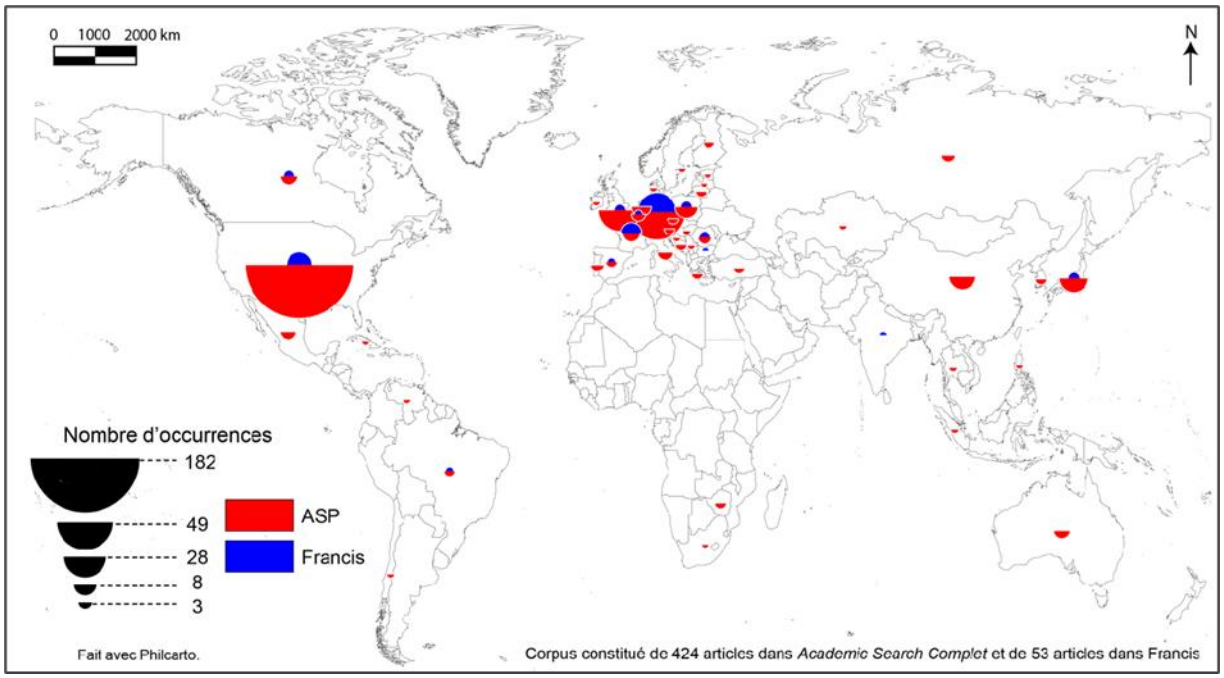


Figure n°1 : Pays faisant l'objet de publications sur les processus de décroissance
(Source: Morel-Doridat et Hamez, 2019)

II. Le Phenomene de Decroissance Urbaine

La décroissance urbaine est un phénomène qui s'est fortement développé depuis les années 1990 dans plusieurs régions du monde. Au milieu des années 2000, un groupe de travail sur le phénomène animé par Philip OSWALT a démontré sa dimension internationale à travers des exemples issus de plusieurs continents (Europe, Amérique du Nord, Japon). Des travaux confirmés par le Shrinking cities International Research Network. En effet, malgré la tendance mondiale actuelle à l'urbanisation croissante, de nombreux pays, comme les Etats-Unis ou l'Allemagne voient certaines de leurs villes perdre des habitants. Le déclin démographique est l'indicateur le plus souvent retenu pour les identifier. Ces villes portent le nom de *Shrinking city* aux Etats-Unis et de *schrumpfende städte* en Allemagne (Florentin, 2016). Schématiquement, la décroissance urbaine est caractérisée par une accumulation de processus, qui sont comme autant de spirales s'alimentant automatiquement entre elles.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

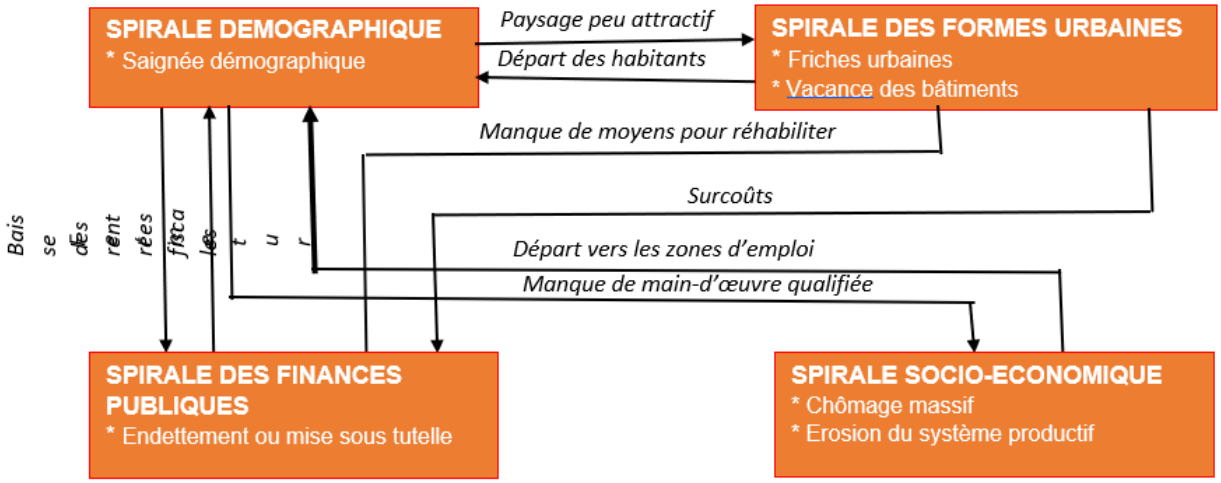


Figure n°2 : Spirales de la décroissance urbaine
(Source : Florentin Daniel, 2018)

I.1. Ampleur du phénomène de décroissance

Les villes en décroissance désignent les villes qui présentent des pertes conjointes de population, d'emplois et de richesse. En effet, le *Shrinking city*, littéralement « ville rétrécissante ou ville en déclin » renvoie à la conjonction de trois impacts : démographique par la perte des populations ; économique par la perte d'activités, de fonctions, de revenus et d'emploi ; et social par le développement de la pauvreté urbaine, du chômage et de l'insécurité. Pour exemple, Baltimore, Cincinnati et Philadelphie ont perdu 20% de leur population entre 1970 et 2000 ; Détroit, Cleveland, Pittsburgh et Buffalo plus de 30% et Saint Louis 44% dans la même période (Florentin, 2018). Dans la période récente, la crise américaine des *subprimes* a accentué l'intérêt pour les villes frappées par le déclin démographique. De ce fait, la question des *Shrinking cities* a fait l'objet d'une campagne médiatique mettant en avant le destin dramatique des villes comme Détroit, Cleveland, Flint ou Youngstown dont la décroissance urbaine est due à la désindustrialisation de cette partie des Etats-Unis (Wolf et al., 2013). En Europe, la thématique des *Shrinking cities* a émergé en Allemagne au début des années 2000. Après une longue période marquée par une croissance urbaine, l'armature urbaine allemande est aujourd'hui caractérisée par des « villes qui gagnent », *les gewinner städte*, et d'autres qui « perdent », les *schrumpfende städte*. La décroissance des villes en Allemagne n'est pas un phénomène récent. Elle s'observait déjà au XIXe siècle et à l'époque whilhelminienne. Elle était le résultat de la différenciation régionale de l'industrialisation qui a polarisé l'urbanisation et a multiplié les cas de décroissance et de stagnation urbaine. Après la partition de l'Allemagne et la période de forte croissance démographique et économique à l'Ouest, des villes industrielles ont été touchées par la crise et les restructurations

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

sectorielles à l'instar des villes de la Sarre et de la Ruhr à partir de la décennie 1970 (Roth, 2011). Les premiers travaux sur le sujet ont été menés en Allemagne, dans le contexte de la réunification du pays. Celle-ci a causé des pertes démographiques importantes dans les villes de ex-RDA (Lang, 2012). En France par contre, ce phénomène ne suscite guère plus d'intérêt. Peu de travaux de recherche urbaine y sont consacrés. Or, la décroissance des villes est également une réalité en France. Pour preuve, selon le zonage 2010 de l'INSEE, la décroissance démographique concerne actuellement, en France métropolitaine, 283 des 771 aires urbaines. Plus d'un tiers des aires urbaines affichaient en 2011 une population résidente plus faible qu'en 1990 (INSEE, 1990 et 2011). En prenant le recensement de 2006, la France métropolitaine comptait 117 unités urbaines de plus de 50.000 habitants (unité urbaine est une catégorie statistique désignant une agglomération urbaine constituée de plusieurs communes lorsqu'elles paraissent former ensemble une seule ville), représentant plus de la moitié de la population urbaine française, soit exactement 51,9%. Parmi ces unités, plusieurs communes sont en déclin démographique en lien avec l'économie. On en distingue trois types :

- le premier regroupe quinze unités urbaines dont le déclin démographique est dû à l'effondrement d'une activité industrielle prépondérante, voire sa disparition, déclenchant une émigration industrielle : c'est le cas du grand bassin houiller français du Nord-Pas-de-Calais avec la fermeture des mines de charbon, regroupant les agglomérations urbaines comme Douai-Lens, Valenciennes, Béthune, Forbach ;
- le deuxième ensemble de villes en déclin comprend Saint-Etienne, Saint-Chamond, Metz, Montluçon, Maubeuge qui furent des villes métallurgiques ou sidérurgiques ;
- le troisième ensemble de décroissance démographique tient essentiellement au déclin du textile : Roanne, Epinal, Saint Quentin, Châteauroux

D'autres villes également sont en déclin démographique du fait des restructurations industrielles (Montbéliard, Le Mans, Charleville-Mézières) ou de la difficulté de diversification économique (Vichy, Nevers, Châlons-en-Champagne) (Dumont et al., 2010). En Afrique, il n'y a presque pas de travaux consacrés à la décroissance des villes. Cela s'explique par le fait qu'il parait être un sujet moins important que la forte croissance générale des villes africaines. En effet, d'après l'OCDE, d'ici à 2050, la population africaine va doubler, les zones urbaines vont concentrer les deux-tiers de la croissance démographique et les villes vont compter 950 millions de personnes supplémentaires dans les 30 années à venir (OCDE, 2020).Or, ce phénomène cache des situations contrastées suivant les pays et à l'intérieur des pays. La macrocéphalie urbaine constatée dans la plupart des pays entraîne des cas de décroissance urbaine, qui souvent évolue vers la désurbanisation de la ville

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

qui se ruralise progressivement. Pour l'essentiel, cette décroissance est le résultat du solde migratoire occasionné par la disparition de l'activité industrielle prépondérante.

II. Stratégie d'atténuation de la décroissance urbaine

La décroissance urbaine survient dans les villes concernées par la perte des populations, le recul économique et la détresse sociale, matérialisant une crise à caractère permanent complexe et variable fonction des spécificités propres à chaque pays. La crise peut être lente et difficile à percevoir, mais appelle un changement dans les modalités de la production urbaine et dans les pratiques de l'aménagement. Il faut pour cela intégrer la décroissance dans la stratégie urbaine. Cela a été le cas de Turin (en Italie), qui a perdu plus de 25 % de sa population depuis les années 1970, et a vu le nombre de ses emplois dans le secteur productif baisser de plus de 130 000 unités. Sa trajectoire urbaine a marqué une forte bifurcation, qui a obligé les autorités municipales à changer leurs stratégies et leurs manières de produire l'urbain (Florentin, 2016). Il convient de préciser que le déclin urbain fait partie du cycle de vie de la ville et est présent dans les premières théories sur l'urbanisation. On en distingue deux types d'approches :

- *les approches linéaires* qui sont anciennes et prédisent l'inéluctabilité du déclin des villes au terme d'un processus de déconcentration puis de désurbanisation. À partir des années 1950 par exemple, l'étalement urbain est appréhendé aux États-Unis comme participant au déclin des villes centres et à leur dissolution ;
- *les approches cycliques* qui considèrent au contraire que les villes sont affectées par des phases de croissance et de décroissance qui alternent au cours du temps (Fol et al., 2010).

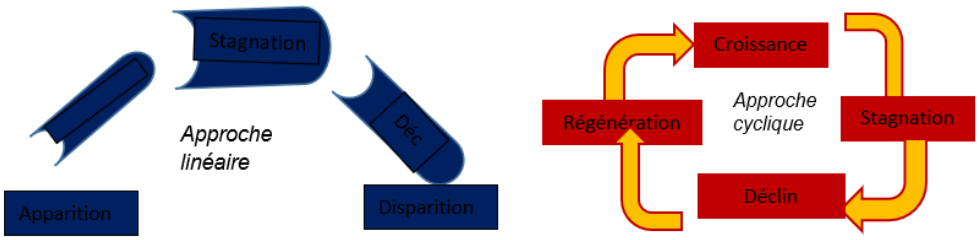


Figure n°3 : Les théories sur le cycle de vie des villes (Fol et Cunninghan-Sabot, 2010)

L'Agence nationale de la cohésion des territoires (ANCT), un organe du ministère français en charge de l'administration du territoire, en se référant à ces approches, la phase de déclin, considère les phases d'augmentation de la population, suivies de phases de déclin où cette croissance est redistribuée dans d'autres villes de la région, comme inhérente au développement urbain Des stratégies pour atténuer la décroissance urbaine existe afin de faire face

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

aux impacts négatifs de ce phénomène sur les villes. Elles passent par une bonne gestion des villes, une lutte contre les inégalités et inclusions sociales et la diversification de l'économie urbaine ; en d'autre terme la définition d'une politique de développement urbain susceptible d'améliorer l'attractivité de la ville (ANCT, 2021). Certains pays utilisent des politiques nationales urbaines, d'implantation ou d'utilisation du sol explicites, afin de gérer la croissance et le changement urbains à l'échelle nationale, c'est-à-dire entre les régions urbaines, en donnant la priorité aux interventions. L'association mondiale des grandes métropoles (AMGM) estime que ces politiques nationales peuvent être utilisées pour fournir un contexte pour les stratégies et les politiques de gestion de la croissance urbaine au niveau régional, métropolitain ou local. Car une politique urbaine doit se préoccuper de la gestion du changement urbain et influencer la répartition et l'opération des processus d'investissement et de consommation dans l'espace urbain. Elle doit être dynamique, permanente, et non pas ponctuelle (AMGM, 2011). Quant à la Conférence des Nations-Unies sur le Logement et le Développement urbain Durable (Habitat III) souligne, dans un de ses rapports, qu'il y a une corrélation entre bonne urbanisation et développement, une interaction entre urbanisation harmonieuse et création d'emplois et un lien entre qualité de vie et opportunités de subsistance. Ces principes devraient être intégrés dans toute politique et stratégie de renouvellement urbain. Ils font partie des propositions de cet organisme dans le cadre du « Nouveau Programme sur les Villes et l'Agenda 2030 pour le Développement Durable », notamment l'Objectif 11 relatif aux villes et communautés durables (Habitat III, 2017).

III. Methodes d'analyse des Systemes Urbains

Le choix des critères de définition de la ville n'est pas souvent neutre et leur utilisation privilégie naturellement une certaine conception de la ville, selon qu'elle est considérée du point de vue de l'aménagement du territoire, de celui de l'administration de sa population, du mode de vie de ses habitants et de leurs activités économiques. L'analyse d'une ville ou d'un système urbain est fondée sur les critères d'urbanité de chacune des villes qui constitue l'armature urbaine. Les villes peuvent ainsi être définies comme des :

- centres administratifs (définition fonctionnaliste administrative) ;
- lieux pourvus d'un statut particulier qui les distingue des campagnes (définition juridique) ;
- concentrations de population (définition démographique) ;
- concentration de population non agraire (définition sociologique) ;
- centres économiques (définition fonctionnaliste économique).

