REVIEW OF SOCIO-ECONOMIC PERSPECTIVES

Ryoko Wada

Keiai University, Keiai, Japan
E-mail: rwada@u-keiai.ac.jp

Witsanu Attavanich

Kasetsart University, Bangkok, Thailand
E-mail: witsanu.a@ku.ac.th

Vilas Gaikar

University of Mumbai, Mumbai, India
E-mail: gaikar_vilas@rediffmail.com

Muhammad Saleem Ashraf

Minhaj University Lahore, Pencap, Pakistan
E-mail: drsaleemashraf1@gmail.com

Ramos Mabugu

Sol Plaatje University, Johannesburg, South Africa
E-mail: rmabugu@gmail.com

Patrycja Chodnicka-Jaworska

University of Warsaw, Warsaw, Poland
E-mail: PChodnicka@wz.uw.edu.pl

Vilma Kazlauskiene

Vytautas Magnus University, Kaunas, Lithuania
E-mail: vilma.kazlauskiene@vdu.lt

Adela Coman

The University of Bucharest, Bucharest, Romania
E-mail: adela.coman@faa.unibuc.ro

Luisa Bosetti

University of Brescia, Brescia, Italy
E-mail: luisa.bosetti@unibs.it

Monica Meireless

University of Lisbon, Lisbon, Portugal
E-mail: monica.meireless@iscte-iul.pt

Danijel Mlinaric

University of Zagreb, Zagreb, Croatia
E-mail: dmlinaric@efzg.hr

Veronika Solilova

Mendelu University in Brno, Brno, Czechia
E-mail: veronika.solilova@mendelu.cz

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Language patterns that influence behavior

Mihai Alin Anghel[1],•

[1] *Candidate Ph.D. Doctoral School University of Economic Studies, Faculty of marketing, Bucharest, Romania*

Abstract

Consumer behavior has always been influenced by many internal and external factors regarding purchase decisions. However, when the dialogue with another person was considered the specific external factor which in the context of communication was named as an influencing element, information often got understood differently based on context and chosen words. In the world of Neurolinguistic Programming, it is considered that people repeat specific actions when processing information and if one's language pattern is identified, then the chances for that person to understand correctly the information is higher. This research sets up its objectives for understanding the existing language patterns people have and how it influences their purchase behavior. For this to be concluded, there has been created a set of specific objectives which will guide the research: identifying the language patterns which have the power of influencing consumer behavior (OS1); measuring the impact one language pattern can have when applied to a pattern aligned person (OS2). The analysis will be conducted on a group of people of age 23-31 years old, all being students of the Marketing Faculty. Upon these specific objectives, a set of hypotheses have been established: it is assumed that people possess all language patterns, some being more dominant (H1); identifying the language pattern can be done within a survey (H2). Analyzing the results and interpreting them gives a clear understanding of the fact that language patterns are one of the main influencing elements of consumer behavior and purchase decisions.

1. Introduction

Consumer behavior, at its root a definition, is represented by the analysis of a person or group of people who decide on what to buy and how to do it. Because there are three types of needs for every human: basic like food and water, psychological like a loving relationship, and self-fulfillment when it all comes down to reaching one's potential in a specific action. (Appier, 2022)

Neurolinguistic Programming (NLP) is a thought-provoking approach to personal development that helps individuals to gain a deeper understanding of the human potential and how to communicate effectively. (Kain, 2021).

Neurolinguistics Programming is, however, the result of the expansion of neuroscience research which appeared for the first time in the mid-1960 to mark the beginning of a new era. The purpose was to combine various research majors that would form a new science. In current times, neuroscience is one of the fastest-growing disciplines in the entire world. For example, in 1971 1100 scientists participated in the first meeting of the Neuroscience Society, nowadays there are about 31,500 scientists who actively participate in such events. (Squire, et al., 2013)

From a behavioral point of view, the research of neuronal systems opens a door to understanding integrated behaviors. For example, multiple theories express the existence of the different types of memories which led to the possibility of altering the behavior or personality. Cognitive neuroscience represents with certainty the

• **E-mail:** anghel.a.mihai@gmail.com & **ORCID:** https://orcid.org/0000-0001-7953-6278

biggest challenge to understanding the neuronal mechanisms which are responsible for higher levels of mental activities like self-knowledge, imagination, and communication. (Bear, Connors, & Paradiso, 2016)

Most of the time, in cognitive research, the learning processes through observation in cognitive neuroscience have concentrated on the role of understanding the role of a set of neuronal systems, like the mirror neuronal mechanism. This method has contributed with certainty to the concept of understanding and memorizing different types of actions, but it has also affected the level of appreciation of the role of human interactions and their importance in the human mind. (Ramsey, Kaplan, & Cross, 2021)

During all neuroscience and neuromarketing research, there were various tools used to decode the human mind. For sure, as technology evolved, the more it got its spot in behavior analysis. One of the most popular instruments to be used in the cognitive analysis is electroencephalogram[1] (EEG) which is still used as the main tool. The EEG research combined with cognitive actions has formed cognitive neuroscience and has always been closely correlated with the understanding of the decision-making process. With great certainty, these are challenges for quantitative research using the EEG technique, because if it is not invasive, it is inconclusive. However, if it gets to be invasive, then it will not be applicable for studies on big groups of people. (Holler, 2021)

In current times, the interest in neuroscience and its components of cognition and emotion has been on the full rise. Even though the importance of emotional research in international partnerships is rising, establishing a common ground for research is declining. Theorizing emotions leads automatically to creating a concept of emotions and, having the complexity of this step, reconceptualizing human experiences must be made. Therefore, classical concepts of defining emotions are against the modern approach, which is making them incompatible. (Gammon, 2019)

In recent years, neuroscience researchers have started to offer great attention to the factors which trigger negative emotions through the perceptions people have regarding the external environment and surrounding elements. Very similar to cognitive neuroscience, understanding the emotional concepts, as experiments and case studies are being made by using the EEG tools. (Chang, Te Lo, & Huang, 2019)

The importance of emotional and social processes in developing the human mind is a very important factor and is of great interest for all researchers of psychology or neuroscience. This development of processes has examined which types of emotional and social processes have a great role in one's development throughout his lifetime. Various studies have concluded that the social nature of a person can be tracked by using EEG or Eye Tracking tools, but these are not the only ways of conducting such research. (Ferdinand, Paulus, Schuwerk, & Kuhn-Popp, 2018)

With the help of neuroscience, there is one field that helps to unite like a bridge the science and psychology part. Neuromarketing is a field that studies intensively the consumer behavior and benefits nowadays of 500 billion dollars from Marketing companies. (Morin, 2011)

Neuromarketing is putting its resources into researching the neuronal correlations of the buying behavior mechanism when it comes to brand familiarity and product preferences. It is very important to understand that researchers can find that correlation, but they can't specifically induce stimuli that can guarantee the success of a specific influence factor. All external factors have different reactions in the human mind based on the context in which that person finds himself at that moment. Therefore, it is mandatory to consider that a neuromarketing analysis is limited by the tools that are used and the context of the group of people at that moment in time. (Madan, 2010)

2. The role of Neurolinguistic programming in neuroscience

Neurolinguistic programming (NLP) follows the way people communicate and answer to different external factors. While classic research methods analyze what people answer, the contextuality of a situation presents a more important aspect, how people answer a specific question or idea.