Les méthodes quantitatives sont utilisées fréquemment dans l'analyse des systèmes urbains modernes et donc des hiérarchies urbaines en mettant en

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

exergue la loi rang-taille qui met l'accent sur la définition démographique des villes (Sonkoly, 1996). Par exemple, au Danemark et en Islande, les lieux qui comptent un nombre d'habitants égal ou supérieur à 200 sont qualifiés de milieu urbain, alors que le seuil est fixé à 20 000 habitants aux Pays-Bas et au Nigéria, à 30 000 au Mali, 1000 habitants pour le Canada, 10.000 habitants pour la Suisse et 30.000 habitants pour le Japon. Le point de départ de ces classifications est le constat empirique que la distribution des tailles des villes d'un pays suit la loi de Pareto ou loi des 80-20, du nom de son créateur l'économiste sociologue italien du XIX^{e} siècle Vilfredo PARETO, complétée, plus spécifiquement pour les villes, par la loi de Zipf, encore appelée loi rang-taille, qui conditionne beaucoup de travaux sur les hiérarchies urbaines(Schaffar, 2009). On définit un indicateur positif *ou constante C* qui dépend de la taille de l'échantillon considéré (nombre de villes). La loi rang-dimension, ordinairement attribuée à Zipf (1949), a été formulée antérieurement par Auerbach (1931), Gibrat (1939), et Singer (1936). Elle établit, dans un tel ensemble classé, une relation simple entre la population P d'une ville et son rang R en appliquant la formule suivante :

$$P \times R^n = C, \text{ où } C \text{ est une valeur constante.}$$

C est le coefficient de hiérarchisation, stable dans le temps et l'espace, avec une valeur proche de l'unité, qui représente une mesure pertinente du degré de concentration urbaine :

- lorsque ce coefficient est faible (*C* inférieur à 1) : le système urbain est caractérisé par le poids démographique prépondérant des plus grandes villes (voire d'une ville) ;
- lorsque *C* est élevé (supérieur à 1), on est en présence d'un espace où la population est distribuée entre de nombreuses villes.

À chaque ville de population P est associé un rang R ; la plus grande ville de population P_1 ayant pour rang R = 1. L'équation générale correspondant à ce type d'ajustement devient (Thouez, 1972) :

$$P_n = P_1 \times R_n - q$$

- P_n = population de la ville de n^{ème} rang
- P_1 = population de la ville de 1er rang
- Rn = rang de la ville n
- q = constante.

Le phénomène de décroissance des villes peut s'expliquer par :

- un nombre de décès supérieur aux naissances (solde naturel négatif) ;
- ou le départ d'habitants non compensé par l'arrivée des nouveaux (solde migratoire négatif).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

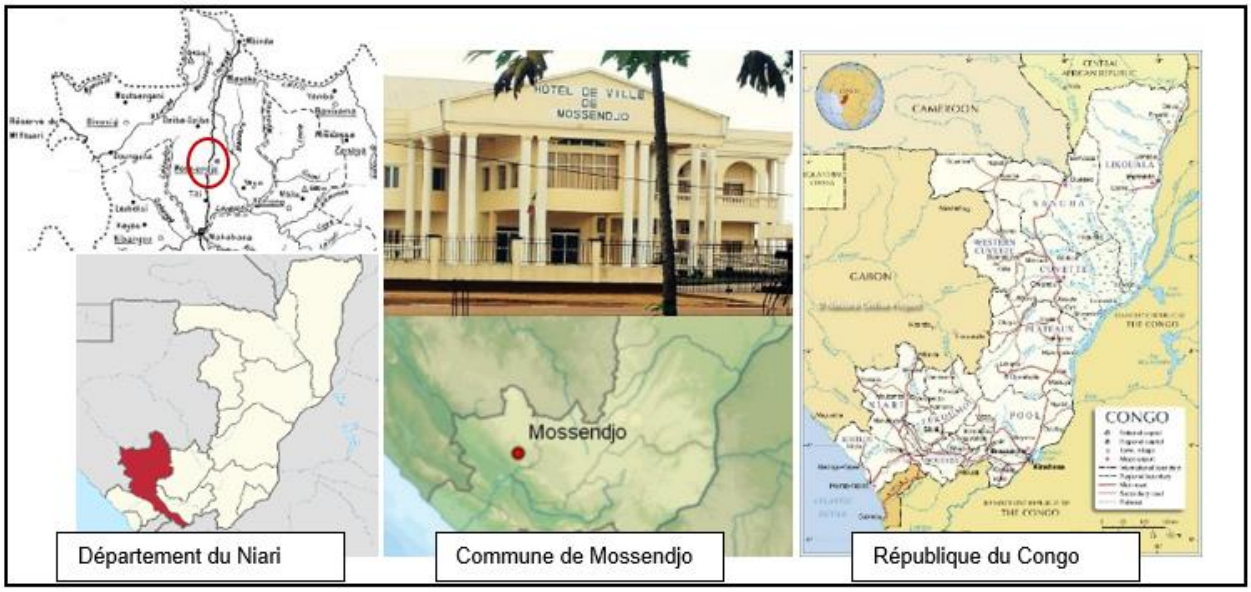
Dans la majorité des cas de villes en décroissance à travers le monde, la principale cause du déclin est le déficit migratoire.

IV. Enquete, Resultats, Interpretation et Discussion

IV.1. Cadre de l'étude

La ville de Mossendjo est une commune urbaine dite de plein exercice, créée par la loi n° 26/84 du 05 septembre 1984. Elle est située dans le département du Niari, à mi-chemin entre Dolisie et la frontière avec la République Gabonaise sur la route menant à Mouanda (Gabon). Elle se trouve à 176 km de Dolisie, à 154 km de Sibiti, 169 km de Nkayi et à 200km de Franceville (Gabon). Le site urbain de cette ville se trouve au centre de massif du Chaillu, chaine montagneuse forestière. Les coordonnées géographiques de Mossendjo sont : 2°57'00'' sud de latitude et 12°44'00'' de longitude avec 470 m d'altitude. La ville est reliée à Dolisie par un axe routier non bitumé, partant de Milla-Milla (District de Louvakou), et par une voie ferroviaire, partant de Dolisie. Mossendjo est considérée comme le centre de transit et de trafic du bois de la zone sud-ouest du Congo.

Son rayonnement socio-économique, hérité de la période où elle était chef-lieu du département de la Louessé (1960-1967), s'étend sur toutes les localités de la vallée de la Louessé, situées au nord des départements du Niari et de la Lekoumou en direction de Komono.



Graphique n°1 : Situation géographique de la ville de Mossendjo
(Source : Google Map, photo réalisée par l'auteur).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

IV.2. Déroulement de l'enquête

L'enquête de terrain s'est déroulée du 11 avril au 29 mai 2020, dans le cadre des travaux de Master II, session 2019-2020, en urbanisme d'un étudiant de l'Ecole Africaine des Métiers de l'Architecture et de l'Urbanisme du Togo (EAMAU) dont nous avons assuré la codirection du mémoire. Elle a pris, comme base, l'estimation de la population de la ville en 2020 par l'institut national de la statistique (INS) à 17.735 habitants (RGPH 2007).
Le nombre de ménages à enquêter a été obtenu à partir de la formule suivante :

$$n = N / (1 + N \times e^2)$$

Avec :

- n : Taille d'échantillon,
- N : Taille de la population
- e : Niveau de précision.

En retenant le niveau de précision de +/- 5% et la taille de la population totale de Mossendjo en 2020 projetée par l'INS à 17.735 habitants, la taille de l'échantillon serait de :

$$n = 17\,735 / (1+ 17\,735 \times 0{,}05^2) = 391 \text{ habitants.}$$

En ajoutant 10% des pertes liées aux enquêtes du terrain, nous avons une taille d'échantillonnage de n = 430 habitants. Or, les données du plan directeur d'urbanisme précisent que la taille moyenne de ménage à Mossendjo est de 5,67 personnes par ménage.

En définitive, le nombre de ménages de notre échantillon a été de n = 430 / 5,67 = 75,84 ménages, que nous arrondissons à 76 ménages. Mossendjo comptant dix quartiers, nous avons reparti cet échantillonnage de façon aléatoire, à raison de sept (07) ménages/quartier.

IV.3. Résultats et Interprétations

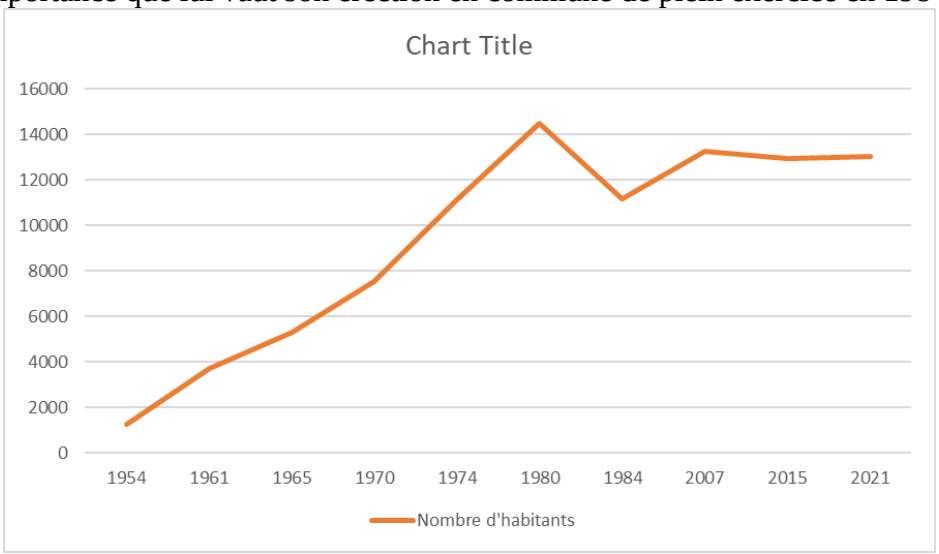
Les données de l'enquête de terrain nous ont éclairés sur la situation urbaine actuelle de la ville de Mossendjo. Pour une meilleure appréciation de la situation, nous avons croisé ces données avec celles du Plan d'urbanisme (PDU) de 1982, ainsi que le résultat et les estimations du dernier recensement de la population et de l'habitat de 2007. Cela nous a permis de distinguer les séquences d'évolutions démographiques qu'a connues Mossendjo au cours de la période 1982 – 2020 et de constater si les prévisions du dernier recensement de la population ont été vérifiées ou non, afin d'en tirer les enseignements sur la croissance et la décroissance de la ville de Mossendjo.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

IV.3.1. Evolution de la population urbaine

Les recensements de 1960 à 2007 montrent la décroissance démographique de la ville de Mossendjo. Ce qui a une incidence sur son rang dans l'armature urbaine nationale.

On l'apprécie mieux sur le graphique n°1 ci-dessous. Celui-ci montre une évolution lente mais régulière de la population de la ville de 1954 à 1980 : une période correspondant à l'installation d'une industrie forestière autour de la ville. Le chemin de fer COMILOG ouvert en 1962 a été également déterminant dans la croissance de la ville pendant cette période, tout d'abord par le chantier lui-même qui s'est déroulé de 1960 à 1962, ensuite par la présence de la gare, le trafic du bois et toutes sortes de relations commerciales. Mossendjo est ainsi devenu la cinquième ville du Congo, et a eu un rôle de capitale administrative et commerciale du Chaillu occidental. C'est de cette importance que lui vaut son érection en commune de plein exercice en 1984.



Graphique n°2 : Evolution de l'effectif de la population de Mossendjo de 1954 à 2021 (source : enquête personnelle, 2020)

A partir de 1980, on constate une décroissance de la population urbaine. C'est le début de la désindustrialisation de la ville causée par la fermeture des sites d'exploitation forestière pour des reboisements.

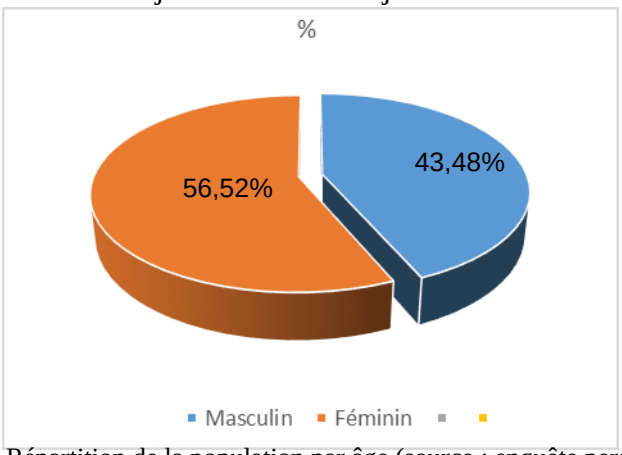
En fait, plusieurs périodes de croissance et de décroissance sont constatées de 1980 à 2021. Elles correspondent à des crises majeures dans le pays. En effet, le début des années 1990 voit l'avènement de la démocratie pluraliste au Congo. Cela a un effet catalyseur sur les villes où les populations, libérées des contraintes du tout-Etat caractérisant le monopartisme, s'essaient à des investissements de toutes sortes. Cela se traduit par un retour des habitants qui viennent créer des petites entreprises agricoles et artisanales. La

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

forte croissance autour de 2000 est imputable à la guerre civile, qui survient en 1997, faisant fuir les ressortissants de Mossendjo des villes de Brazzaville et de Dolisie, théâtres des affrontements armés, qui reviennent chez eux. Ils sont rejoints, pour les mêmes raisons, par les ressortissants des départements de la Bouenza et du Pool. La décroissance à partir de 2005 correspond au retour de la plupart des réfugiés de guerre dans leurs localités originelles de résidence ou de travail. Depuis lors, la ville de Mossendjo perd ses habitants en faveur des grandes villes de Brazzaville, Pointe-Noire et Dolisie ; essentiellement pour des raisons d'emploi et de scolarité, Mossendjo n'abritant plus aucune industrie. L'essentiel de l'activité de ses habitants est l'agriculture, avec des moyens de production rudimentaires, accentuant la pénibilité. Car, contrairement aux prévisions du recensement général de 2007 pour les années à venir, la ville de Mossendjo n'a fait que perdre d'habitants. Les recensements électoraux de 2012, 2016 et 2021 ont prouvé le contraire de ce qui était projeté par le dernier recensement de 2007.

IV.3.2. Structure par sexe, âge et par niveau scolaire de la population

92,65% de la population de Mossendjo ont au plus 45 ans et 7,13% de la population a plus de 55 ans. Cette dominance montre que la population de Mossendjo est majoritairement jeune. On constate toutefois une baisse de la population sur une tranche d'âge de 25-30 qui s'explique par une émigration professionnelle dans d'autres centres urbains du pays, particulièrement Dolisie, Pointe-Noire et Brazzaville. Cela traduit l'absence dans la ville des activités économiques et des établissements d'enseignement de second degré et supérieur pour fixer ses jeunes à Mossendjo.

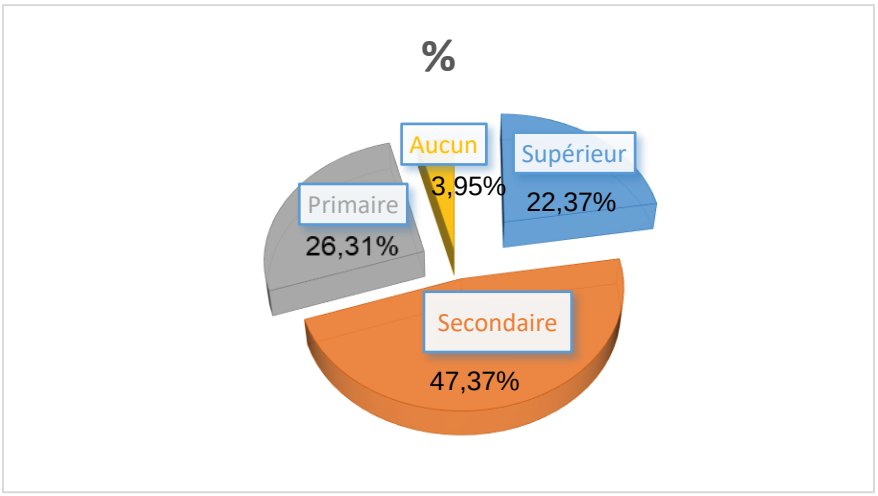


Graphique 3 : Répartition de la population par âge (source : enquête personnelle, 2020)

L'enquête a montré également que Mossendjo compte plus de femmes que d'hommes. Cela s'explique par le fait que l'émigration professionnelle

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

concerne plus les hommes qui vont à la recherche d'un emploi vers les grands centres urbains.



Graphique n°4 : structure de la population de Mossendjo par sexe (Source : Enquête Personnelle)

En outre 70% des chefs de ménages ont atteint les niveaux secondaire et supérieur, seul 4% n'ont pas été à école.