Therefore, NLP is proposing that interior personal sensorial representations of people be analyzed as self-influencing factors of decision-makers. This is how NLP is coming with the idea that a system of sensorial representation, which is applied correctly, can translate how a person reacts to specific elements and decides to purchase or processes information better and faster. (Sturt, et al., 2012) Consumer behavior is often identified with the concept of understanding consumerism's needs and finding a way of fulfilling them.

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[1] Electroencephalography is a specific method that can record the electrogram of electrical activity on the human scalp.

With this concept in mind, Neurolinguistic Programming[2] (NLP) is one of the sciences which constructed a system that can analyze the human system of interaction and decode it into language patterns. When it comes to understanding the human mind, it is considered that people react to either motivational or language patterns. While for the first case Shelle Rose Charvet[3] has explained in the Lab Profile[4] research that people can understand the information in different ways when is expressed differently.

However, this case study has the objective of decoding the language patterns by using an NLP concept, the VAK System, also known as the representation system. This concept proposes the idea that all people in the world are part of specific groups when it comes to language patterns. This means not only humans are not unique in informational processing, but also that there is a method of decoding how people understand better any type of information.

The VAK acronym is formed by the three biggest elements of the representation system: Visual, Auditory, and Kinesthetic. These characteristics separate people by the verbs they mostly use in an open conversation and explain the rationale walkthrough people have when processing information. However, the VAK system has suffered a modification, researcher Richard Bandler[5] and John Grinder[6] have added one more element, the Digital representation system. They believed that with the digital characteristic, the VAK system is now complete and can be applied to groups of people. What is very important to have in consideration, in the context of a situation because a person might change his point of view based on the specific situation, he is dealing with at a given time.

The purpose of identifying the representation system of a person is to discover how he processes information. This will help with finding the best presentation method by using the most appropriate words for the respective person. The visual system is more dominant for people who often remember more visual elements from a situation they have experienced in one way or another. When it comes to describing a memory, the visual people will start describing the elements which form that specific event and they will even use a lot of hand gestures, trying to draw the actions from the story they are telling.

When dealing with the possibility of purchasing a product, a visual person will always be more influenced by the outside characteristics and the palpable features. When it comes to auditory people, the situation changes dramatically. If these people are asked to describe an event or memory, they will often remember the sounds which were created in that given context. From what words someone used, to what noises were easy to hear, an auditory person is constantly influenced by the sounds around. Even more, these people consider that the best way of delivering information is by having an open conversation about the subject of the matter.

People who are facing a dominant kinesthetic pattern are often influenced by the emotional element of a situation. When having to remember a situation, they will present the emotional implication they had or was present in that given context. If a kinesthetic person wants to purchase a product, he will choose it only after he can touch it and have a real-life experience before being able to make the buying decision. The problem Richard Bandler and John Grinder addressed regarding the representation system are the lack of a group of people, the overthinker and highly dominated by logical individuals. Considering that there are people who prefer to analyze the details behind an event or product, the VAK system was missing a link. Therefore, they added the digital element into the equation to describe the people who, first, need more time to think before purchasing a product and who always analyze in detail all advantages and disadvantages of a given situation.

3. Identifying a person's representation system

To identify a person's representation system, this research proposes a specific test in the image of a survey which will have the mission to track the way people reply to the question. Because the objective is to discover the VAK system, each question will display a list of answers from which the respondents will have to choose the one that fits perfectly with their perspective.

The first step, however, is to determine the context of the research. As presented above, people might change their VAK system, based on the given context. Therefore, a clear and easy context needs to be provided before to every respondent, so that everyone has the same mindset.

The second stage is represented by determining the five questions which will respect the given context. Each question will have four answers and every one of them will represent one VAK-D pattern from the representation system.

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[2] Neurolinguistic programming (NLP) is a psychological approach to the human mind with the mission of understanding behavior and informational processing system.
[3] Founder, Brilliant Minds (Training & Development) Ltd. The UK
[4] Psychological construct of human motivational patterns which influence decisions
[5] American Author and trainer
[6] Author and linguist

The respondents are asked to read the questions and to give value grades to the answers from 1 to 4, where 1 represents the lowest value of importance and 4 is the highest. This research has established a very clear structure of the questions and answers for the representation system to be as clear as possible. Therefore, the answers to the five questions of the survey will need to respect the following scheme:

- First question's answer's: kinesthetic – auditory – visual – digital

- Second question's answers: auditory-visual – digital – kinesthetic

- Third question's answers: visual – kinesthetic – digital – auditory

- Fourth and fifth question's answers: auditory – digital – kinesthetic - visual

4. Context of analysis – Case study

The research has invited a group of students of the Marketing Faculty to answer a short survey. The purpose is to determine how well they appreciate how the course of Strategic Marketing is being conducted by the teacher and how well they understand the information. They were shown the following set of questions and answers, to which they had to offer grades of value from 1 to 4 (1 – the lowest and 4 – the highest).

1. What I appreciate the most about my teacher is that:
   a. He explains to us how strategic marketing is applied in real-life events
   b. He tells us many stories about how strategic marketing is important
   c. He shows us many pictures and videos on how the content we study is applied
   d. He always gives us many documents which we can take home and study regarding the subject he presented

2. In a contradictory conversation, what influences me the most is:
   a. My teacher's tone of voice
   b. If I can see it or not the arguments he is offering
   c. The logic of the given arguments
   d. If I feel connected with the arguments

3. I can express my opinions best when:
   a. I can present the information I have
   b. I feel that what I am saying is correct
   c. The words I choose are identical to the ones other authors are using when talking about the same subject
   d. I can speak freely

4. I find it the easiest to retain information when:
   a. I hear a detailed story about a certain event
   b. I can read about different perspectives of people who have lived the same event
   c. I can place myself in that event as if I was there
   d. I can see pictures from that event, and I can read about what happened.