Graphique n°5 : structure de la population de Mossendjo par niveau d'instruction des chefs de ménage (Source : Enquête personnelle)

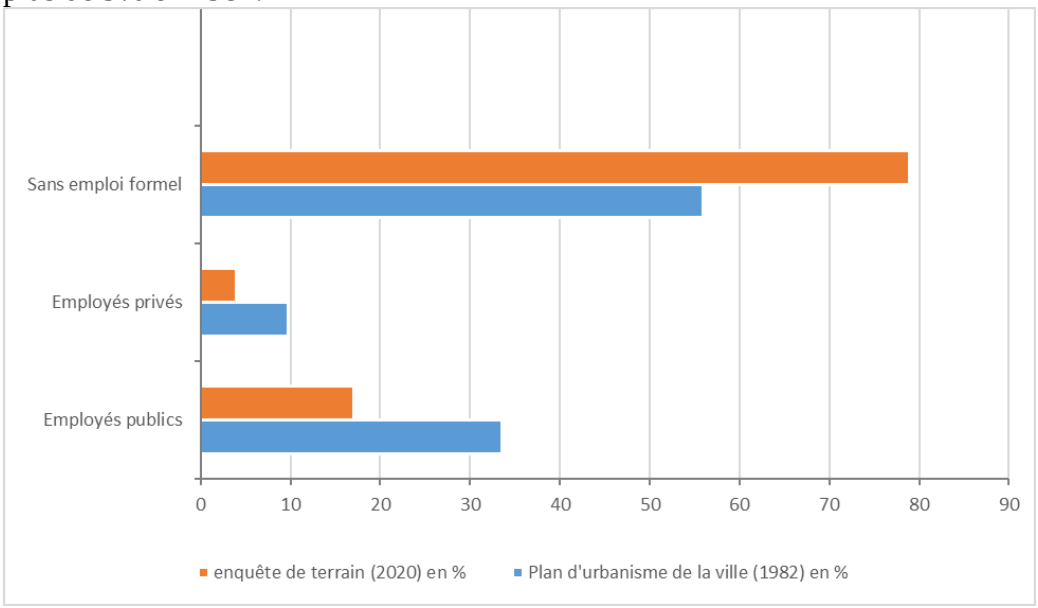
Ce paramètre, conforme à la valeur nationale, montre que la ville dispose d'un potentiel humain intéressant pouvant être mobilisé à travers une politique urbaine de lutte contre la décroissance urbaine.

IV.3.3. *Catégorie socioprofessionnelle*

Les données du Plan d'urbanisme de la ville disposent qu'en 1982, Mossendjo comptait environ 13000 habitants dont 44% des ménages ayant un

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

emploi contre 56% sans emplois. Par ailleurs, notre enquête montre qu'aujourd'hui 79% de la population est aujourd'hui sans emploi contre 17% qui en sont pourvus. Le secteur privé n'emploie plus que 4% contre un peu plus de 9% en 1982.



Graphique n°6 : structure de la population de Mossendjo par catégorisation professionnelle (Source : Enquête personnelle)

IV.3.4. Diagnostic socio-économique

L'activité économique est l'un des piliers de développement d'une ville. A Mossendjo, les activités économiques se pratiquent en majorité dans l'informel. Elles sont reparties selon leur secteur comme suit :

IV.3.4.1. Secteur primaire

Le secteur primaire regroupe plusieurs activités qui sont liées à l'exploitation de ressources naturelles : agriculture, sylviculture, pêche, et activités minières.

a) *Les activités agricoles*

Entre 1974 et 1984, Mossendjo était une ville d'expérimentation agricole et de formation des petits exploitants pour la région du Niari du fait de son sol favorable à l'agriculture. Les spéculations les plus courantes étaient le riz, l'arachide, le maïs et le manioc. Au cours de notre enquête, l'agriculture est restée l'une des principales activités de la ville de Mossendjo, environs 90% des populations pratiquent une activité agricole, malgré son faible rendement, avec des outils rudimentaires. La production est destinée à l'auto-consommation.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

On y réalise également des cultures vivrières et de rente, notamment le manioc, la banane, l'igname, les agrumes, le safou, le maïs, l'arachide, la tomate, divers légumes, les taros, les noix de palme, et huile de palme. L'essentiel de leur production est commercialisé dans les marchés nationaux, essentiellement ceux des villes de Dolisie et Pointe-Noire.

Tableau : *Organisation des pratiques agricoles formelles à Mossendjo*

Dénomination	Activités pratiquées	Produits	Surface de culture
Agrolissali	Cultures de rente	Banane	6 ha
Groupement coopératif de Litsandou	Culture de rente	Banane	12 ha
CODAM	Cultures de rente, pisciculture	Manioc, poissons	12 ha
Agriculteurs de niveau baccalauréat et plus	Cultures de rente, maraîchage	Légumes, banane, arbres fruitiers	63 ha
Autres Agriculteurs	Cultures de rente, pisciculture, maraîchage	Légumes, banane, arbres fruitiers	180 ha
		Total	**261 ha**

Source : direction de l'agriculture de la ville de Mossendjo

b) L'exploitation et transformation des produits forestiers et agricoles

L'exploitation forestière est aussi l'une des principales activités économiques de la ville de Mossendjo. Mais avec l'arrêt de la fourniture en dents de scie des prestations des menuiseries de l'école nationale des eaux et forêts (ENEF) et de l'église Catholique, des exploitations forestières des sociétés TAMAN Industries, Asia-Congo et Afriwood. Seule Sicofor exerce encore ses activités dans les forêts du massif du Chaillu, cette activité a connu une forte baisse d'activités à partir de 2018, ce qui a occasionné des pertes d'emplois et une chute considérable du pouvoir d'achat des ménages et de l'activité économique dans la commune.

c) *La chasse et la pèche*

La chasse et la pêche sont aussi des activités rémunératrices de la ville de Mossendjo. Elles sont régulièrement pratiquées par les habitants de la ville. Mais elles se font de façon rudimentaire. L'Etat a mis en place dans la ville une antenne de la direction des eaux et forêts pour réglementer ce trafic. Par ailleurs, le ravitaillement en poisson n'est pas évident face au désintéressement de la population à la pêche malgré la présence d'une hydrographie importante. Ce qui d'ailleurs cause la cherté des prix du poisson sur le marché local et favorise l'importation des produits congelés.

IV.4.3.2. Le secteur secondaire

Le secteur secondaire regroupe les activités liées à la transformation des ressources naturelles. Il est regroupé en deux types d'activités : artisanal et industriel.

a) Activité artisanale

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Les activités artisanales dans la ville de Mossendjo portent sur la transformation du manioc, de l'arachide, des fruits et la production des beignets, d'huile de palme, de la boisson locale à base de sève de palmier, la fabrication du savon, la boulangerie, la pâtisserie, etc. Toutes ces activités sont réalisées avec les moyens rudimentaires, ne permettant pas de grandes productions.

b) *Activité industrielle*

Les activités industrielles sont essentiellement celles consacrées à l'exploitation de la forêt et des ressources minières.

IV.3.4.3. Le secteur tertiaire

Le secteur tertiaire est caractérisé par les commerces, les services, les nouvelles technologies, les microfinances et le tourisme.

a) Les activités commerciales

Depuis le départ définitif des commerçants portugais à la fin des années 80 et la faillite des grands commerçants congolais qui exerçaient dans le domaine, l'activité commerciale est limitée à quelques boutiques tenues par des citoyens ouest africains et quelques congolais. Toutefois, le secteur commercial informel est plus important. Même si la ville dispose de trois marchés domaniaux qui ont une faible capacité d'accueil, on observe aussi des étalages des produits le long des rues et ruelles de la ville.

b) *Les activités de microfinance*

Depuis la fermeture de la banque commerciale congolaise dans les années 1990, la ville de Mossendjo n'a plus de banque. Les activités financières sont réalisées à travers des établissements de microfinance qui se sont installés dans la ville dans les années 2000. Les quatre établissements existants sont spécialisés dans le transfert de fonds, l'épargne et le crédit. Il s'agit des sociétés CHARDEN-FARRELL et MAOUENE qui assurent les opérations de transfert direct d'argent ; de la Caisse Congolaise d'Epargne et de Crédit (CCEC) et de la Mutuelle d'Epargne et de Crédit (CMEC) qui collectent l'épargne.

c) Les activités touristiques

En dépit des potentialités naturelles qu'offre la ville, notamment les chutes de Mourala et d'Itsibou ainsi que les espaces forestiers qui abritent une faune et une flore importantes, le tourisme est balbutiant et peu exploité. Ce qui se traduit par l'absence d'une stratégie de développement capable d'impulser un dynamisme dans le secteur, l'insuffisance des établissements d'accueil (hôtels et restaurants) et le faible développement des transports.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Discussion

Les données de notre enquête confirment celles des recensements de la population qui montrent la décroissance démographique de la ville de Mossendjo. Cette décroissance due essentiellement à l'absence d'industries entraine progressivement une désurbanisation. La part de la population agraire croit de plus en plus ; elle atteint aujourd'hui 90% de la population ; il s'agit plus de l'agriculture de subsistance et très peu commerciale.

La structure de l'emploi indique également cette ruralisation de la ville, 79% de la population de Mossendjo est sans emploi. L'absence d'une politique urbaine efficace et prospective ne plaide pas en faveur d'une inversion du processus. C'est ce qui se lit à travers la répartition par sexe de la population, Mossendjo compte 56,52% de femmes.

La population urbaine est relativement jeune. Notre enquête de terrain a montré que 92,65% de la population de Mossendjo a moins de 45 ans et 7,13% de la population âgée de plus de 55 ans. Le constat sur la baisse de la population de la tranche d'âge de 25-30, due à une émigration professionnelle vers les grandes villes, est un bouleversement structurel important. Cette crise urbaine due aux pertes d'emplois et de population a déclenché une dégradation du tissu urbain et entrainé une grande pauvreté urbaine.

La pauvreté augmente en proportion non seulement parce que la situation des habitants restés sur le territoire urbain se détériore, mais aussi parce que les populations les plus favorisées quittent la ville. Notre enquête montre d'ailleurs que 75% des habitants de la ville de Mossendjo est au chômage.

Tous ces indicateurs négatifs expliquent la décroissance de la ville de Mossendjo, on dira même la ruralisation de cette ville. Malheureusement, cette situation n'est pas correctement appréhendée par les acteurs politiques locaux et nationaux. Pourtant ce processus, observable également dans d'autres villes du pays, ne peut que remettre en question les modèles traditionnels de développement local et d'aménagement urbains s'appuyant sur le référentiel de la croissance. Il convient d'imaginer une autre politique urbaine.

Conclusion

La décroissance de la ville de Mossendjo est due aux mêmes facteurs qui entraînent la décroissance urbaine dans d'autres villes : *démographique* par la perte des populations ; *économique* par la perte d'activités, de fonctions, de revenus et d'emploi ; et *socia*l par le développement de la pauvreté urbaine, du chômage et de l'insécurité. Notre enquête a confirmé ce processus de déclin qui se poursuit actuellement. Cela implique donc de la part des pouvoirs nationaux et locaux des mesures concrètes pouvant inverser le processus, autrement dit une nouvelle politique urbaine s'appuyant sur les atouts et forces de la ville.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Les politiques urbaines ont en commun une focalisation importante sur les espaces centraux des villes, considérés comme des secteurs prioritaires, à réhabiliter, à valoriser et à aménager, afin de peser dans la concurrence interterritoriale. L'amélioration du cadre de vie, la conversion de l'économie locale vers le secteur tertiaire et l'attraction de nouveaux résidents constituent en général les objectifs centraux de ces politiques, en vue de renouer avec une situation de croissance démographique et économique.

Selon des experts du fait urbain, la stratégie de lutte contre la décroissance devrait être multidirectionnelle et porter sur les opérations programmées d'amélioration d'habitat (OPAH), la requalification des quartiers anciens dégradés, le réaménagement des espaces publics (remodelage de places, travaux sur la voirie ou le stationnement, revitalisation des espaces centraux), la lutte contre la vacance commerciale, les actions en matière de diversification du commerce et des activités économiques, le développement culturel et le tourisme. Ce type de stratégie a pour objectif d'attirer des résidents issus des classes moyennes et supérieures.

Les autorités locales de la ville de Mossendjo doivent donc, dans l'élaboration du nouveau plan de développement urbain (PDU), intégrer ces éléments de dynamisation du tissu urbain afin que la ville puisse progressivement relever le défi de l'attractivité, de la croissance et du développement.

References:

1. CUNNINGHAN-SABOT E., FOL S., ROTH H. et WOLFF M. (2013). Shrinking cities, villes en décroissance : une mesure du phénomène en France. Cybergeo : european Journal of géograpghy (en ligne), Aménagement, Urbanisme, document 661, mis en ligne le 08 décembre 2013, consulté le 13 novembre 2021, URL : http://journals.openedition.org/cybergeo/20136;DOI :http://doi.org/10.4000/cybergeo26136.
2. DIMOU M., SCHAFFAR A. (2011). Les théories de la croissance urbaine. Revue d'économie politique, Vol. 121, Paris, pp 179 - 207.
3. DUMONT G.-F., CHALARD L. (2010). Croissance et décroissance des villes françaises : la typologie des évolutions démographiques – Revue Population et Avenir n°699, pp. 4 - 7.
4. FLORENTIN D. (2016) Notion en débat : shrinking city. Geoconfluences, Lyon. URL : http://geoconfluences.ens-Lyon.fr//informations-scientifiques/à-la-une/notion-à-la-une/notion-shrinking-city.
5. FLORENTIN D. (2018). Les défis de la décroissance urbaine. Revue de l'Institut Veolia, Aubervilliers, France, pp. 16 - 19.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

6. FOL S., CUNNINGHAM-SABOT E. (2010). Déclin urbain et Shrinking Cities : une évaluation critique des approches de la décroissance urbaine. *Annales de géographie*, vol. 674, n°4. pp. 359 - 383.
7. HAMEZ G., MOREL-DORIDAT F. (2019). La recherche scientifique sur les shrinking cities : apport de la bibliométrie. Cybergeo : Revue européenne de géographie / European journal of geography, UMR 8504 Géographie-cités, pp. 9 - 20. 10.4000/cybergeo.32354 halshs-02476706.
8. INSEE. (1990 et 2011). Recensements de la population française.
9. LANG, T. (2012). Shrinkage, Metropolization and Peripheralization in East Germany - *European Planning Studies*, cité par Agence Nationale de la Cohésion des Territoires (2021). La décroissance urbaine : enjeux, clés d'analyse et action publique – Etudes, Paris, juillet 2021, 69 pages.
10. OCDE, Cahier de l'Afrique de l'Ouest (2020) Dynamiques de l'urbanisation africaine –, Africapolis, une nouvelle géographie urbaine, OECD iLibrary, 203 pages.
11. ROTH, H. (2011). Les "villes rétrécissantes" en Allemagne - *Géocarrefour*, vol. 62, n° 2, pp. 75 - 80.
12. SHAFFAR A. (2009) Croissance et hiérarchie urbaines dans les pays émergents – Thèse de doctorat, Université de la Réunion; Université de Toulon Sud, 330 pages.
13. SHAFFAR A. (2009). La loi de Zipf dans la science régionale : entre ancienne controverses et nouvelles perspectives - Cybergéo, Revue Européenne de Géographie, Système, modélisation et géostatiques, n°450, 26 pages.
14. SONKOLY G. (1996). Comment définir une hiérarchie urbaine ? La Transylvanie entre 1750 et 1857 – Cahiers du centre de recherches historiques (en ligne), 17, mis en ligne le 27 février 2009, consulté le 25 septembre 2021, URL, http//journals.openedition.org/ccrh/2616.
15. THOUEZ J-P. (1972). Étude de la hiérarchie des villes du Québec en fonction de leur population selon le modèle de Zipf – Revue L'actualité économique, Volume 48, numéro 3, pp.519 - 525.
16. VENNETIER Pierre (1966). Géographie du Congo Brazzaville – Ed. Gauthier – Villars, Paris, 174 pages.
17. ZIAVOULA E. R. (1996). Villes secondaires et pouvoirs locaux en Afrique subsaharienne : le Congo – Nordiska Afrikainstutet, Suède, 145 pages.

ESJ Social Sciences

Examining the Relationship Between the Aspects of School Working Conditions and Teachers' Intent to Stay as Mediated by Job Satisfaction

Petros Woldu Fessehatsion
Dr. Pai Peng
School of Education,
Huazhong University of Science and Technology, Wuhan, China

Doi:10.19044/esj.2022.v18n12p213

Submitted: 14 April 2022
Accepted: 28 April 2022
Published: 30 April 2022

Copyright 2022 Author(s)
Under Creative Commons BY-NC-ND
4.0 OPEN ACCESS

Cite As:
Fessehatsion P.W. & Peng P. (2022). *Examining the Relationship Between the Aspects of School Working Conditions and Teachers' Intent to Stay as Mediated by Job Satisfaction*. European Scientific Journal, ESJ, 18 (12), 213.
https://doi.org/10.19044/esj.2022.v18n12p213

Abstract

This study sought to examine the relationship among the aspects of school condition, job satisfaction, and intent to stay with a sample size of 833 teachers working at elementary, middle, and secondary schools in the central administration of Eritrea. Survey data were analyzed using a structural equation model (SEM). Our results showed that teachers were more likely to stay in their profession when they experienced supportive school leadership, effective professional development, and more access to school resources. Besides, the study revealed that early career teachers are more likely to leave than their mid-career, and veteran counterparts. Moreover, the findings demonstrated that overall job satisfaction partially mediates the relationship between intent to stay and (a) leadership support, (b) school resources, (c) professional development, and (d) students' discipline. The practical implication of the findings suggested that measures targeting the improvement of the school environment should also aim to enhance overall job satisfaction to retain teachers in their profession.

Keywords: Eritrea, Intent to stay, Job satisfaction, School Working Condition

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Introduction

The most vital and important resource in an education system is the teaching force because the quality and strength of the educational system depend on the availability of experienced and effective teachers (Brill & Mccartney, 2008; Ashiedu & Scott-ladd, 2012). The problem of recruiting and retaining sufficient teachers in schools is a worldwide phenomenon (DeAngelis & Presley, 2011; Mulkeen & Crowe-Taft, 2010). Developing countries, particularly Sub-Saharan Africa, have the largest teaching force shortage at all levels (UNESCO-UIS, 2013). This shortage of teachers is partly caused by high attrition rates among teachers, apart from the limited supply of the teachers' training institutions. According to large quantitative data from the developed world, the main remedy is to devise efficient and effective strategies to retain and sustain teachers in the profession (Holbeche, 2009; Inman & Marlow, 2004).

Teacher retention conceived as keeping teachers in their profession is an epiphenomenon resulting from effective schools (Aldridge & Fraser 2016). Conducive school working condition is positively associated with improved students' performance, increased graduate rate, and teacher retention (Ingersoll 2001; Johnson et al., 2012). It is argued that a school with conducive working conditions can be attractive, satisfying, and engaging for both the students and teachers (Roch & Sai, 2018; Smith et al., 2014). In such an environment, students can flourish and teachers can persevere and be steadfast in their profession. For this reason, scholars, researchers, and policymakers have diverted their attention towards teacher retention to enhance and assure the quality of education standards (Hughes, 2012; Geiger & Pivovarova, 2018).

Since school working conditions play an important role in retaining teachers (Kelchtermans 2017), it is crucial to examine its components. Some of the components include school leadership, remuneration, professional development, self-efficacy, teacher autonomy, and so on were found to contribute to teachers' intent to leave (Ladd, 2011; Struyven & Vanthournout, 2014). Previous studies focused more on the problems rather than teachers' motives to stay in the profession. In this study, we aimed to fill the above-mentioned gap. It deserves attention due to the belief that retaining experienced and effective teachers could contribute to transferring best practices to new teachers and bolster school teachers' professionalism. Furthermore, the majority of the few studies on teachers intend to stay focused on either novice or veteran teachers separately which left a gap to investigate teachers of all career levels in a single research framework.

Eritrea, like many Sub-Saharan African countries, experiences a serious teacher shortage at all levels of the school system caused largely by teacher attrition (Harber 2017). There have been few previous studies on this

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

topic in the country. To contribute to the limited teacher retention literature in Sub-Saharan Africa and increase the knowledge of teachers' retention in the region, this study examined the aspects of school conditions that contribute to teachers' intent to stay in Eritrea. Specifically, this study examines the relationship between the constituents of the school condition and intent to stay mediated by overall job satisfaction.

More specifically, the following questions have been used to guide the study;

a) Is there a significant positive relationship between the aspects of school working conditions and the intent to stay?
b) Is there a significant relationship between the aspects of school condition and overall job satisfaction?
c) Does overall job satisfaction mediate the relationship between aspects of the school condition and intent to stay?

Literature Review

According to Aboobaker et al. (2019) intent to stay refers to an employee's conscious and deliberate willingness to remain in the organization. It is regarded as a good indicator of actual retention in the teaching profession (Perrachione et al., 2008). Studying teachers' intent to remain is vital to understand why some teachers continue and others leave the profession. Decades of studies have documented some of the factors associated with teachers' intent to stay. Personal, working conditions, psychological, social, economic, and external factors are the most cited considerations linked to teachers' intent to stay (Swars et al., 2009; Fall & Billingsley, 2011). For instance, Bettini et al. (2020) documented school resources, collegial support, and school leadership as aspects of school working condition factors linked to teachers' intent to stay. Therefore, our examination was based on the empirical literature exploring the school working condition variables in relation to overall job satisfaction and teachers' intent to stay in schools worldwide (Roch & Sai, 2018; Nguyen, 2021).

The Aspects of School Working Conditions

Many studies suggest that school working condition plays a determinant role in retaining teachers in their profession (Chesnut & Cullen 2014; Hahs-Vaughn & Scherff, 2008). The majority of studies on teachers' retention were conducted in developed countries, and few were conducted in developing countries, specifically, Sub-Saharan African countries. Therefore, this study focused on the effect of the school condition components on teachers' intent to stay mediated by job satisfaction in Eritrea, a Sub-Saharan African country.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

A school that provides suitable and conducive conditions of employment and a collaborative environment could be in a better position to retain good teachers (Fullan 2001). School condition-related variables such as leadership support, collegial support, student behavior, and professional development are considered important for enhancing teachers' commitment and continuity (Ingersoll, 2001; Johnson et al., 2012). In this regard, considerable studies claimed that a supportive and positive environment helps to retain teachers in their profession (Billingsley et al., 2020). The supportive school administration is the most cited school environment factor that helps retain teachers in the profession (Aldosiry, 2020; Ladd, 2011). It was also claimed that when teachers have a positive relationship with their colleagues, they are likely to stay in school (Roch & Sai, 2018). Besides, many studies contend that continuous professional development plays an important role in increasing retention (Curry et al., 2005; Ladd, 2011).

Students' discipline is another aspect of the school working climate that affects teachers' intent to stay (Geving, 2007; Perrachione et al., 2008). Students' behavior has been cited as a force that pushes teachers to leave the teaching profession (Kim et al., 2005; Wynn et al., 2007). Moreover, Loeb et al. (2005) and Bettini et al. (2020) in their study reported that the physical features of the school and the availability of instructional resources were significant contributors to teachers' continuity. Fall and Billingsley, (2011) suggested that schools with adequate resources are more likely to retain teachers in their profession.

In conclusion, we conceptualized the school working conditions include (a) level of administrative support (b) teachers' collegial relationships (c) professional development (d) availability of resources, and (e) students' discipline. This conceptualization is based on the work of Kukla-Acevedo (2009), which we believe reflects the Eritrean school context.

Job Satisfaction

Job satisfaction is a critical variable related to employee retention (Tourangeau & Cranley 2006). Teachers who feel a sense of satisfaction with what they do are more likely to remain longer in the profession (Okubanjo, 2014; Weiqi, 2007). Similarly, Al-Omari et al. (2008) and Perrachione et al. (2008) argued that satisfied teachers are more likely to remain in the teaching profession. Factors affecting teachers' job satisfaction include school leadership, collegial relationships, career development opportunities, and students' behavior (Liu & Ramsey, 2008; Nir & Bogler, 2008; Liu, 2012). In this study, we decided to measure job satisfaction as overall satisfaction of teachers based on the work of Skaalvik and Skaalvik (2014).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Conceptual Framework

Many recent studies have documented that the working condition is highly related to job satisfaction and the decision to stay in the profession (Ashiedu & Scott-ladd, 2012; Cha & Cohen-Vogel, 2011). Unfortunately, studies in Sub-Saharan African countries are very limited, and narrow in scope. In particular, the interplay among the aspects of school condition, job satisfaction, and intent to stay is under-investigated. Therefore, the current study focuses on Eritrea, a Sub-Saharan African country, which is under educational reform. The present study seeks to examine the interrelationship between the aspects of school conditions and teachers' intent to stay mediated by job satisfaction using a structural equation model analysis. The conceptual framework for this study is-thus developed, as indicated in Figure 1.

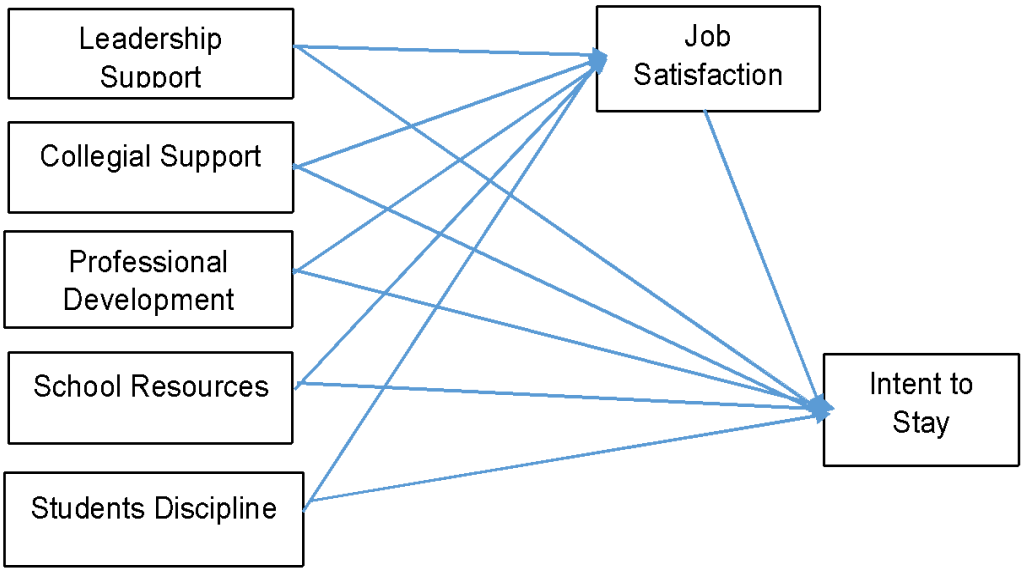


Figure 1. Conceptual model Based on Literature

Methodology

This study used a quantitative and correlational research design using a questionnaire to collect data on the identified school working condition factors that predict teachers' intent to stay. Teachers' retention was measured alongside five school condition variables and job satisfaction. A total of 950 elementary, middle, and secondary school teachers in the central region of Eritrea participated in the survey. They were randomly selected from 53 schools including 21 elementary, 18 middles, and 14 secondary schools found in both urban and rural areas in the region, based on socio-economic characteristics, and student population. A total of 848 filled questionnaires were collected representing a return rate of 89%.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Instruments

Aspects of School Working Environment: The school working condition scale consisted of five variables based on previous research. These include leadership support (Skaalvik and Skaalvik, 2011), professional development (Geiger & Pivovarova, 2018), collegial support (Jo, 2014), and the constructs of students' behavior, and school resources were developed based on the studies of Struyven and Vanthournout, (2014) and Johnson et al. (2007). Originally 23 items were included to measure the attitudes of teachers on the five constituents of school conditions. The leadership support factor consisted of five items. The constructs of students' behavior, collegial support, and school resources consisted of four items each. Finally, six items were connected to professional development factors. Each item was measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Job satisfaction: To assess the overall job satisfaction of the respondents, 6 items were developed based on existing literature (Skaalvik & Skaalvik 2011; Skaalvik & Skaalvik 2014). The items were measured based on a 5-point Likert scale ranging from 1(strongly disagree to 5(strongly agree).

Intent to Stay (Retention): The constructs of the intent to stay (retention) were measured with 5 items based on empirical works on teachers' retention (Kyndt, et al., 2009; Skaalvik & Skaalvik, 2011). All the items were measured based on a 5-point Likert scale ranging from 1(strongly disagree) to 5 (strongly agree).

Data Collection and administration

After receiving permission from the Central Region Ministry of Education (MoE) branch office, the researchers contacted the school directors of the selected schools. After explaining the aim of the study, we requested permission to distribute questionnaires to representative teachers in their schools. All the school directors offered their endorsement and the pedagogy heads of the schools gave us a list of teachers whereby respondents were selected randomly. The participants responded to the paper-based survey and were asked to submit it back to the pedagogy head within 3 to 5 days of distribution. Of the total of 848 questionnaires collected, 833 were valid for data analysis. Approximately 460 (55.2%) were male, and the remaining 373 (44.2%) were female teachers. A slight majority of the teachers were working at the elementary level (37.2%), middle school 34.7%, and secondary school 28.1%. In reference to their locales, 60.7% were from urban schools, 8.8% were from suburban schools, and the remaining 30.5% were from rural schools.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Table 1. Results of teachers' demographic characteristics

Teacher Characteristics	Frequency	%age
Gender		
Male	460	55.2%
Female	373	44.8%
Age		
25 or under	90	10.8%
25-35	299	35.9%
36-45	191	22.9%
46 and above	253	30.4%
Highest Degree		
Certificate	254	30.5%
Diploma	362	43.5%
Bachelor Degree	211	25.3%
Master Degree	6	.7%
Marital Status		
Unmarried	297	35.7%
Married	536	64.3%
Teaching Experience (years)		
0-5	160	19.2%
6-10	197	23.6%
11-15	92	11.0%
16-20	115	13.8%
Greater or Equal to 21	269	32.3%
School Level		
Elementary	310	37.2%
Middle	289	34.7%
Secondary	234	28.1%
School Location		
Urban	506	60.7%
Sub-Urban	73	8.8%
Rural	254	30.5%

Data Analysis

Descriptive, correlational and inferential analyses were performed using the Statistical Package for the Social Sciences (SPSS) Version 23. The mean and standard deviation were used to determine the response levels of the teachers regarding the variables. Moreover, a one-way analysis of variance (ANOVA) was performed to examine the significance of the group difference in the intent to stay across the teacher careers (novice, mid-career, and late-career).

Confirmatory factor analysis (CFA), and structural equation modeling (SEM) were applied to analyze the data using AMOS 21 software. First, we

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

analyzed the confirmatory factor analysis of the individual variables correlated to their respective Items of measurement. Second, we conducted a confirmatory factor analysis of all variables in a single model with their corresponding items of statements. Finally, three models of SEM were analyzed to estimate the measured variables, and create a causal relationship among them simultaneously (Byrne, 2012). The goodness of fit of the structural equation model was evaluated using indices including CFI, IFI, TLI, and RMSEA (Kline, 2016). For the CFI, IFI, and TLI indices, values greater than .95 are considered acceptable as a good fit to the data (Byrne, 2012). Moreover, RMSEA values of .05 or less are considered indicators of good fit (Kline, 2016).

Results

Descriptive statistics

and correlations are reported in Table 2. The mean response for both Collegial support and intent to stay was lower compared to the teachers' mean response to the remaining five variables. The inter-correlations among all the variables were statistically significant at the $p < .01$ significance level. All independent variables showed a statistically positive correlation with intent to stay as presented in Table 2. Job satisfaction had the highest correlation with leadership support ($r = .50$, $p < .01$), followed by school resources ($r = .47$, $p < .01$), and professional development ($r = .39$, $p < .01$). Intent to stay was strongly associated with job satisfaction ($r = .62$, $p < .01$), followed by school resources ($r = .475$, $p < .01$), and professional development ($r = .43$, $p < .01$).

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Table 2. Descriptive and correlation results

Variables	M	SD	PD	SD	CL	SR	LS	Js	Is
Profess_Dev	3.613	.824	1						
Student_Dis	3.584	.760	.407**	1					
Colleg_sup	2.937	.390	.448**	.367**	1				
School_Res	3.638	.766	.666**	.563**	.447**	1			
Leader_Sup	3.529	.552	.587**	.433**	.382**	.561**	1		
Job Satisfaction	3.922	1.099	.397**	.387**	.250**	.473**	.499**	1	
Intent to Stay	2.344	.9589	.428**	.301**	.200**	.475**	.419**	.620**	1

Note. ** significance level at p <.01

The One-Way ANOVA test was carried out to investigate the difference in the teachers' intent to stay across different career stages. The result indicated that teachers with less than five years of experience (early stage of their career) had lower intent to stay (M=2.18, S.D = 1.02) compared to their counterparts with experience between eleven to twenty years (M = 3.05, S.D = 1.18), and veteran teachers with more than twenty years of experience (M=3.49, S.D = 1.08). It is clear from this finding that veteran teachers have shown a higher probability of continuing in their profession compared to their early career and mid-career counterparts.

Table 3. Result of One-Way ANOVA test intent to stay by career stages

					Welch Robust Test of Equality of means			
Variable	**Categories**	**N**	**Mean**	**S.D**	**Statistic (F)**	**df1**	**df2**	**Sig.**
Teaching Experience	<= 5 years	160	2.184	1.019				
	6-10	197	2.342	1.099				
	11-20	207	3.047	1.179	70.037	3	435.367	.000
	>=than 21	269	3.489	1.076				

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Evaluation of Measurement Models

Measurement model readjustments guided by theory were made until an acceptable model fit and data were obtained. First, the measurement model for the latent models of the aspects of school working conditions was formulated, and their fit and factor loadings are presented in Table 3.