5. How do you work best when studying at home?
   a. The fact that I can rehearse the information with a loud voice without being interrupted by anyone is the biggest advantage
   b. I can read without interruption different materials to understand the subject
   c. When I can dream about that specific event and place myself in it to understand better the information
   d. When I can read and write the parts I consider to be most important

The answers given by the first respondent are extracted and placed inside a table to observe the value grades he has offered to the survey. To establish the representation system of the student who offered the first set of answers, it is needed only to be made a sum of all his answers, categorized on the researched patterns. The first two biggest patterns with the highest values are the dominant VAK-D patterns which show how that person can both be influenced easily in a conversation and can also understand information better. All five questions are gathered and the results from visual, auditory, kinesthetic, and digital patterns are put together to form the totals. (Table 1).

Table 1. First respondent value grade results

Question 1	Question 2	Question 3	Question 4	Question 5
K - 1	A -2	V - 2	A - 3	A - 2
A - 2	V - 4	K - 1	D - 2	D - 4
V - 4	D - 3	D - 4	K - 1	K - 1
D - 3	K - 1	A - 3	V - 4	V - 3

Source: Author

As it can be observed from the results table, based on the representation system research, the first student has the first dominant characteristic represented by the visual element with 17 points, followed by the digital one with 16 points. This means that the student can process and understand information better when he can read the information by himself, without having someone telling him about it. The only way for the student to retain information in the class is if the teacher will constantly show pictures and videos while presenting the information. To conclude the research on the group of students, the grades will be analyzed as averages for every representation pattern so that it will be clear which is the dominant system of the entire group overall. The process will be the same as for the first student, therefore the table will have the same calculation method. (Table 2).

Table 2. The dominant representation system of the first respondent

Results	V	K	A	D
Question 1	4	1	2	3
Question 2	4	1	2	3
Question 3	2	1	3	4
Question 4	4	1	3	2
Question 5	3	1	2	4
Total	17	5	12	16

Source: Author

It is interesting to observe how the average responses of the group are quite different from the first respondent. This means that most of the people in the group have a dominant and different representation pattern, meaning that they understand and process information differently. The following results are explaining the distance of the group from the first respondent. (Table 3).

Table 3. Overall average or group responses

Question 1	Question 2	Question 3	Question 4	Question 5
K - 3	A - 4	V - 2	A - 4	A - 4
A - 4	V - 1	K - 1	D - 2	D - 2
V - 2	D - 3	D - 4	K - 1	K - 3
D - 1	K - 2	A - 3	V - 3	V - 1

Source: Author

Not only that the general and average response different from the first respondent, but it also shows how teaching a class would be most efficient considering this specific context and group of people. The research concludes that by defining a very clear context it is possible to identify the representation system of one or more people. It is to be considered that the language patterns are respecting the specific objective launched by this research and they all respect the concept of language segregation. Not only that but also the hypothesis is confirmed within this study that no student has offered a lower grade than 1 to any of the answers. This means that every single person has considered that all language patterns displayed are true for them, just with different values. (Table 4).

Table 4. Group average results

Results	V	K	A	D
Question 1	2	3	4	1
Question 2	1	2	4	3
Question 3	2	1	3	4
Question 4	3	1	4	2
Question 5	1	3	4	2
Total	9	10	19	11

Source: Author

5. Conclusions

Consumer behavior is often influenced by many factors, internal and external. There are many reasons why a person takes a decision on how to act upon information and how he will process it afterward. When it comes down to the representation system in the VAK-D structure, neurolinguistic programming has solved a big issue when it comes to separating people not by what they think, but by the way they make decisions. These emotional patterns are the main key features that influence human behavior in any context.

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RSEP

Youth enrollment into dressmaking and tailoring apprenticeship programme

Joseph Osei[1], Bismark Kwadwo Menetey[2], Patricia Ghann[3,*]

[1] *Ph.D, Faculty of Applied Science and Technology, Koforidua Technical University, Ghana*
[2] *M.PhIL, Faculty of Applied Science and Technology,, Koforidua Technical University, Ghana*
[3] *Ph.D, Faculty of Applied Science and Technology,Koforidua Technical University*

Abstract

There has been a reduction in the numbers of Dressmaking/Tailoring apprenticeship in Koforidua, Ghana. Masters and Mistresses in tailoring and dressmaking industry complain of the lack of workers to help them meet their clients' demands on time. The purpose of the study was to investigate the trends of youth enrollment into dressmaking/tailoring apprenticeship in Koforidua – Ghana, to identify the factors that motivated the youth to enroll on the dressmaking/tailoring apprenticeship programme in Koforidua; Identify the contractual agreements for enrolling the youth into dressmaking/tailoring apprenticeship in Koforidua. Cross-sectional survey was employed for the study. Two sets of Questionnaire were used to collect data from the respondents (27 apprentices and 27 of their trainers) using both purposive and simple random sampling procedures. The data gathered was coded and analyzed using the Statistical Package for Social Sciences (SPSS) version 20. The findings showed that the apprentices expect to gain valuable work experience and insight into the profession to enable them to work independently after completion and have job security, and to establish their own businesses. Enrollment into apprenticeship training has over the years reduced drastically. Enrollment of the youth into dressmaking/tailoring apprenticeship training is key to preparing the youth to work in the garment industry as artisans to sustain the industry and increase revenue on garment export and also reduce the large population of unemployed youth in Ghana.

1. Introduction

Apprenticeship can be explained as any framework by which a business undertakes contract to utilize a youngster to prepare him or her deliberately for an exchange for a period, the term of which has been settled ahead of time and over the span of which the trainee will undoubtedly work in the business administration (Steedman & Ryan, 1998). Stedman (2011) also assert that apprenticeship training combines Vocational Education and work-based learning for some intermediary occupational skills and the learner is subject to externally required training standards, particularly for their workplace section.

The International Labour Organization (ILO) has classified apprenticeship under formal and informal. ILO (2012) posit that proper apprenticeship denotes to a system by which a novice (the apprentice) gains the skills for a trade or craft in an enterprise education and working side by side with experienced craftsmen, usually perfected by classroom-based instruction. Apprentice, master craftsman/employer, and the training provider conclude a training agreement that is controlled by formal laws and acts. Costs of training are shared between the apprentice, master craftsman/employer, and the government. On the contrary, the casual apprenticeship refers to the system by which a young trainee gains the skills for a trade or skill in a micro or small enterprise learning

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[•] **E-mail:** joseph.osei@ktu.edu.gh & **ORCID:** https://orcid.org/0000-0002-2388-3438

[♦]**E-mail:** Menetey.bismarkkwadwo@ktu.edu.gh

[*]**E-mail:** patricia.ghann@ktu.edu.gh

and working side by side with a skilled practitioner. The latter appears to be what pertains in the Ghanaians setting.

2. Literature Review

Apprentice and the master craftsman arrange a training agreement that is entrenched in local norms and traditions of a society. Apprentices acquire technical and vocational skills and are welcomed into business culture and system which makes it easier for them to find works or start businesses on completion of training (ILO, 2007). Informal apprenticeship network exists in some countries such as Indonesia, Turkey, and the United States. In less developed countries like Indonesia, India, and Egypt, the existence of informal apprenticeships is the result of the diversity of micro, small and medium-sized businesses covering. In these informal apprenticeships, employers engage younger workers. It is also noted that informal and formal apprenticeships can exist side by side, although in these countries the formal systems have far fewer participants.

The significance of internship training in the casual division of the economy of Ghana cannot be over looked, yet it is not at pace with the drive at which apprenticeship training frameworks are evolving (Arnold & Bongiovi, 2010). Studies have shown that apprenticeship training in developing economies has faced several challenges, this has therefore, slowed the initiatives of various governments to enhance human resource through apprenticeship training (Arnold & Bongiovi, 2010).

Dressmaking and tailoring have connected the informal economy's contributions to national development, job creation opportunities, and money generation potential. Enrolling young people in dressmaking and tailoring apprenticeship programs is critical to preparing them to work as artisans in the garment industry, which will help to sustain the business, increase revenue from garment exports, and reduce Ghana's huge youth unemployment rate.

Preliminary studies indicate that, the number of candidates who sit for the practical examination in Dressmaking and Tailoring held by the National Vocational Training Institute in Koforidua has decreased. Tailoring and dressmaking masters and mistresses in Koforidua also worry about a lack of workers to help them achieve their clients' deadlines.

2.1 Traditional Apprenticeship

Traditional traineeship's major strengths include practical alignment, self-regulation, and self-financing. Apprenticeship training, on the other hand, is lengthy and low-paying, with no certification. The 2012 EFA Global Monitoring Report from UNESCO praises countries for supporting master craftsman training, improving trainee working conditions, and guaranteeing that skills may be validated.

Apprenticeship is by far the most important institution for training, according to (Krystyna, -2012), and is primarily performed by persons with junior high school or lower levels of education. According to Krystyna (2012), apprentices account for nearly 25% of working-age Ghanaians and 28% of city dwellers. Krystyna (2012) states that 55 % of those employed were current or former trainees. According to research on Ghana's experience with reforms, standardised skills training has favored young people with higher levels of education (secondary school).

Koforidua Municipality is found of many trainers in the field of dressmaking and tailoring but low number of trainees. The focus of this research is on young people enrolling in dressmaking and tailoring apprenticeship programme.

Research Questions

1.   What factors motivate the youth to enroll on the dressmaking/tailoring apprenticeship programme in Koforidua?

2.   How are the youth enrolled in dressmaking and tailoring apprenticeship in Koforidua?

3.   What are the contractual agreements for enrolling the Youth into dressmaking/tailoring apprenticeship in Koforidua?

3. Methodology

Cross-sectional survey was chosen for the study. This enabled the researchers to investigate the existing conditions concerning enrollment of youth into dressmaking/tailoring apprenticeship training in Koforidua Municipality of the Eastern Region of Ghana. The target population for the study was all trainers who have registered with the Ghana National Tailors and Dressmakers Association (GNTDA) and their apprentices in Koforidua. The researchers employed purposive and simple random sampling for the study.

Researchers, after selecting the registered trainers who met the criteria for selection, assigned numbers to all the trainers and their apprentices. After assigning the numbers to trainers and their apprentices, the researchers randomly mentioned some numbers and those with the mentioned numbers were used to form the sample size of 54 (i.e. 27 trainers and 27 of their apprentices) was obtained. The reason for sampling 27 trainers and 27 of their trainees was that each trainer should be able to give relevant information about trends of enrollment.

This study utilized questionnaire as the data collection instrument to achieve the objectives of the study. The questionnaires included both closed and open-ended items.

4. Results and Discussion

The study inquired into the source of apprentices' information regarding enrollment into dressmaking/tailoring programme. Table 1. shows the sources of information.

Table 1. Sources of Information about Apprenticeship Training

Sources	No.	%
Friends	9	33.4
Parents/Guardians	6	22.2
Clients	5	18.5
Church/Mosque	4	14.8
Signboard	2	7.4
Social media	1	3.7
Total1	**27**	**100**

Source: Field work, 2019

In table 1, 33.4% of the apprentices indicated that their source of information was from their friends, 22.2% said their parents/guardians told them about the training, some (18.5%) indicated that clients of trainers told them about the training, 14.8% said that the information about apprenticeship training was announced during their gathering in the Church and Mosque to worship God. 7.4% indicated they saw the advertisement on signboards, while 3.7% of the apprentices indicated they saw the advertisement on social media. The result showed that all the respondents had some form of information prior to their enrollment on apprenticeship training progamme. The result is consistent with the findings of Sharpe and Gibson (2005). According to Sharpe and Gibson, most of the youth who enroll in apprenticeship training are usually introduced by their parents.

According to Allen (2015), it is the duty of parents and guardians to provide good education to their wards and ensure they develop into responsible adults. Hence, friends, signboard, Churches/Mosques, clients and social media may be the sources of information for apprentices, parents and guardians who sponsor the apprentices may be the main decision-makers. The apprentices were very likely not to have financial support and encouragement from their parents if any of them enrolled against their will. Probably, parents were hesitant in recommending garment making apprenticeship training to their children because of the social stigma attached to TVET (Aryeetey *et al.,* 2011). In fact, Anamuah –Mensah (2004) stated that in a study of 87 TVET teachers, none of them wanted their children to study TVET programmes. The TVET programme, though formal, is competency based and similar to skill training in apprenticeship (Stedman, 2011).

4.1 Advertisement by Trainers for Enrollment

The rationale for this data was to find out whether the trainer respondents had been advertising for enrollment into dressmaking/tailoring apprenticeship training programme. The data is presented in Table 2.

Table 2. Advertisement for Enrollment

Category	No	%
Referrals (other trainers)	20	74.0
Media announcement	4	14.8
Graduation ceremonies	3	11.2
Total	**27**	**100**

Source: Field work, 2019

Pertaining to the procedure commonly employed by the trainers to enroll apprentices, from Table 2, it was established that majority 74.0% of the apprentices were introduced to their trainers through other trainers. Only 14.8% were linked through announcements in churches, public address systems in their communities and 11.2% through other graduation ceremonies for apprentices in the municipality. For people currently searching for training, it is hard to interface with a business that is hunting down an understudy. This test is intensified by the way that the best advertising for apprenticeships happens through verbal exchange and casual proposals (CAF, 2011b). Together, these issues introduce a negative perspective of the exchanges, depicting them as tedious, unwanted, and hard to understand.