Table 4. Factor Loadings of the latent variables of School Working Environment

Latent Variable	Lead_Sup	Coll_Sup	Prof_Dev	Sch_Res	Stud_Dis
Items' standardized Loadings and standard Errors	SL_1 .75 (.025) SL_2 .84(.025) SL_3 .74(.025) SL_4 .70 (.029) SL_5 .66 (.026)	CL_1 .78 (.025) CL_2 .77(.024) CL_r3 .63(.024) CL_4 .451 (.032)	PD_1 .74(.037) PD_2 .72(.040) PD_3 .75(.037) PD_4 .59(.037) PD_5 .61(.039) PD_6 .71(.038)	SR_1 .71(.043) SR_2 .74(.037) SR_3 .74(.038) SR-4 .53(.044)	SD_1 .82 (.031) SD_2 .71(.036) SD_3 .79(.030) SD_r4 .69(.038)
Residual Covariance			Pd_4 with PD_5 .132(.032)		SD_2 with SD_r4 .178(.031)
X^2/df	2.544	1.877	1.774	1.00	1.803
CFI	.996	.998	.996	1.00	.999
SRMR	.0162	.0120	.0146	.0028	.0052
RMSEA	.043	.032	.031	.000	.031

The measurement models of leadership support, collegial support, and school resources obtained a good fit. The measurement models for professional development and student discipline obtained a good fit after allowing for residual correlations. For professional development, residuals of the items related to "PD_4" and "PD_5" showed a substantial commonality and thus, allowed to be correlated. Similarly, for students' discipline, residuals of the items "SD_2" and "SD_r4" displayed a substantive communality, and were allowed to be correlated.

The second step was to confirm the CFA of job satisfaction (JS) measurement model which was composed of five items. The second revised model of the job satisfaction test allowed the correlations of the error variance between JS_1 and JS_4, and JS_4 and JS_6. The result of the chi-square along the other model fit indices showed the best-supported model fit of the data (X^2 (3) = 1.895, p =.602; SRMR = .0043 and RMSEA = .000). All the standardized factor loadings were significant at $p < .05$ level. The values of the factor loadings ranged from .63 to .86. The internal consistency of the constructs of the job satisfaction were at their best level with a Cronbach alpha = .889.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

The third step was to confirm the measurement model of the intent to stay composed of five items. The initial measurement model did not fit the data well. After several model fit test trials, by allowing the error variance of RET_5 to be correlated with both RET_2 and RET_4, the best model fit was achieved. The result of the chi-square along the other better model fit indices showed the best-supported model fit of the data (X^2 (3) = 5.332, p =.149; SRMR = .0046 and RMSEA = .031, CFI=.999). All the standardized factor loadings were significant at the p < .05 level. The values of the factor loadings ranged from .76 to .90. The internal consistency of the constructs of the intent to stay factors was at their best level with a Cronbach alpha = .938.

The fourth step was to test a CFA model that includes all the measurement scales of all the variables. The model had an acceptable fit to the data with $X^2(408) = 778.289$, IFI = .973, TLI = .970, CFI = .973 and RMSEA = .033.

The convergent validity was indicated by indicator loadings which exceed .63, and the average variance extracted (AVE) which was found to be higher than .50. Discriminant validity was indicated by the value for which the cross-loadings with all constructs less than the indicator's outer loadings. The internal consistency was measured by the composite reliability and Cronbach alpha which was greater than .70, indicating good reliability. The CFA and the validity results are indicated in Table 4 below.

Table 5. Results of Confirmatory Factor Analysis for the whole model

	Convergent Validity			**Internal Consistency**		**Divergent Validity**
Factor	**Loadings**	**Indicator reliability**	**AVE**	**CR**	**α**	**Cross-loadings < outer loadings**
Leader_Support			0.551	0.859	.856	Yes
SL_1	.75	.56				
SL_2	.83	.69				
SL_3	.75	.56				
SL_4	.71	.50				
SL_r5	.67	.44				
Collegial Support			0.535	0.774	.770	Yes
CL_1	.76	.58				
CL_2	.79	.63				
CL_4	.63	.40				
Professional_Develop			0.520	0.846	.846	Yes
PD_1	.76	.57				
PD_2	.70	.50				
PD_3	.75	.56				
PD_4	.59	.35				
PD_5	.63	.40				
PD_6	.71	.51				
School_Resource			0.532	0.773	.770	Yes
SR_1	.68	.46				
SR_2	.75	.57				

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

SR_3	.75	.56				
Student_Discipline			0.573	0.842	.852	Yes
SD_1	.82	.67				
SD_2	.70	.49				
SD_3	.81	.66				
SD_ r4	.69	.47				
Job Satisfaction			0.619	0.889	.889	Yes
JS_1	.86	.75				
JS_2	.86	.74				
JS_3	.85	.73				
JS_4	.70	48				
JS_6	.63	40				
Intent to Stay			0.753	0.938	.838	Yes
RET_1	.88	.78				
RET_2	.88	.78				
RET_3	.89	.80				
RET_4	.90	.80				
RET_5	.78	.61				

Notes. 1. N= 833, Standardized Factor Loadings were all significant at the p > .05 level.
2. $X^2(408) = 778.289$, SRMR= .035, IFI=.97, TLI= .97, CFI= .977, RMSEA=.033

The Structural Equation Model

After ensuring the data fit of the measurement models, and validity of the constructs, the final step of the data analysis was to conduct a structural model with the latent variables. Three models were explored by means of a structural equation model to investigate the relationship of the aspects of school working conditions, job satisfaction, and intent to stay. First, we examined the joint impact of the components of school working conditions-leadership support (lead Sup), collegial Support (Coll_Sup), professional development (Prof_Dev't), school resources (Sch_Res), students' discipline (Stud_Dis) on Job satisfaction (Job_sat) simultaneously. All the aspects of school working conditions with the exception of collegial support indicated a significant positive correlation with job satisfaction. The final model fit was considered by dropping the insignificant collegial support and showed a good model fit as indicated in table 5 below.

It can be observed that leadership support, school resources, and students' discipline had a slightly weaker positive association with job satisfaction of .26, .15, and .16 respectively, whereas, professional development had a very weak yet positive correlation to job satisfaction at .090.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Table 6. Relations between aspects of school working conditions and job satisfaction

Dependent Variable	Independent Variable	Standardized Effect-	SE	p
Job Satisfaction	Lead_ Sup	.265	.089	.000
	Prof_Dev't	.090	.064	.045
	Sch_Res	.147	.074	.007
	Stud_Dis	.156	.064	.000

Note: Fit Indices, X^2/df = 1.720, SRMR = .035, RMSEA=.029, CFI= .983

Then, the second model investigated the structural equation model fit analysis of the aspects of school working conditions with the intent to stay. We entered the different aspects of school working conditions simultaneously to assess their joint impact on the intent to stay. As the relations of collegial support and students' discipline with intent to stay became insignificant, they were removed to arrive at the final model of school working conditions and intent to stay (see Table 5).

All three remaining components of school working conditions maintained a slightly moderate association with the intent to stay. School resources showed the strongest relationship with intent to stay (.23), followed by leadership support (.21) and professional development (.16).

Table 7. Relations between aspects of school working conditions and Intent to stay

Dependent Variable	Independent Variable	Standardized Effect-	SE	p
Intent to Stay R^2 = .24	Lead_ Sup	.208	.092	.000
	Prof_Dev't	.164	.069	.000
	Sch_Res	.225	.072	.000

Note: Fit Indices: X^2/df = 1.783, SRMR = .032, RMSEA=.031, CFI= .986

Finally, the mediating effect of job satisfaction on the relationship between the aspects of school working conditions and intent to stay was examined. Here, only the variables with significant positive relationships were considered. The final structural model fit indices showed an acceptable fit to the data with X^2/df= 1.838, SRMR= .036, CFI = .978, and RMSEA = .032. Leadership support showed a slightly moderate direct effect on job satisfaction (.27) and an insignificant positive effect on intent to stay. Professional development indicated a very weak direct relation to job satisfaction (.09), and a slightly moderate direct relation to intent to stay (.16). School resources had shown a slightly weaker direct relation to both job satisfaction (.14) and intent to stay (.16). Job satisfaction showed a strong positive effect on the teachers' intent to stay (.46). The significance of the indirect effect of the aspects of school working conditions mediated by overall job satisfaction on intent to stay was calculated using bootstrapping with 5000 samples. The result showed that school resources and students' discipline had a weak but significant indirect effect on intent to stay with β=.066 and β=.070, at $p<.01$ significance

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

level respectively at a 95% confidence interval ranging from .178 to .285. The indirect effect of professional development on intent to stay showed weak and insignificant positive relation (.042). The indirect effect of leadership on intent to stay was slightly weaker with β=.066 at p<.01 significance level.

Table 8. Mediating effect of job satisfaction

Dependent Variable	Independent Variable	Direct Effect	SE	p	Indirect effect	SE	p	Total effect
Job Satisfaction R2= .27	Lead_sup	.268	.090	.000				.268
	Sch_Res	.144	.074	.009				.144
	Prof_Dev't	.091	.065	.049				.091
	Stud_Dis	.153	.064	.000				.153
Intent to Stay R2=.40	Leader_sup				.123	.029	.000	.123
	Sch_Res	.157	.054	.000	.066	.028	.016	.223
	Prof_Dev't	.154	.065	.000	.042	.026	.075	.196
	Stud_Disc				.070	.025	.004	.070
	Job_sat	.46	.033	.000		-	-	46

Note: X^2/df = 1.838, SRMR= .036, IFI=.978, TLI= .975, CFI= .978, RMSEA=.032

Discussion

The purpose of this study was to examine the relationship between the aspects of school working conditions, job satisfaction, and intent to stay. From the final model, we found that the aspects of the school working condition and job satisfaction explained about 40% of the variance in teachers' intent to stay, and they interact with one another. The One-Way ANOVA test revealed that teachers at the early stages of their career, with less than five years of experience, we're less likely to continue in the profession compared to their mid-career and veteran counterparts. This finding is consistent with previous studies (e.g. Borman & Dowling, 2008; Hughes, 2012) which found that teachers at later stages of their careers are more likely to stay compared to their early career and mid-career teachers. This result may be explained due to a higher level of youth migration, and comparatively better payment in alternative employments. Moreover, teachers may find it easier to leave and try another job at a younger age since they have less sunk cost dilemma.

The first research question examined the effect of the aspects of school working conditions on teachers' intent to stay. Consistent with previous empirical evidence (Ashiedu & Scott-Ladd, 2012; Cha & Cohen-vogel, 2011; Fall & Billingsley, 2011), we found that three aspects of school working conditions-leadership support, professional development, and school resources are significantly associated with teachers' intent to stay. This means that teachers who perceive positive leadership support, effective professional development, and sufficient school resources had a high probability of continuing in the profession. Similarly, Bettini et al. (2020) claimed that

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

teachers with a positive attitude toward school climate were more likely to stay in teaching. When considered along with the other school working conditions, collegial support and students' discipline showed an insignificant but positive relationship with the intent to stay. This is contrary to Johnson et al. (2012) findings which showed that school working environments related to social nature are more important than material resources. This variation might be explained by the contextual difference in Eritrea in which teachers give less priority to the social nature of schools due to sustained economic problems, and youth migration.

The second question addressed the relationship between the components of the school working environment and overall job satisfaction. The results revealed a strong positive relationship between the four aspects of the school working condition and overall teachers' job satisfaction. It indicated that with better leadership support, professional development, school resources, and students' discipline, the teachers' overall job satisfaction increased. This is in line with the previous results (e.g. Perrachione et al., 2008; Song & Alpaslan, 2015; Toropova et al., 2020) which confirmed that aspects of the school working environment, such as leadership support, school resources, and students' discipline are highly related to job satisfaction. Correspondingly, Lam and Yan (2011) argued that the school working environment and job satisfaction are correlated. This study reiterated that teachers' having positive perceptions of these components of the school environment have a higher level of job satisfaction. From a practical point of view, it is noticed that school working condition affects the safety, determination, and motivations of teachers. Regarding collegiality, the results were contrary to past findings (Roch & Sai, 2018), with an insignificant positive effect on the teachers' intent to stay. This might be caused due to the lack of coordinated and planned teamwork, and organizing events to share experiences among the teachers.

The third question examined the relationship between overall job satisfaction and intent to stay. The results showed a strong positive relationship between job satisfaction and intent to stay. This implies that as teachers' job satisfaction increases, so does their intent to stay. Many empirical types of research documented that teachers with higher satisfaction are more likely to stay longer in teaching (Al-Omari et al., 2008; Billingsley et al., 2004; Ingersoll & May 2010; Perrachione et al., 2008; Suárez & Wright, 2019). Similarly, Rosser (2004) confirmed that these factors were directly associated. Programs and practices initiated to retain teachers must also aim to enhance the teachers' job satisfaction.

The last question was to examine the mediating effect of job satisfaction on the relationship between the aspects of school working conditions and intent to stay. Teacher job satisfaction was found to mediate

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

the effects of leadership support, school resources, professional development, and students' discipline on intent to stay. Teachers with high job satisfaction resulting from a positive school working conditions would likely stay longer. Researchers like Grayson and Alvarez (2008) revealed that interventions affecting school working climate targeted to increase teachers' satisfaction could reduce their stress, which in turn increases their likeliness to continue.

Most of the previous studies examined teacher retention at the beginning stages of their career or late-career teachers separately, but very few have focused on beginning career, mid-career, and veteran teachers in one framework. Therefore, this study will provide insight into the understanding of teachers' retention across all career spans because teachers' motivations, commitments, and practices differ according to career stages.

Conclusion

The study aimed to investigate the relationship among the aspects of school working conditions, job satisfaction, and teachers' intent to stay. Across the central administration of Eritrea, teachers in their early careers have shown a higher level of intent to leave compared to their mid-career and veteran counterparts. This invites the educational authorities to make an intervention to make the profession appealing, and create mechanisms to enhance teachers' motivation. Among the aspects of school working conditions, leadership support, professional development, and school resources were important for teachers' intent to stay. Additionally, job satisfaction was found to partially mediate the relationship between these aspects of the school condition and teachers' intent to stay. Our findings revealed that the intervention actions on the aspects of school conditions should aim to enhance teachers' job satisfaction to ensure their continuity in the profession. Although the study found an insignificant relationship between collegial support and intent to stay, it doesn't mean that it should be ignored. It is necessary to value and recognize the vitally important role played by collegial support in empowering teachers professionally and creating a sense of being at home.

Although the current study adds to our understanding of the relationship among the aspects of school working conditions, job satisfaction, and intent to stay, it is important to mention certain limitations when discussing these findings. This study is mainly a quantitative study using instruments measured from self-reported constructs that are exposed to inflated bias, adding a qualitative study could enhance the depth of the analysis. Another limitation is that it was a cross-sectional study. Therefore, longitudinal studies could provide a broader overview of these relationships for extended periods of time. Furthermore, demographic variables were not controlled in this study. Thus, it would be worthwhile to examine these

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

controlled demographic variables in future research. Finally, the study neglected how the school condition constructs interact with each other in their relationships with job satisfaction and intent to stay.

Human Studies

All the respondents were participated in this survey study voluntarily, and all the ethical guidelines were followed.

Conflicts of Interest

The authors declare that there is no conflict of interest on this research study.