Furthermore, many guardians that have finished apprenticeships do not urge their wards to take after a similar pathway, considering it to be mediocre compared to college, insecure, and offering little probability of professional success (Sharpe & Gibson, 2005). Akpalu (2011) stated that trainers in dressmaking and tailoring advertised enrollment into garment making mainly through garments worn by their clients which are made by them. He asserts that only few trainers advertise for enrollment into dressmaking/tailoring through the media (television, radio, what app etc.), (Akpalu 2011). These confirmed the result why majority of the respondents enrolled onto dressmaking/tailoring apprenticeship training programme through referrals. AIG (2013) recommended the promotion and celebration of the excellence of apprenticeships to create positive attitudes and awareness of enrollment possibilities in young people and the wider community.

4.2 Apprentices' Level of Interest

The apprentices' level of interest in apprenticeship training programme are indicated in Figure 1.
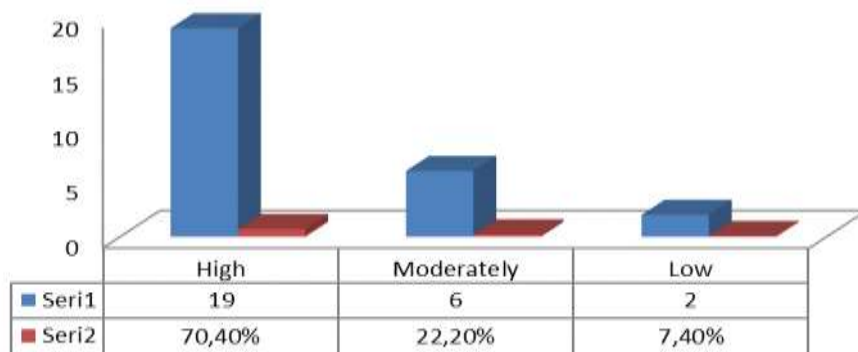
Figure 1. Interest Level of Apprentices in their Training

The study further found that majority 70.4% of the apprentices were much interested in the apprenticeship training, 22.2% were moderately interested, while 7.4% indicated their interest level in their training was low. The minority group of the apprentices explained that they have no passion but were forced to undertake the study by their parents. Hence, their level of interest was low.

The study examined whether the apprentices were advised by people to enroll into dressmaking/tailoring apprenticeship training. The data reveals that 67% were not advised by anybody. Their reason was that they were highly interested in learning the trade and being bosses on their own after completing their training. Thus, in line with Bandura's social cognitive theory which stated that interest and self-belief of the ability to acquire the necessary competences for the job motivate them to enroll into dressmaking or tailoring apprenticeship. These trainees stated further that they had a passion for the job. On the other hand, 33% said they received advice on the benefits and attainable skills after apprenticeship. The result also confirms that of Biney-Aidoo (2006) which opines that the major motivating factor for enrollment into apprenticeship training is the interest of the youth, the hope of being boss on their own after training and passion for the job.

4.3 Reasons for Enrolling onto Apprenticeship Training programme

The rationale for collecting this information was to find out apprentices' reasons for enrolling onto dressmaking/tailoring apprentices training programme. The data is presented in Figure 2.
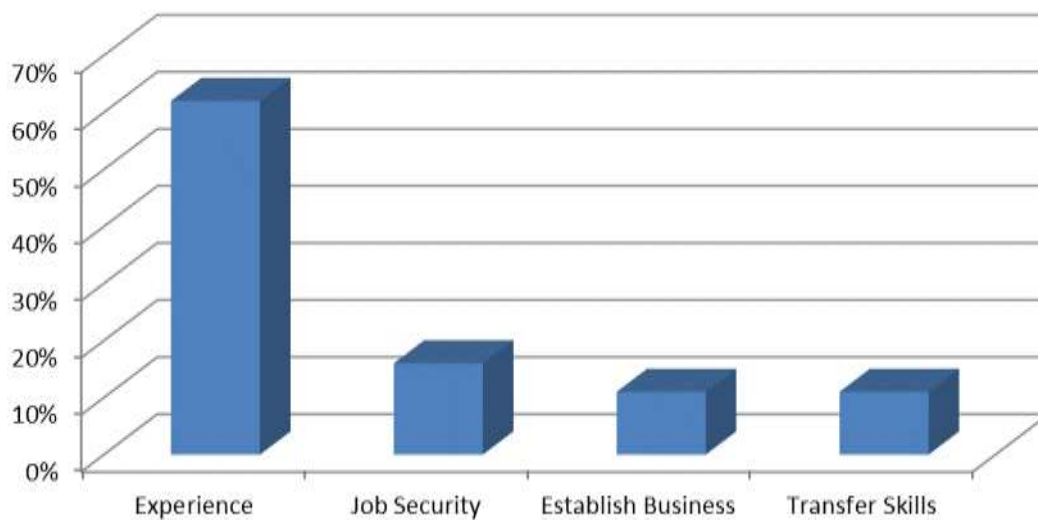
Figure 2. Reasons for Enrolling onto Apprenticeship Training Programme

Regarding the skill training expectations of apprentices during their training period, 62%, indicated they expect to gain valuable work experience and insight into the profession to enable them to work independently after completion. Sixteen percent (12%) indicated they wanted to know how to sew to enable them have job security, 9% said that they wanted to know how to make garments in other to establish their own businesses while 9% indicated that they wanted to know how to cut and sew garments and train others to do same for income in other to be independent in life. The result indicates that most of the respondents expect to gain valuable work experience and insight in the trade to enable them earn a living. Thus, they were motivated to enroll on apprenticeship by the fact that the training offers work experience, job security, would enable them establish their own business and transfer skills to others for a living. This is in line with the findings of (Aryeetey *et al*., 2011) that most youths enroll in apprenticeship training in order to earn a living. Again Palmer, (2009) found that apprenticeships provide the technical skills needed for paid employment.

Velde *et al*. (1999) expressed that, the nature of informal apprenticeship is sloppy and unstructured. However, Uwameiye and Iyamu (2010) and the African Union (2007) showed that conventional apprenticeship offers the biggest open door for the procurement of employable abilities in the casual part in West Africa, while in Ghana, the casual division represents more than 90% of all aptitudes training. Uwameiye and Iyamu (2010) further uncovered that roadside apprenticeship gives chance to training teenagers who drop out of schools. This helps keep the adolescent occupied and consequently keep them from taking part in social indecencies, such as robbery and drug trafficking.

4.4 Contractual agreements for enrolling the youth into apprenticeship programme

The study investigated the requirements for enrolling the youth into Dressmaking/ Tailoring Apprenticeship in Koforidua. The results are presented in Table 3

.

Table 3: Contractual Agreements for Enrollment onto Apprenticeship Programme

Requirements	No.	%
Tools and equipment, interest, basic education, training fees and soft drink	18	66.7
Training fees, tools/equipment and soft drink	4	14.8
Basic education, training fees and tools/equipment	3	11.1
Interest, training fees, respectful and tools/equipment	2	7.4
Total	**27**	**100**

Source: Field work, 2019

Table 3. shows the general requirements agreements for enrolling the youth into dressmaking/ tailoring apprenticeship in Koforidua. Majority of the trainers (66.7%) indicated that they required the incoming apprentices to have interest in learning the job, pay training fees, provide tools/equipment, provide soft drink and at least have basic education before they could enrolled them into the training programme. 14.8% of the respondents said that they required the youths who are willing to enroll into apprenticeship programme to pay training fees, provide tools/equipment and soft drink. Few, 11.1% stated that they expect the incoming apprentices to have basic education, pay training fees and provide tools and equipment to qualify them for enrollment. Only 7.4% indicated that they required the apprentices to have interest in the job, pay training fees, provide tools/equipmentto warrant their enrollment.

Breyer (2007) stated that the most common entry requirement for an apprentice is the training fee which is commonly referred to as the commitment fee. Peril (1970) found out that in addition to apprentices' fees, other items such as soft drink, foodstuffs, sheep, schnapps and tools/equipment are required by some trainers prior to enrollment into apprenticeship training. Berik *et al*. (2011) revealed that most apprentices in the Tamale metropolis do not pay commitment fee during the commencement of apprenticeship training due to the financial problem rather they may pay the charge on completion. The situation is however different in the southern sector as Aboagye (2014) found that an entry requirement is that, apprentices are expected to pay a commitment fee to show their readiness to be trained.

4.5 Payment for apprenticeship training

The amount charged as fees for apprenticeship training was investigated with the assumption that higher fees would deter the youth from enrolling into apprenticeship training.

Table 4. Fees Paid for Apprenticeship Training and Mode of Payment

Fees paid (GHS)	No.	%
100-200	3	11.1
201-400	16	59.3
Above 400	3	11.1
No idea	5	18.5
Total		**100**

Source: Field work, 2019

The cost of training had been an essential aspect of the apprenticeship training formalities. The result as presented in Table 4. shows that 59.3% indicated the apprentices were charged between GHS 201-400, while 18.5% had no idea about the payment since the payments were done by their parents or sponsors, and 11.1% indicated they were charged between GHS 100-200. Only 11.1% indicated they paid more than GHS 400 for the

whole period of 3 years. This shows that 22 of them paid fees while five (5) indicated that, the amounts were not known to them.

Peil (1970) and Mclaughlin (1979) hold the opinion that the amount an apprentice paid for training depended upon the complexity of the trade, the social status of the trainer and the value of the apprentice's labour to the trainer. Thus, Peil argued that the smallness of apprentice fees was intended to compensate for the long period the Master benefited from the apprentice's labour. International Labour Organization (1988) report indicates that some apprentices pay for their training while others work for their trainers without wages to offset any training fees. The report also indicated that some apprentices have access to boarding and lodging facilities and equipment in exchange for their services to their trainers.

Boehm (1995) posit that a few understudies pay for their preparation while others prepare to let go of their wages for the work, they do in lieu of installment for training. Different understudies who are blessed get free boarding and cabin or some pocket cash or incidental rewards. These could explain the reasons of the 18.5% apprentices who said they had no idea about any fee payment. According to Sharpe and Gibson (2005), many students see beginning an apprenticeship as genuine money related hazard. The expenses of training incorporate educational cost, instrument costs, bring down beginning wages than in different vocations, and the loss of wages amid piece discharge periods. Despite the fact that gifts are accessible in a few wards, it is regular for apprentices to spend so much in the initial enrollment into the apprenticeships training programme. Resultantly, understudies may come to see the expenses of apprenticeship as exceeding the advantages of getting the training. These expenses could deter the youth from enrolling onto dressmaking/tailoring apprenticeship programme.

Regarding the mode of payment by those who paid fees, 70.4% indicated they paid in monthly installment for the period of one year while the remaining 29.6% indicated they made full payment at the beginning of the training. This is an indication that the majority of trainers of the apprentices collected fees by monthly installment payments for the training. Again, the duration of the training was largely between 2-3 years. Approximately 52% f the respondents indicated that the duration of their training was within a period of 2-3 years while 48.1% indicated that their duration was precisely 3 years.

In a related study of informal training sectors in Africa in 1985, the I.L.O. concluded that apprenticeships lasted between three to seven years depending upon the complexity of the trade. Tailoring apprenticeship according to International Labour Organization (1985) took two to three years. Thus, the findings of this study fall in line with ILO (1985) duration of apprenticeship training in garment making. Frazer (2006) stated that the length of apprenticeship training programmes in Ghana is around three years by and large amid which an apprentice takes in an exchange, for example, dressmaking/fitting, metal-working or carpentry from an ace of that exchange.

Calaway (1968) stated that the duration of apprenticeship had a significant effect on the performance of the apprentice and the services rendered to the trainer. When training is prolonged, the apprentice learns more skills and gains more experience to render good services to the trainer. Similarly, Calaway and Adewale (1979) observed in different studies that most of the Master craftsmen delayed the apprentices beyond the time originally agreed upon in order to continue to take advantage of their free services. Three of the apprentices (11.1%) revealed that their trainers deliberately hid techniques from them so as to extend their apprenticeship unnecessarily and take advantage of their service.

Abban and Quarshie (1993) observed that apprenticeship training is in stages. As indicated by the researchers, the procedure starts with a stage where the learner is trained on the most proficient method to perform modest jobs. For example, cleaning the workshop or running errands for the ace and seniors. The following stage comprises becoming more acquainted with all devices, hardware, and materials required for the training. These include realizing what constitutes suitable devices for each activity, the materials, the fixings and the extra parts for the activity. The idea of the preparation is area particular and frequently item particular. Apprentices may figure out how to make or repair just a single thing at any given moment (Frazer, 2006). They additionally learn exchange related aptitudes, for example, how to deal with devices and repair machines and additionally broad business administration aptitudes like sourcing, estimating, and contracting. Aptitudes exchange happens predominantly by watching and impersonating (Johanson & Adams, 2004). In this way, abilities, learning, and dispositions are transmitted through perception, impersonation and at work understanding. In respect of formal professional training, apprenticeships are substantially more adaptable. Trainees, likewise have more applicable aptitudes since they do hands-on fill in rather than classroom training, an element that separates the casual apprenticeship framework from the formal apprenticeship or professional training.