References:

1. Aboobaker, N., Edward, M., & Zekkariya, K. (2019). Workplace spirituality, employee wellbeing and intention to stay: A multi-group analysis of teachers' career choice. *International Journal of Educational Management*, 33 (1): 28-44. https://doi.org/10.1108/IJEM-02-2018-0049.
2. Al-Omari, A. A., Qablan, M. A., and Khasawneh, M. S. (2008). Faculty members' intentions to stay in Jordanian public universities. *Journal of Applied Educational Studies,* 1 (1): 26–43.
3. Aldosiry, N. (2020). The influence of support from administrators and other work conditions on special education teachers. *International Journal of Disability, Development and Education. P*.1–15. https://doi.org/10.1080/1034912X.2020.1837353.
4. Aldridge, J. M., and Fraser J. B. (2016). Teachers' view of their school climate and its relationship with teacher self-efficacy and job satisfaction. *Learning Environments Research*, 19 (2): 291–307. https://doi.org/10.1007/s10984-015-9198-x.
5. Ashiedu, J. A., and Scott-Ladd, D. B. (2012). Understanding teacher attraction and retention drivers: Addressing teacher shortages. *Australian Journal of Teacher Education,* 37 (11). http://ro.ecu.edu.au/ajte/vol37/iss11/2.
6. Bettini, E., Gilmour F. A., Williams, O. T., and Billingsley, B. (2020). Predicting special and general educators' intent to continue teaching using conservation of resources theory. *Exceptional Children,* 86 (3): 310–29. https://doi.org/10.1177/0014402919870464.
7. Billingsley, B., Bettini E., Mathews, M. H., and Mcleskey, J. (2020). Improving working conditions to support special educators' effectiveness: A call for leadership. *Teacher Education and Special Education,* 43 (1): 7–27. https://doi.org/10.1177/0888406419880353.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

8. Billingsley, B., Carlson E., and Klein, S. (2004). The working conditions and induction support of early career special educators. *Exceptional Children*, 70 (3): 333–47.
9. Borman, G. D., and Dowling M. N. (2008). Teacher attrition and retention: A meta-analytic and narrative review of the research. *Review of Educational Research,* 78 (3): 367–409. https://doi.org/10.3102/0034654308321455.
10. Brill, S., and McCartney, A. (2008). Stopping the revolving door: Increasing teacher retention. *Politics and Policy,* 36 (5): 750–74.
11. Byrne, B. M. (2012). *Structural equation modelling with m plus: Basic concepts, application, and programming*. Routledge: New York, USA.
12. Cha, S., and Cohen-Vogel, L. (2011). Why they quit: A focused look at teachers who leave for other occupations. *School Effectiveness and School Improvement: An International Journal of Research, Policy and Practice,* 22 (4): 371–92. https://doi.org/10.1080/09243453.2011.587437.
13. Chesnut, S. R., and Cullen, A. T. (2014). Effects of self-efficacy, emotional intelligence, and perceptions of future work environment on preservice teacher commitment. *The Teacher Educator*, 49 (2): 116–32. https://doi.org/10.1080/08878730.2014.887168.
14. Curry, D., Mccarragher, T., and Dellmann-Jenkins, M. (2005). Training, transfer, and turnover: Exploring the relationship among transfer of learning factors and staff retention in child welfare. *Children and Youth Services Review*, 27: 931–48. https://doi.org/10.1016/j.childyouth.2004.12.008.
15. DeAngelis, K. J., and Presley, B. J. (2011). Toward a more nuanced understanding of new teacher attrition. *Education and Urban Society*, 43 (5): 598–626. https://doi.org/10.1177/0013124510380724.
16. Fall, A. Ḿ., and Billingsley, S. B. (2011). Disparities in work conditions among early career special educators in high- and low-poverty districts. *Remedial and Special Education*, 32 (1): 64–78. https://doi.org/10.1177/0741932510361264.
17. Fullan, M. (2001). *The new meaning of educational change* (3rd Ed.). RoutledgeFlamer: London, UK.
18. Geiger, T., and Pivovarova, M. (2018). The effects of working conditions on teacher retention. *Teachers and Teaching*, 24 (6): 604–25. https://doi.org/10.1080/13540602.2018.1457524.
19. Geving, A. M. (2007). Identifying the types of student and teacher behaviours associated with teacher stress. *Teaching and Teacher Education*, 23: 624–40. https://doi.org/10.1016/j.tate.2007.02.006.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

20. Grayson, J. L., and Alvarez, H. K. (2008). School climate factors relating to teacher burnout: A mediator model. *Teaching and Teacher Education,* 24: 1349–63. https://doi.org/10.1016/j.tate.2007.06.005.
21. Hahs-Vaughn, D. L., and Scherff, L. (2008). Beginning English teacher attrition, mobility, and retention. *Journal of Experimental Education,* 77 (1): 21–54. https://doi.org/10.3200/JEXE.77.1.21-54.
22. Harber, C. (2017). *Schooling in Sub-Saharan Africa: Policy, practice and patterns*. Springer International Publishing AG: Gewerbestrasse, Switzerland. https://doi.org/10.1007/978-3-319-57382-3.
23. Holbeche, L. (2009). *Aligning human resources and business strategy*. ELSEVIER: London, Great Britain.
24. Hughes, G. D. (2012). Teacher retention: Teacher characteristics, school characteristics, organizational characteristics, and teacher efficacy. *The Journal of Educational Research,* 105 (4): 245–55. https://doi.org/10.1080/00220671.2011.584922.
25. Ingersoll, R. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal,* 38 (3): 499–534. http://hdl.library.upenn.edu/1017/13673.
26. Ingersoll, R. M., and Henry M. (2010). *The magnitude, destinations, and determinants of mathematics and science teacher turnover*. CPRE Research Report # RR-66. available at http://www.cpre.org. Accessed 6 may 2021.
27. Inman, D., and Marlow, L. (2004). Teacher retention: Why do beginning teachers remain in the profession? *Education,* 124 (4): 605–14.
28. Jo, S. H. (2014). Teacher commitment: Exploring associations with relationships and emotions. *Teaching and Teacher Education,* 43: 120–30. https://doi.org/10.1016/j.tate.2014.07.004.
29. Johnson, B., Stevens, J., and Zvoch, K. (2007). Teachers' perception of school climate: A validity study of scores from the revised school level environment questionnaire. *Educational and Psychological Measurement,* 67 (5): 833–44. https://doi.org/10.1177%2F0013164406299102.
30. Johnson, S. M., Kraft A. M., and Papay, P. J. (2012). How context matters in high-need schools: The effects of teachers' working conditions on their professional satisfaction and their students' achievement. *Teachers College Record,* 140 (10): 1–39.
31. Kelchtermans, G. (2017). Should I stay or should I go? Unpacking teacher attrition / retention as an educational issue. *Teachers and Teaching,* 23(8): 1470–1278. https://doi.org/10.1080/13540602.2017.1379793.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

32. Kim, K., Liu, S., and Bonk, J. C. (2005). Online MBA students' perceptions of online learning: Benefits, challenges, and suggestions. *The Internet and Higher Education,* 8: 335–44. https://doi.org/10.1016/j.iheduc.2005.09.005.
33. Kline, R. B. (2016). *Principles and practice of structural equation modelling* (4th Ed.). The Guilford Press: New York, USA.
34. Kukla-Acevedo, S. (2009). Leavers, movers, and stayers: The role of workplace conditions in teacher mobility decisions. *Journal of Educational Research*, 102 (6): 443–52. https://doi.org/10.3200/JOER.102.6.443-452.
35. Kyndt, E., Dochy, F., Michielsen, M., and Moeyaert, B. (2009). Employee retention: Organisational and personal perspectives. *Vocations and Learning*, 2 (3): 195–215. https://doi.org/10.1007/s12186-009-9024-7.
36. Ladd, H. (2009). *Teachers' perceptions of their working conditions: How predictive of policy-relevant outcomes*? 33. Washington DC: CALDER, The Urban Institute. Available at https://files.eric.ed.gov/fulltext/ED509680.pdf. Accessed 13 August 2021.
37. Ladd, H. F. (2011). Teachers' perceptions of their working conditions: How predictive of planned and actual teacher movement? *Educational Evaluation and Policy Analysis,* 33 (2): 235–61. https://doi.org/10.3102/0162373711398128.
38. Lam, B., and Yan, H. (2011). Beginning teachers' job satisfaction: The impact of school-based factors. *Teacher Development: An International Journal of Teachers' Professional Development*, 15 (3): 333–48. https://doi.org/10.1080/13664530.2011.608516.
39. Liu, S. (2012). The influences of school climate and teacher compensation on teachers' turnover intention in China. *Educational Psychology: An International Journal of Experimental Educational Psychology*, 32(5): 553-569. https://doi.org/10.1080/01443410.2012.691074.
40. Liu, X. S., and Ramsey, J. (2008). Teachers' job satisfaction: Analyses of the teacher follow-up survey in the United States for 2000 – 2001. *Teaching and Teacher Education*, 24: 1173–1184. https://doi.org/10.1016/j.tate.2006.11.010.
41. Loeb, S., Darling-Hammond L., Luczak, J., and Luczak, J. (2005). How teaching conditions predict teacher turnover in California schools. *Peabody Journal of Education,* 80 (3): 44–70. https://doi.org/10.1207/s15327930pje8003.
42. Mulkeen, A., and Crowe-Taft, N. (2010). *Teacher attrition in Sub-Saharan Africa: The neglected dimension of the teacher supply*

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

challenge. A Review of Literature. UNESCO: Paris, France. https://unesdoc.unesco.org/ark:/48223/pf0000188197.

43. Nguyen, T. D. (2021). Linking school organizational characteristics and teacher retention: Evidence from repeated cross-sectional national data. *Teaching and Teacher Education*, 97: 1–14. https://doi.org/10.1016/j.tate.2020.103220.
44. Nir, A.E., and Bogler, R. (2008). The antecedents of teacher satisfaction with professional development programs. *Teaching and Teacher Education*, 24: 377–86. https://doi.org/10.1016/j.tate.2007.03.002.
45. Okubanjo, A. O. (2014). Organizational commitment and job satisfaction as determinant of primary school teachers' turnover intention. *Higher Education of Social Science*, 7(1): 173–179. https://doi.org/10.3968/5304
46. Perrachione, B. A., Rosser, J. V., and Petersen J. G. (2008). Why do they stay? Elementary teachers' perceptions of job satisfaction and retention. *Professional Educator*, 32 (2).
47. Roch, C. H., and Sai, N. (2018). Stay or go? Turnover in CMO, EMO and regular charter schools. *The Social Science Journal*, p. 1–13. https://doi.org/10.1016/j.soscij.2018.02.016.
48. Rosser, V. J. (2004). Faculty members' intentions to leave: A national study on their work life and satisfaction. *Research in Higher Education*, 45 (1): 285–309. http://dx.doi.org/10.1023/B:RIHE.0000019591.74425.f1.
49. Skaalvik, E. M., and Skaalvik, S. (2014). Teacher self-efficacy and perceived autonomy: Relations with teacher engagement, job satisfaction, and emotional exhaustion. *Psychological Reports: Employment Psychology & Marketing*, 114 (1): 68–77. https://doi.org/10.2466/14.02.PR0.114k14w0.
50. Skaalvik, E. M., and Skaalvik, S. (2011). Teacher job satisfaction and motivation to leave the teaching profession: relations with school context, feeling of belonging, and emotional exhaustion. *Teaching and Teacher Education*, 27 (6): 1029–38. https://doi.org/10.1016/j.tate.2011.04.001.
51. Smith, T. K., Connolly F., and Pryseski, C. (2014). *Positive school climate: What it looks like and how it happens*. Baltimore Education Research Consortium. Baltimore, MD.
52. Song, S.C., and Alpaslan, M.M. (2015). Factors impacting on teachers' job satisfaction related to science teaching: A mixed methods study. *Science Education International*, 26 (3): 358–75.
53. Struyven, K., and Vanthournout, G. (2014). Teachers' exit decisions: An investigation into the reasons why newly qualified teachers fail to

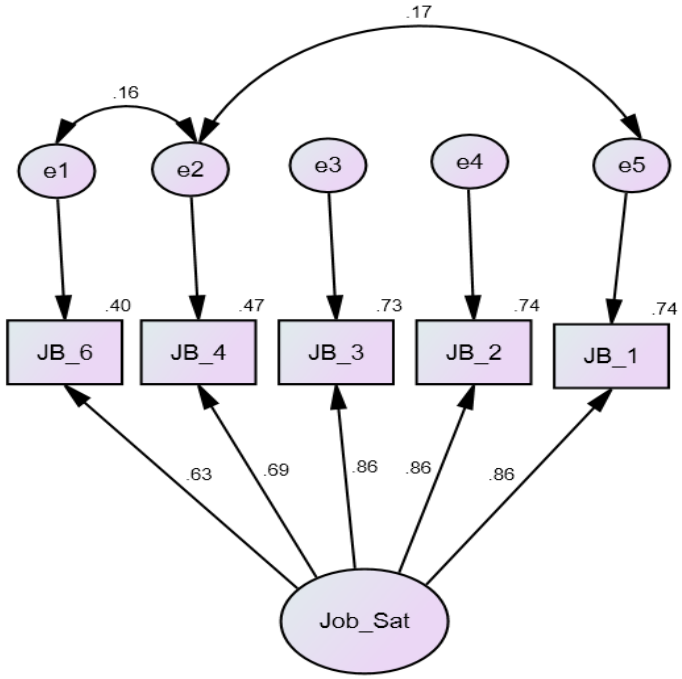
 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

enter the teaching profession or why those who do enter do not continue teaching. *Teaching and Teacher Education,* 43: 37–45. https://doi.org/10.1016/j.tate.2014.06.002.

54. Suárez, M. I., and Wright, B. K. (2019). Investigating school climate and school leadership factors that impact secondary stem teacher retention. *Journal for STEM Education Research,* 2 (1): 55–74. https://doi.org/10.1007/s41979-019-00012-z.
55. Swars, S. L., Meyers, B., Mays, C. L., and Lack, B. (2009). A two-dimensional model of teacher retention and mobility: Classroom teachers and their university partners take a closer look at a vexing problem. *Journal of Teacher Education,* 60 (2): 168–83. https://doi.org/10.1177/0022487108329116.
56. Toropova, A., Myrberg, E., and Johansson, S. (2020). Teacher job satisfaction: The importance of school working conditions and teacher characteristics conditions and teacher characteristics. *Educational Review*, p. 1–27. https://doi.org/10.1080/00131911.2019.1705247.
57. Tourangeau, A. E, and Cranley, A. L. (2006). Nurse intention to remain employed: Understanding and strengthening determinants. *Nursing and Healthcare Management and Policy,* 55(4):497-509. https://doi.org/10.1111/j.1365-2648.2006.03934.x.
58. UNESCO-UIS. (2013). *A teacher for every child: Projecting global teacher needs from 2015 to 2030*. UIS fact sheet no. 27. UNESCO: Montreal, Canada.
59. Weiqi, C. (2007). The structure of secondary school teacher job satisfaction and its relationship with attrition and work enthusiasm. *Chinese Education & Society*, 40(5): 17–31. https://doi.org/10.2753/CED1061-1932400503
60. Wynn, S.R., Carboni W. L., and Patall, A. E. (2007). Beginning teachers' perceptions of mentoring, climate, and leadership: Promoting retention through a learning communities' perspective. *Leadership and Policy in Schools,* 6 (3): 209–29. https://doi.org/10.1080/15700760701263790.

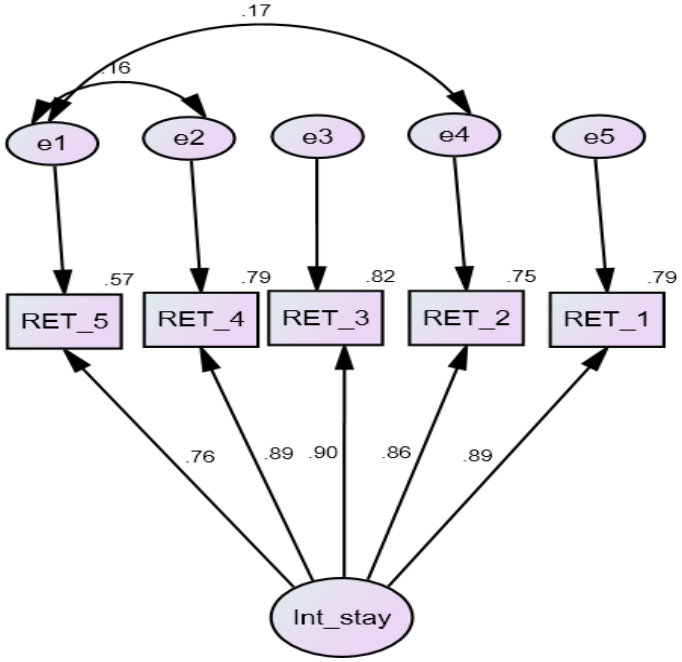
 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Figure 2. A measurement model of teacher job satisfaction.



Note: Model fit: X^2/df =.620, SRMR = .0043, CFI= 1.00, RMSEA=.000

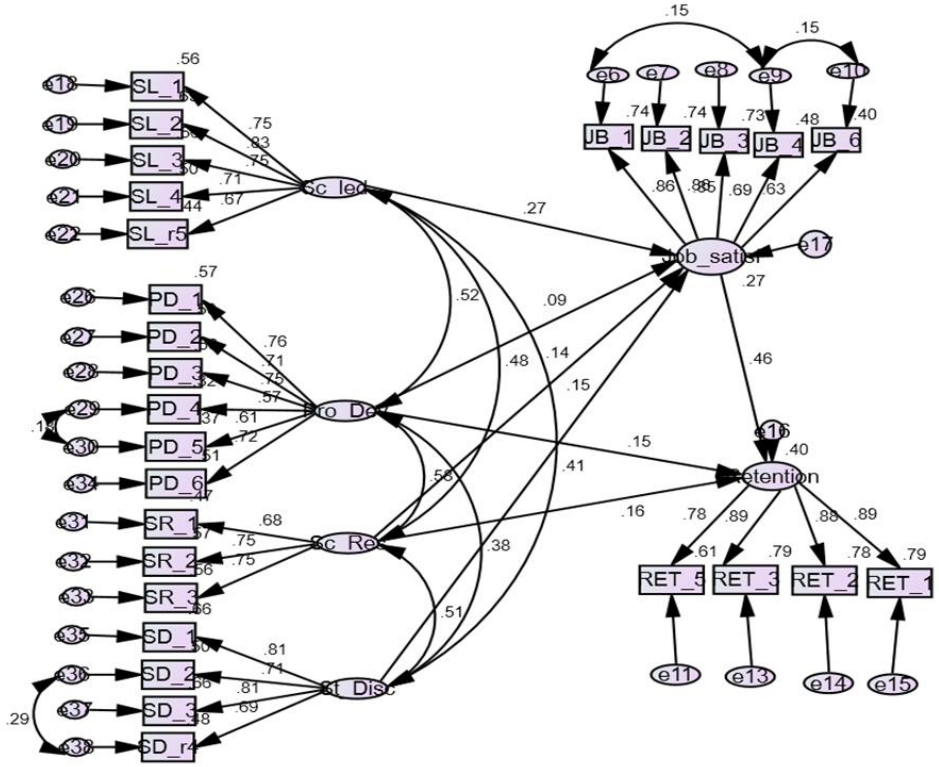
Figure 3. A measurement model of intent to stay.