5. Conclusions

The study concluded that trainees have the expectation of job security in future. That is trainees will be able to setup their own businesses or become entrepreneurs. Creating businesses will bring more youth into the garment industry which can help to reduce high unemployment rate in Ghana.

Another conclusion is that payment of money and items such as drinks, tools and equipment has been a challenge for parents to send their wards for apprenticeship training. This indicate that only those who can afford to pay can be enroll on the dressmaking / tailoring apprenticeship and this has affected enrollment into the apprenticeship training.

One other conclusion is that there is no structured form of advertising the dressmaking/tailoring apprenticeship training. Advertisement is done through churches, graduation ceremonies, media and trainers themselves for enrollment. The National Youth Employment Agency should have a regular seminar on the need for apprenticeship training in dressmaking/tailoring.

Finally, it can be concluded that, enrollment of the youth into dressmaking/tailoring apprenticeship training is a key to preparing the youth to work in the garment industry as artisans to sustain the industry and increase revenue on garment export and also reduce the large population of unemployed youth in Ghana. Enrolment into apprenticeship training has over the years reduced. The informal apprenticeship training is not properly structured and characterized by several challenges resulting in the low attractiveness of the industry to the youth. Dressmaking and Tailoring have spanned the contributions of the informal economy to national development, opportunities for job creations, a potential for revenue mobilization.

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RSEP

An analysis on complaint behaviour of hotel guests in Italy[1]

Farzaneh Soleimani Zoghi [1,•]
[1] *SRH Berlin University of Applied Sciences, Germany*

Abstract

The main purpose of this study is to analyse the complaint behaviour of hotel guests based on their online reviews. Furthermore, the importance of hotel responses to complaints and its impact on reducing customer dissatisfaction will be highlighted. The study is designed as explorative and inductive. The methodological approach is a content analysis on secondary data and the data used in this research is scraped from Booking.com. Tableau Data Analytics (2020.4) has been used to analysis the large amount of data in the database. The findings of the study underline the importance of monitoring and responding online reviews, since it is the most common place for hotel guests to write their complaint or feedback. Furthermore, the results call hotel managers attention to measure reputation risk level from the online reviews and take necessary action when its threshold is exceeded in service related areas.

1. Introduction

Giving that the online travel reviews are emerging as a powerful source of information for tourists, a greater attention on compliant behaviour should be paid. Despite the growing body of evidence about the impact of online reviews on guests' purchase behaviour, majority of hotels do not respond to the customer complaints and negative comments in online reviews and there is a considerable variation in response strategies in different hotels. A research study done by Barsky and Frame (2009) shows that 85 % of hotels have no guidelines for monitoring and responding to online reviews and only 4% of negative reviews get a response from hotels (Barsky & Frame, 2009).

In this section, major concepts on complaint behaviour are explained: First, online reviews and their impact on hotel guests buying behaviour will be discussed. Second, guests' complaint behaviour and hotel managers' complain response strategies will be elaborated. Finally, reputation risk management and its impact on customer satisfaction will be discussed.

1.1. Online Reviews

The increasing popularity of online reviews and their significant impact on individual buying behaviour has attracted many researchers to focus this development. In a study, Schuckert et al. (2015) analysed 50 articles related to online reviews in tourism and hospitality published in academic journals between 2004 and 2013. By using content analysis, these articles were grouped into five topical clusters, including online reviews and online buying (i.e. The effect of number, valence and ratings of reviews on purchase intention, price and online sales), satisfaction and management (customer satisfaction, complaints behaviour and compliant response), opinion mining/sentiment analysis (i.e. valence or ratings, total number of reviews, content analysis), motivation (i.e. motivation to posting, reading, and sharing reviews online), and finally the role of reviews (i.e. reliability of

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online reviews on e-commerce platforms) (Schuckert et al., 2015). In order to understand the impact of online reviews on consumer attitudes and behaviours, Browning et al. (2013) investigated the influence of online hotel reviews on consumer attributions of service quality and the ability of companies to control service delivery (Browning et al., 2013). Philips et al (2017) proposed a model that helps to explain which aspects of visitor experience, as voiced through social media, have the greatest impact on hotel demand as manifested by room occupancy) and subsequently revenue (Phillips et al., 2017).

1.2. Compliant behaviour

One of the generally accepted marketing principles is that retaining existing customers and improving their re-purchases is more profitable than attracting prospective customers. Although many hotel companies have begun to analyse customers complain behaviour, the industry has yet to fully explore the potential of this emerging data resource (Noone et al., 2011).

According to Crié (2003) complaint behaviour is a set of responses performed by a dissatisfied consumer. There is limited number of research designed to explain the various types of customer response to dissatisfaction. Crié (2003) proposed taxonomy of the types of responses to dissatisfaction in which response type has been classified as the response toward entity (Public response as complain to the company vs. Private response as word of mouth) and response as a behavioural or non-behavioural action (legal action vs. no action and forget or forgive).

Despite the growing body of evidence, not all hotels respond to negative online reviews, and there is considerable variation in response strategies. A research study done by Barsky and Frame (2009) shows that 85percent of hotels have no guidelines for monitoring and responding to online reviews. Levy et al (2013) conducted interviews with hotel executives and statistical analyses and suggested that complaint response has not been done systematically by hotel managers. For example, one of the general managers of an upper upscale branded hotel expressed that Trip Advisor is the only online ratings site which his hotel monitor and respond. Since Trip Advisor accounted a percentage of the total customer's online reviews it is possible that the hotel is missing needed information from other guests. In the same research, a general manager of an independent downtown hotel claimed that he has not been asked to respond to reviews from chief executive officer of the hotel but he does it only based on his personal commitment (Levy et al., 2013). A study investigated hotel responses to customer reviews and found that some hotels rarely respond to online reviews. The study furthermore demonstrates that hotels have divergent approaches to online review response even within the same brand families (Park & Allen, 2013). Clearly, most hotel managers understand the importance of responding to online complaints, yet the hotel industry remains in a quandary regarding how they should respond to negative online reviews (Min et al., 2014).