Note: Model fit: X2/df =1,777, SRMR = .0046, CFI= .999, RMSEA=.031

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Figure 4. Results of the Structural Equation Model



ESJ Social Sciences

Impact of the Organizational Culture on the Employee's performance Zain Telecom as a Case Study, Khartoum-Sudan

Dr. Zoltán Veres, Full Professor
Head of Department of Marketing, University of Pannonia, Hungary
Alfateh Fegada, PhD
Senior Lecturer, University of Pannonia, Hungary

Doi:10.19044/esj.2022.v18n12p237

Submitted: 12 April 2022
Accepted: 28 April 2022
Published: 30 April 2022

Copyright 2022 Author(s)
Under Creative Commons BY-NC-ND
4.0 OPEN ACCESS

Cite As:
Veres Z. & Fegada A. (2022). *Impact of the Organizational Culture on the Employee's performance Zain Telecom as a Case Study, Khartoum-Sudan.* European Scientific Journal, ESJ, 18 (12), 237. https://doi.org/10.19044/esj.2022.v18n12p237

Abstract

The study addressed the impact of organizational culture "OC" on the employee's performance in zain telecommunication company located in Khartoum-Bahri, SDN. The study discussed the flowing main question: Does organizational culture affect the employee's performance? The study aimed to clarify the impact of organizational culture on the employee's performance among the dimensions of (performance improvement, and performance efficiency). Based on the literature studies, and to conduct the study with the respondent we have implemented a quantitative-descriptive analytical approach and the case study method. The questionnaire was the main tool for collecting the data. Meanwhile, 32 questionnaires have distributed to respondents. The main hypothesis of the study was, that there was a relationship between organizational culture and employee performance in Zain telecommunication company. Moreover, to confirm the reliability and validity of the questionnaire, it has distributed to (3) arbitrators, in addition to calculating the credibility and reliability coefficient of Cronbach's alpha, the value was 90%. We have utilized (SPSS) program in order to analyze the data. One of the most important findings of the study is that we have found a significant relationship between organizational culture and performance efficiency, and there is a significant relationship between organizational

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

culture and performance improvement.

Keywords: Organizational culture, Nature of work, job security, Employee performance, Employee improvement

1. Introduction

The competitiveness of business cannot be considered without organizational culture since nearly all business developments are linked to a high-performance culture.

Schein defines organizational culture as the common values, beliefs, or perceptions of employees about an organization and its environment. In previous studies, four types of culture are based on the creative, quality, supportive, productive cultures while the four cultures' dimensions include "adaptability, mission, involvement, and consistency. "Adaptability and mission are oriented externally, while involvement and consistency are oriented internally". Muhammad Azeem, et all, (2021).

Organizational culture is a set of important assumptions that an organization's members share. Two main assumptions, beliefs, and values are in common. Beliefs are realistic assumptions and are derived and strengthened by the experience. Values are hypotheses of ideals to strive for and desire.

"The performance of employees refers to observable behavior and actions that explain the way in which work is to be done and the results expected to be successful. Performance is the degree to which a person performs his task or task. The extent to which the work of an employee is carried out It shows how good work looks to the employee. This means that employees must know what to do to achieve success in their jobs. Moreover, many factors at work affect the performance of employees' organizational culture is one of these important factors". Agbeworde, L. S. (2016).

2. Statement:

Organizational culture is an important technique of human resources that cannot be ignored. Employed people create an overview of the organization's subjective perception based on factors such as risk violence, the emphasis on teams and people support. The perception becomes the culture or personality of the organization. Just as personalities are stable over time, strong cultures are stable as well. This makes it hard for managers to change strong cultures.

Management wants to change the culture when it's not suited to its environment, and management needs to understand these theories and give them the attention they deserve. In the light of these, the research sought to examine the effects on the employee performance of organizational culture at Sudan's telecommunication company.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

3. Questions:

The problem of the study is formulated as the following main question: *Does organizational culture affect the employee's performance in zain telecom company?* This question is divided into the following sub-questions:

1. What is the impact of the nature of work on the employee's performance?
2. How do administrative development and training affect the employee's performance?
3. 'To what extent does job security affect the employee's performance?

4. Objectives:

The general purpose of this study is to examine *the impact of organizational culture on employee performance in zain telecom company*. This includes the following sub-objectives:

1. To explain the impact of the nature of work on the employee's performance.
2. We attempt to put a clear statement of the importance of administrative development and training on the employee's performance.
3. In this study, we seek to clarify the importance of job security and it is the effect on employee performance.

5. Model:

To explain the problem of the study and attain its objectives, the model should be built in order to specify the independent variable (Organizational culture) and the dependent variables (Employee performance) as illustrated in Figure 1 below:

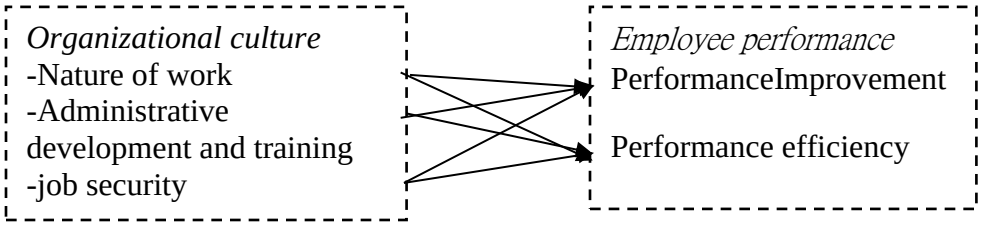


Figure 1. pre-model of study

6. Hypotheses:

According to the above pre-model of the study the main hypothesis of the research is, therefore:

There is a relationship between organizational culture and the employee's performance.

The following sub-hypotheses are generated:

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

- There is a statistical relationship between the nature of work and employee performance.
- There is a statistical relationship between administrative development, training, and employee performance.
- There is a statistical relationship between job security and employee performance.

7. Theoretical framework:

Organizational culture “OC” is viewed as an organizational capital and is a core competence that develops compatibility with organizational performance and employee values.

"Organizational culture is defined as "the shared values, beliefs and hidden assumptions of organizational members". Muhammad Azeem, et. all, (2021).

The process of beliefs, habits, values, and behavior that shape the behavior of an individual is known as the culture of the organization. Each association also has a unique feature of how it operates, such as culture, technology, human resources, etc. This feature distinguishes it from other organizations.

"The only thing that leaders do is create and manage culture," says Shafiq and Ahmed (2014). Moreover, OC is an important contribution to effective corporate performance because corporate culture establishes values, beliefs, and working systems that can guide and provide a competitive and sustainable environment. OC enables new learning to simplify the work of employees, and it can help them to understand the organization's fundamental values and develop a common understanding of organizational processes and goals.

The theoretical principles of OC theory highlight the complex nature of organizational life and the importance of researchers' behavior, activities, and stories, as well as the members of the organization.

"The theory of the cultural dimension of Hofstede used factor analysis as a basis for the study of the results of a worldwide IBM survey of employee values from 1967-1973. Since then it was refined. The original theory had four dimensions to analyze cultural values: individualism-collectivism; the avoidance of uncertainty; power distance (fortitude of social hierarchy) and male and female (task orientation versus person-orientation)". Hofstede, G. (2009).

Employees are an organization’s most valuable asset and play a key role in maintaining the organization's successful image. The key factor in ensuring the smooth, successful running of the company is employee performance, instead, good performance of employees will improve organizational performance.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

"In addition, the performance of employees depends very much on perception; there are seemingly so many variables that affect work performance that they can hardly be understood. Listing in a particular situation is defined as the function of individual capability, skill, and effort, the capabilities of employees are relatively stable in the short term". Ezeanyim, E. E., & Ufoaroh, E. T. (2019).

The employee is an organization's precious resource (asset); therefore, the organization's success or failure depends on the performance.

"Organizations, therefore, invest enormous sums of money in the development of employees. The paper investigates and examines the organizational culture literature and its effect on employee performance. Employee performance is the result of employee development of productivity and performance. Moreover, the performance of employees will ultimately influence the effectiveness of the organization". Hameed, A., & Waheed, A. (2011).

The concept of performance improvement: It is a systematic and comprehensive way to address the problems experienced by an organization, and it is an organized process that begins by comparing the current situation and the desired situation for individual and organizational performance and trying to identify the performance gap. On the other hand, the concept of performance efficiency: is defined by the French Association of Industrial Standards as the use of capabilities in a professional situation, in order to reach the optimal performance of a job or activity.

8. Empirical reviews of related studies:

"The reason for culture is to understand how companies work and the way they do business gives sense and importance. Culture contributes to internal integration, brings together the workforce from all levels, increases morality, and enhances their performance. It consists of usual habits, conduct, rules, dominant ethics and transmitted mood or climate". Agbeworde, L. S. (2016).

"organizational culture is a process in which the members of one group are distinguished from the other. The above concept, therefore, affirms that corporate culture can help to keep the employees in line and encourage them towards their corporate objectives. Most organizations reaffirm their performance as a dependent variable to recognize other independent variables that produce performance changes". (Richard et al., 2009).

The theoretical relationship between organizational culture and culture is favorable. the changes in the performance of efficiency, emphasizing that the role of culture is very important for sustaining, sustaining, and improving organizations' performance. Furthermore, Yilmaz, C., & Ergun, E. (2008)

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

"clarified that any organization's cultural system adds to the coordination of assignments, minimizing employee inefficiency and corporate resources".

Ahmed & Shafiq (2014) "conducted a study to determine the impact on the telecom sector's organizational performance of organizational culture. The aim of the study was to assess the impact of organizational culture on corporate performance to know how an organization's culture helps to improve its organizational performance. In order to measure the organizational performance of the scorecard, a quantitative approach was used to collect the data with a questionnaire. The findings showed that the whole cultural dimension affects the various perspective of corporate performance".

The relationship between organizational culture and performance has been examined by Awadh, A. M., & Alyahya, M. S. (2013) "The main purpose of their research was to identify and measure strong connections between performance and organizational culture. Some cultural aspects have been identified from the study and research shows that the value and standards of a company are based on the relationship between employees. An organization's goal is the development of strategies to increase its performance. Meanwhile, a balanced scorecard and the understanding of the nature and the ability of an organization's system culture were used for measuring the performance management system. A strong corporate culture based on management and leaders was recommended to help improve performance".

8.1. Organizational culture and employee performance relationship:

Many scientists consider the importance of individual factors (i.e., capacity and effort) in connecting organizational culture with employee achievement (e,g. Gardner & Schermerhorn, 2004).

The organizational culture functions as internal integration and coordination between business operations and employees, therefore, internal integration can be described as the social interaction between new members and existing members, the creation of boundaries between people's identities, and the organization's commitment.

"The culture of a shared system that forms the basis for communications and mutual understanding in an organization can have a significant negative impact on its effectiveness if the organizational culture fails to fulfill those functions at a satisfactory level. However, a strong organizational culture supports adaptation and develops employee performance by motivating of employees to achieve a common objective, which should ultimately be at the heart of operational and functional strategies, shaping and channeling employee behavior in this direction". (Daft, et all., 2010).

The mission of an enterprise reflects the ultimate long-term goal of its operational activity and behavior. A company's performance will improve if

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

its mission is clearly understood. Successful and effective organizations define their organizational objectives as a reporting card of the future (long-term) (Chavan, 2009; Lunenburg, F. C. (2011).; Hellriegel & Slocum, 2011).

9. Methodology

9.1. Sample, and instrument:

In comparison to the possibility of specifying the study population, which consists of all employees of zain Telecom Company in Khartoum Bahri, therefore, a quantitative descriptive approach, as well as a comprehensive inventory method, was used to collect data from employees. The questionnaire has been utilized as the main tool for collecting the data.

9.1.1. Sample response rate:

Data have collected through utilizing a questionnaire, according to that (35) questionnaires were distributed with a recovery rate of (86%), and (30) of questionnaires were obtained from the total distributed questionnaires with a recovery rate of (86%), and the number of questionnaires that were not retrieved reached (5) therefore, a questionnaire with a recovery rate of (14%), while the number of valid questionnaires for analysis reached (30), reaching a percentage of (86%), and data cleaning was done and a summary of all data cleaning operations was prepared, as well as the response rate as shown in the following table:

Table 9.1.1 data cleaning and response ratio

Data	Number	Percent
The total number of questionnaires distributed to the respondents	35	%100
Total questionnaires returned	30	%86
Questionnaires not returned	5	%14
The number of valid questionnaires for analysis	30	%86

“Own analysis based on the collected data" 2020

The questionnaire was the main tool on which the study relied in collecting data and on which the study relied in discussing the hypotheses. The questionnaire was divided into two parts. The first part dealt with general information in five questions represented in personal data that describe the study sample (gender, age, educational qualification, job level, practical experience) and each question contained options to answer it, and the second part dealt with the questions of the study subject in five axes, three for the independent variable with (12) statements, and two axes for the dependent variable (6) statements. The study phrases were designed based on the five-point Likert scale, and the scales were weighted as follows:

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Table 9.1.2 five-point Likert scale

Strongly agree	Agree	Neutral	Disagree	Not agree at all
5	4	3	2	1

9.2. Factor analysis:

9.2.1. Exploratory factor analysis of organizational culture:

The correlation matrix was formed between the original variables in the study for the independent variable with each other, consisting of three axes of organizational culture and the number of its (12) phrases. A deletion point of (0.45) was used, i.e., considering that no intersecting values are exceeding a value of (0.45) and since the values of contributions The initial is not less than (0.45) and the saturation is not less than (0.45) and the KMO value is not less than (0.60) for the variables and the value of the latent islands is not less than the right one, and the phrases that have intersections have also been deleted. The analysis resulted in the work axis, the development axis The administrative and job security axis, where three basic components (factors) were reached. Of all the expressions in the scale of organizational culture, the first component was the nature of work, with a percentage of (89.233%) of the variance, and the second component of administrative development with a percentage of (3.269%) of the variance, and the third component of job security with a percentage of (2.699%), and these components explain together (95.201%). of the variance for each of the expressions, which is more than (0.60%), which is considered good in social research according to (Hair, JF, et all, 1998), and the factors were rotated by one of the orthogonal rotation methods, which is Varimax, to load the variables on the factors most related to them so that they are The factors are completely independent of each other, and the analysis showed the Rotated Component matrix as shown in Table No. (9.2.1) and the results of the spss analysis.

Table No. 9.2.1 Factor analysis of organizational culture

variables	Phrase	**Factors**		
		1	**2**	**3**
Nature of work	The company has an atmosphere of interdependence and cohesion between the manager and the rest of the employees	0.918		
	There is great interest in developing the company's employees professionally and administratively	9130.		
	There is mutual trust between employees with each other	0.937		

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Administrative development and training	The company encourages the spirit of teamwork among its employees.		0.922	
	The company determines the administrative bonuses and incentives according to the employee's performance		0.824	
Job security	The company shall punish the violator of its laws and regulations without exception			0.840
	Employees are keen to abide by the regulations and instructions for work			0.922
	The manager meets with his employees periodically to discuss work issues			0.863
Eigen values		7.139	0.261	0.216
Variance Explained		89.233	3.269	2.699
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.854		
Bartlett's Test of Sphericity		393.136		
Total Variance Explained		89.233		

"Own analysis based on the collected data" 2020

9.2.2. Exploratory factor analysis of employee performance:

The correlation matrix was formed between the original variables in the study for the dependent variable with each other, and the analysis of these variables resulted in two main axes, the axis of improving performance, and the second axis is the efficiency of performance. intersecting values greater than (0.45) and where the values of The initial contributions are not less than (0.45) and the saturations are not less than (0.45) and the KMO value is not less than (0.60) for the variables and the value of the latent islands is not less than the right one, and the variables that have intersections have also been deleted, and the analysis resulted in the performance improvement axis and the efficiency axis Performance, and two main components (factors) of all expressions in the measure of sustainable competitive advantage were reached. The first component was performance improvement, with a percentage of (53.591%) of the variance, and the second component of performance efficiency at a percentage of (36.120%) of variance. Together, those components explain (89.711%).) of the variance for each of the expressions, which is more than (0.60%), which is considered good in social research according to (Hair, JF, at al, 1998), and the factors were rotated by one of the orthogonal rotation methods, which is varimax to load the variables on the factors most related to them and so that The factors are completely

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

independent of each other The analysis showed the Rotated Component matrix as shown in Table No. (3.2.2) and the results of the spss analysis.

Table No. 9.2.2 Factor analysis of employee performance

variables	Phrases	Factors	
		1	2
performance improvement	Promotion helps to make greater efforts to improve the performance of employees in the company	0.965	
	Participation in decision-making helps improve performance improve the performance	0.903	
	Continuous assistance by management to employees helps in completing work efficiently and accurately	0.876	
performance efficiency	The work required of me is done efficiently		0.940
	I abide by the instructions and procedures when carrying out the work		0.830
Eigen values		3.444	1.041
Variance Explained		53.591	36.120
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.724	
Bartlett's Test of Sphericity		117.800	
Total Variance Explained		89.711	

“Own analysis based on the collected data" 2020

9.3. Reliability and Practical Efficiency of Study Measures:

Consistency analysis is used to find the internal consistency of the data and it ranges from (0 to 1), the value of (Cronbach's alpha) was calculated to find the internal consistency of the data if the values of the alpha coefficient of Cronbach are closer to 1, the internal consistency of the variables is considered large, and to decide the value of Alpha Cronbach Required This depends on the purpose of the research. In the early stages of basic research, Moses, J. A., Johnson, G. L., & Lewis, G. P. (1983) indicated that the credibility of 0.50-0.60 is sufficient and that increasing the credibility of more than 0.80 may be wasteful, while others suggested that the value of Cronbach's alpha It must be more than 0.70.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Table 9.3.1 Cronbach's alpha reliability coefficient for questionnaire statements

The type of the variable	The dimensions of the variable	Number of phrases	Cronbach' alpha
Independent	nature of work	3	0.978
	Administrative development and training	2	
	Job security	3	
Dependant	Improvement of performance	3	0.862
	performance efficiency	2	

"Own analysis based on the collected data" 2020

9.4. Study hypotheses:

Table 2.4.1 hypotheses of the study. the factor analysis of the study variables

The first main hypothesis: **There is a relationship between organizational culture and performance improvement**
Sub Hypotheses:
There is a relationship between the nature of work and performance improvement
There is a relationship between administrative development and performance improvement
There is a relationship between job security and performance improvement
The second main hypothesis: **There is a relationship between organizational culture and performance efficiency**
Sub Hypotheses:
There is a relationship between the nature of work and performance efficiency
There is a relationship between administrative development and performance efficiency
There is a relationship between job security and performance efficiency

"Own analysis based on the collected data" 2020

9.5. Means and standard deviations of the study variables:

It is noted in the table (2.5.1) below, which shows that the averages of all study variables are higher than the hypothetical mean, and the results of the descriptive statistical analysis of the study variables in Table No. (2.5.1) show that the trends of the study sample were positive towards most of the paragraphs that measure the study variables and clarify the mean Arithmetic and standard deviation of the dimensions of the study. It is noted from the table that the arithmetic means of the independent variable organizational culture. administrative development (arithmetic mean = 4.61, standard deviation = 1.53) is the largest average, followed by the arithmetic mean for the dimension of the nature of work (arithmetic mean = 4.51, standard deviation = 2.78), Then, finally, the mean of the job security dimension (arithmetic mean = 4.56,

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

standard deviation = 2.4), It is noted that the arithmetic means of the study variables is greater than the hypothetical mean used in the statistical analysis program, which indicates the strength of the variables under study. It can also be concluded from the same table that the respondents under the study give great attention to the variables of the study. It is also deduced from the table that the investigator's understudy focuses more on the dimension of organizational culture in terms of computational circles, and on the other hand, these interests can be arranged for the sample under study as follows: administrative development, nature of work, and. job security.

It is noticed from the table that the arithmetic means of the dependent variable performance of employees. performance efficiency (arithmetic mean = 6.94, standard deviation = 1.17) is the largest average, followed by the arithmetic mean for the dimension of performance improvement (arithmetic mean = 4.77, standard deviation = 1.69) It is noted that the arithmetic means of the variables of the study is greater than the hypothetical mean used in the statistical analysis program (and the standard deviation is greater than half of the arithmetic mean (3), which indicates the strength of the variables under study. It is also concluded from the same table No. (2.5.1) that the investigators are under study The study gives more attention than usual or customary to the variables of the study. It also concludes from the same table No. (2.5.1) that the respondents under the study focus more on the dimension of employees' performance as well, and on the other hand, these interests can be arranged for the sample under study as follows: performance efficiency, then. performance improvement.

Table 9.5.1 means and standard deviations of the study variables

variable type	Dimensions	Standard deviation	mean	Relative importance
Independent Variables	nature of work	1.53	4.61	0.92
	Administrative development and training	2.78	4.51	0.91
	Job security	2.4	4.56	0.90
dependent variables	Performance Improvement	1.17	6.94	1.39
	performance efficiency	1.69	4.77	0.91

"Own analysis based on the collected data" 2020

9.6. Analysis of the correlations between the study variables:

Correlation analysis was conducted on the data of the field study to find out the initial picture of the interrelationships between the independent and dependent variables. Or the inverse, and in general the relationship is considered weak if the value of the correlation coefficient is less than (0.30)

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

and it can be considered medium if the value of the correlation coefficient ranges between (0.30) to (0.70) and the relationship is considered strong if the correlation coefficient is more than (0.70).

It is noted from Table No. (2.6.1) that the correlation between the dimension of the independent variable, the nature of work, is positively and morally positively correlated with the independent variable administrative development, where the correlation value = (0.938), and it has a positive and morally strong relationship with the independent variable, job security Where the value of the correlation was (0.797), and we find that it has a strong positive significant correlation with the dependent variable to improve performance, and the correlation value = (0.729), and it has a positive, medium, significant correlation with the dependent variable performance efficiency, where the value of the correlation was (0.559).

As it is noted in Table No. (2.6.1) that the correlation between the dimension of the independent variable administrative development is positively and significantly correlated with the independent variable job security, where the value of the correlation = (0.845), and it has a strong positive and significant correlation with the dependent variable, improving performance. Where the correlation value = (0.736), we also find that it has a positive, medium, significant correlation with the dependent variable, performance efficiency, and the correlation value = (0.514).

It is also clear from the data of Table No. (2.6.1) that the correlation between the independent variable dimension of job security is positively and strongly associated with the dependent variable, improving performance, where the correlation value = (0.743), and it has a positive, medium, significant correlation with the dependent variable efficiency. Performance where the correlation value = (0.497), and finally it is clear from Table No. (2.6.1) that the correlation between the dimension of the dependent variable improving performance is positively and insignificantly medium with the dependent variable performance efficiency where the correlation value = (0.367). *Table No. (2.6.1) the relationships between the study variables*

Table 9.6.1 Person's Correlation Coefficient for All Variables

Variables	work nature	management development	Job security	improve the performance	performance efficiency
work nature	1				
administrative development and training	0.938	1			
Job security	0.797	0.845	1		
improve the performance	0.729	0.736	0.743	1	
performance efficiency	0.559	0.514	0.497	0.367	1

“Own analysis based on the collected data" 2020

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

9.7. Findings:

9.7.1. Testing the first main hypothesis (a):

There is a relationship between organizational culture and employee performance (Performance efficiency). To test this hypothesis, multiple regression analysis was used to identify the effect of applying organizational culture and employee performance (Performance efficiency). Through regression analysis, it was concluded that there is a positive relationship between organizational culture and employee performance (performance efficiency), where the significance level values were less than the approved significance level (0.05) in this study. The F-test indicated that the regression model is statistically significant, as the calculated F value was (14.168) with a significance level (sig = 0.000), which is less than the significance level adopted in this study (0.05),

As for the explanatory ability of the regression model, represented in the coefficient of determination (R 2), it reached (0.33), which indicates that approximately 33% of changes in the performance of employees (performance efficiency) are explained by the application of organizational culture, that is, the greater the application of organizational culture, the higher the performance of employees (performance efficiency) and the remaining 67% are explained by other factors outside the subject of the study in addition to random errors resulting from the accuracy of sample selection and the accuracy of units of measurement and others, which are random factors due to chance and immaterial.

As for the level of the detailed relationship between organizational culture and the performance of employees (performance efficiency), the results indicated in Table No. (2.7.1) and through the analysis it was concluded that there is a positive and significant relationship between the nature of work and (performance efficiency) where the value of beta (0.580) and the level of morale (0.000)

There is also a positive, significant relationship between administrative development and (performance efficiency), where the beta value is (0.601) and the level of significance (0.000), and there is a positive and moral relationship between job security and (performance efficiency), where the beta value is (0.542) and the level of morale is (0.002) this result makes the relationship fully supported.

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Table 9.7.1 Results of analyzing the relationship between organizational culture and employee performance (performance efficiency)

independent variables	**performance efficiency**		
	Beta	***Sig***	***The result***
work nature	.580	.000	Supported
Administrative development and training	.601	.000	Supported
Job security	.542	.002	Supported
R 2	.580a		
Adjusted R 2	.312		
R 2△	.336		
F change	14.168		

Sentiment level: *p<0.10, **p<0.05, ***p<0
"Own analysis based on the collected data" 2020

This part discusses the results of the hypotheses tests of the study. the factorial analysis of the data. This part deals with testing (5) major hypotheses related to the relationship between the remaining variables. conducting the factor analysis and reliability, as shown in the part of the statistical methods used in the study, the regression analysis test was used.

The multidimensional, which aims to identify the effect of the dimensions of the independent variables on the dependent variables.

Testing the second main hypothesis:

There is a relationship between organizational culture and employee performance. (Performance improvement). To test this hypothesis, multiple regression analysis was used to identify the effect of applying organizational culture and employee performance. (Performance improvement). Through regression analysis, it was concluded that there is a positive relationship between the nature of work. (Performance improvement), where the significance level values were less than the approved significance level (0.05) in this study. The F test indicated that the regression model is statistically significant, as the calculated F value reached (30.103) with a significance level (sig = 0.000), which is less than the significance level adopted in this study (0.05), As for the explanatory ability of the regression model represented in the coefficient of determination (R2), it reached (0.51), which indicates that approximately 51% of the changes in the performance of employees. (Performance improvement) are explained by the application of organizational culture, that is, the greater the application of organizational culture, the higher the performance of employees. (Improving performance) and the remaining 49% are explained by other factors outside the subject of the study in addition

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

to random errors resulting from the accuracy of sample selection and the accuracy of units of measurement and others, which are random factors due to chance and not essential. As for the level of the detailed relationship between organizational culture and employee performance (performance improvement).

The results shown in Table No. (2.7.2) and through the analysis, it was concluded that there is a positive and significant relationship between the nature of work and (improving performance), where the value of beta (0.720) and the level of morale (0.001), and there is a relationship Significantly positive between administrative development and (performance improvement), where the beta value reached (0.596) and the significance level (0.003), and there is also a positive significant relationship between job security and (performance improvement), where the beta value reached (0.716) and the level of morale (0.000), and this The result makes the relationship fully supported.

Table 9.7.2 the Results of analyzing the relationship between organizational culture and employee performance. (Performance improvement)

independent variables	**performance improvement**		
	Beta	***Sig***	***The result***
work nature	.720	.001	Supported
management development	.596	.003	Supported
Job security	.716	.000	Supported
R 2	.720a		
Adjusted R 2	.501		
R 2△	.518		
F change	30.103		

Sentiment level: *p<0.10, **p<0.05, ***p<0

"Own analysis based on the collected data" 2020

9.8. Summary of hypothesis test results:

Table 2.8.1 Summary of the results of the main hypotheses:

Study hypotheses	**Status**
The first main hypothesis: There is a positive moral relationship between organizational culture and employee performance	total support
Sub Hypotheses:	
There is a positive significant relationship between the nature of work and performance efficiency	supported
There is a positive moral relationship between administrative development and performance efficiency	supported
There is a positive significant relationship between job security and performance efficiency	supported
The second main hypothesis: There is a positive significant relationship between organizational culture and performance improvement	full support

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

Sub Hypotheses:	
There is a positive, moral relationship between the nature of work and performance improvement	supported
There is a positive moral relationship between administrative development and performance improvement	supported
There is a positive significant relationship between job security and performance improvement	supported

"Own analysis based on the collected data" 2020

Conclusion

In this study, several dimensions of organizational culture were discussed, furthermore, there was no study conducted on the telecommunication sector in Khartoum bahri city regarding organizational culture. This prompted the researcher to conduct and describe the impact of organizational culture's elements on the employee's performance in Zain company. The study indicated the importance of applying organizational culture as an effective and scientific strategy to attain efficient employee performance for these companies and enable them to have better expertise and reserve their market position.

Furthermore, the findings of the study showed that there is a strong relationship between organizational culture variables and the employee's performance in terms of the principle of performance improvement and performance efficiency.

After performing the factor analysis on the hypotheses of the study, the results of the analysis were as follows:

The employees have stated that there is great interest in developing the company's employees professionally and administratively as well as mutual trust between employees with each other which has developed the performance of employees in the company regarding that nature of work (0,000) sig. meanwhile, the company encourages the spirit of teamwork among the employees, and employees acknowledged that company determines the administrative bonuses and incentives according to the employee's performance also offering a different opportunities of trainings to improve their capabilities (0,000) sig. Moreover, employees stated that managers have met with employees periodically to discuss the work issues and handle the formations between them in order to ensure job security, (0,002) sig.

The current study agreed with the Ahmed & Shafiq study which concluded that the whole cultural dimension affects the various perspective of corporate performance, and this is what we have concluded in the findings.

Our study is therefore an attempt to help specialists and those who are interested in the employee's performance of the investigated company and other similar companies by knowing the most influential factors of

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

organizational culture. Therefore, these companies can apply this strategy to maintain and increase the number of customers, as well as helping them to expand their market share and control the elements of competition.

This study suggests the necessity of conducting more research in this area and addressing the other dimensions of organizational culture, even though this study has made a significant contribution in different fields, still, there is no study that may answer all the questions in any study field. Therefore, the current study was carried out in one country (Sudan) however, the results cannot be generalized to other countries. Consequently, the replication of the current study in different countries may present different results and may allow the relationship with the current research's result by opening new areas for further research.

References:

1. Azeem, M., Ahmed, M., Haider, S., & Sajjad, M. (2021). Expanding competitive advantage through organizational culture, knowledge sharing and organizational innovation. *Technology in Society*, *66*, 101635.
2. Agbeworde, L. S. (2016). *The impact of organizational culture on employee performance* (Doctoral dissertation, University of Cape Coast).
3. Ahmed, M., & Shafiq, S. (2014). The impact of organizational culture on organizational performance: a case study on telecom sector. *Global journal of Management and Business Research*.
4. Hofstede, G. (2009). Geert Hofstede cultural dimensions.
5. Ezeanyim, E. E., & Ufoaroh, E. T. (2019). The Impact of Job Satisfaction on Employee Performance in Selected Public Enterprise in Awka, Anambra State. *Global Journal of Management And Business Research*.
6. Hameed, A., & Waheed, A. (2011). Employee development and its effect on employee performance a conceptual framework. *International Journal of Business and Social Science*, *2*(13).
7. Agbeworde, L. S. (2016). *The impact of organizational culture on employee performance* (Doctoral Dissertation, University of Cape Coast).
8. Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring organizational performance: Towards methodological best practice. *Journal of Management*, *35*(3), 718-804.
9. Hammond, J. P., Broadley, M. R., White, P. J., King, G. J., Bowen, H. C., Hayden, R., ... & Greenwood, D. J. (2009). Shoot yield drives

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

phosphorus use efficiency in Brassica oleracea and correlates with root architecture traits. *Journal of Experimental Botany*, *60*(7), 1953-1968.

10. Yilmaz, C., & Ergun, E. (2008). Organizational culture and firm effectiveness: An examination of relative effects of culture traits and the balanced culture hypothesis in an emerging economy. *Journal of World Business*, *43*(3), 290-306.
11. Ahmed, M., & Shafiq, S. (2014). The impact of organizational culture on organizational performance: a case study on telecom sector. *Global journal of Management and Business Research*.
12. Awadh, A. M., & Alyahya, M. S. (2013). Impact of organizational culture on employee performance. *International Review of Management and Business Research*, *2*(1), 168.
13. Gardner, W. L., & Schermerhorn, J. R. (2004). Unleashing individual potential. *Organizational Dynamics*, *3*(33), 270-281.
14. Daft, R. L., Murphy, J., & Willmott, H. (2010). *Organization theory and design* (Vol. 10). Mason, OH: South-Western Cengage Learning.
15. Chavan, M. (2009). The balanced scorecard: a new challenge. *Journal of Management Development*.
16. Lunenburg, F. C. (2011). Organizational culture-performance relationships: Views of excellence and theory Z. In *National Forum of Educational Administration and Supervision Journal* (Vol. 29, No. 4, pp. 1-10).
17. Hellriegel, D., & Slocum, J. (2011). Organisational behavior, southwestern. *Cengage Learning*.
18. Moses, J. A., Johnson, G. L., & Lewis, G. P. (1983). Reliability analyses of the Luria-Nebraska Neuropsychological Battery summary, localization, and factor scales. *International Journal of Neuroscience*, *20*(1-2), 149-154.