1.3. Customer Satisfaction

A review of the existing literature indicates a wide divergence in the definitions of satisfaction. Kotler (2000) defines satisfaction as an individual's feelings of pleasure or disappointment resulting from comparing a product's perceived performance in to their expectations". According to Oliver (1987), satisfaction is "the overall level of contentment with a service/product experience" (Oliver, 1987). So, it is a judgment that product or service features, or the product or service itself, provide a pleasurable level of fulfilment as a consumer response (Abbasi et al., 2010). According to the expectation-disconfirmation theory (Oliver, 1977), consumers are satisfied if the perceived quality of products and services meets or exceeds their expectations. Otherwise, they are dissatisfied (Churchill, 1982). Giese and Cota (2002) identified two major components of satisfaction; according to the authors, consumer satisfaction is either an emotional or cognitive response. This response pertains to a particular focus (such as expectations, product, consumption experience, etc.).

Online review is the most common place for consumers to write a complaint or feedback, express their feelings, comment on their satisfaction level, and rate a place, service, or a hotel (Schuckert et al., 2015). The contents of positive online customer reviews indicate their satisfaction, and the contents of negative reviews indicate their dissatisfaction (Xu, 2019). In a recent study, Xu (2019) found that the attributes of products and services – Including staff, physical setting, value, and location – have different effects on customer satisfaction or dissatisfaction in relation to chain and independent hotels, and for hotels with different star levels (Xu, 2019).

1.4. Reputation Risk Management

The popularity of online review postings on social media has made online reputation management inevitable for the success of every business. Negative comments and reviews could significantly impact the reputation of a hotel and lead to unfavourable consequences. Reputation Risk management for the hotels is one of the areas that have not received enough attention from hotel managers. A research study done by Barsky and Frame (2009) shows that 85 % of hotels have no guidelines for monitoring and responding to online reviews and only 4% of negative reviews get a response from hotels (Barsky & Frame, 2009). As a service-based industry, it is essential for hotels to listen and respond to guest's online reviews and formalize this process by implementing a

systematic approach that incorporates the individual hotel's objectives and strategies. A survey by Clutch (2018) indicates that about 54% of digital marketers consider online reputation management necessary for company success. Moreover, 0ne-quarter of the companies surveyed had realized growth in sales from investing in online reputation management and monitoring (Seter, 2018).

2. Methodological Justification

The study is designed as explorative and inductive. The methodological approach which has been used in this study is a content analysis on secondary data. The data used in this research is scraped from Booking.com and is publicly available to everyone already (klaggle.com).The original dataset contains 515000 customer reviews and scoring of 1493 luxury hotels across Europe. Tableau Data Analytics (2020.4) has been used to analysis the large amount of data in the database. The csv file contains the name and address of the hotels, date when reviewer posted the corresponding review, average score of the hotel (calculated based on the latest comment in the last year), nationality of reviewer, negative review the reviewer gave to the hotel, positive review the reviewer gave to the hotel and etc. The data related the hotels in Italy have been extracted from this dataset and has been analyzed separately. Table 1 shows the characteristics of the hotels in the database of Italy.

Table 1. Characteristics of Hotels in Database (Italy)

Description		
Total Number of Hotels in Italy	173	
Hotel Type	Luxury	Four Star
Review Date	4.8.2015	3.08.2017
Average Score on Booking.com	5.2	9.8

Guests from more than 170 countries have written their reviews on this database about their stay experience in the hotels in Italy. However, by taking review word numbers as the criteria (more than 3,000,000 words) the nationality of the reviewer has been classified as Figure 1. Three English native speaking countries have left the most number of words in the reviews. One of the corresponding reasons could be simply the proportion of guests' number from these countries. The second reason could be the language setting on booking.com. In another word, writing in English language could be much easier for a native speaker compare to the others. The lengths of comments and the correlation between the word numbers and nationality of reviewers could be examined in another research. The findings could help managers to get a higher response rate on customer satisfaction survey.
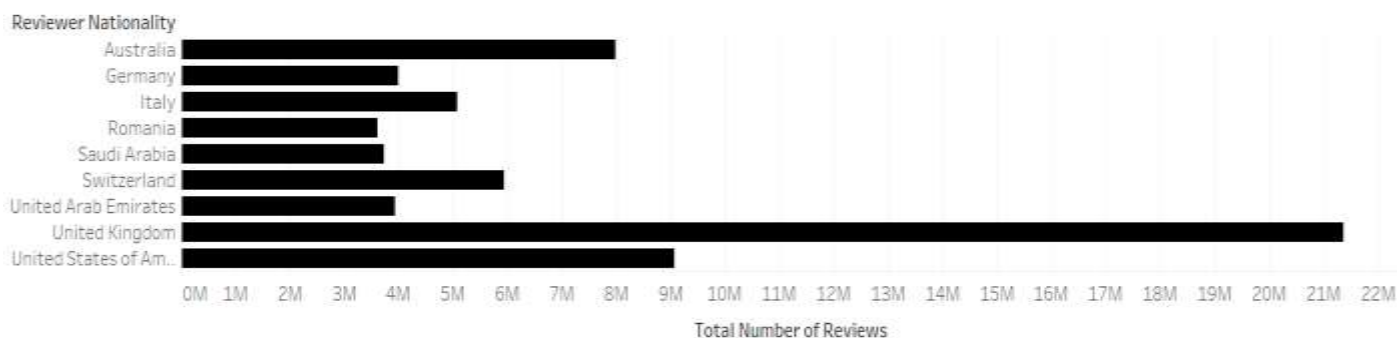
Figure 1. Reviewer Nationality in Database (<3,000,000 words)

The total number of hotels in Italy is 142 hotels in the database. However, only 35 hotels with the most negative reviews in the database (i.e. a range of 5000 to 55000 reviews) have been selected for the analysis. Table 2 shows the characteristics of hotels in Italy with the most negative review numbers in the database.

Table 2. Characteristics of Hotels (Negative Reviews)

Description	Number	Total
Negetive Review Number		35
• 5000-15000	31	
• 15001-25000	1	
• 25001-35000	2	
• 35001-45000	0	
• 45001-55000	1	
Ownership Status		35
• Chain	20	
• Non-Chain	15	
Hotel Category		35
• City Center Hotels	34	
• Resort Hotels	1	
Review Date	4.8.2015	3.08.2017

By looking at review scores of all these hotels on three most common rating platforms (Google, Booking .com and Trip advisor) on November 2020 a significant change has been noticed in the improvement of ratings of some hotels. This comparison indicates that some hotel managers have been acknowledged the negative comments and by responding them they have achieved a better score in customer satisfaction rate in 3 years.

As seen in Table 3 from 20 chain hotels almost 50% have improved the review scores and from 15 non-chain hotels almost 30% have the same score or slightly better scores. One reason could be the application of a more systematic reputation risk management in chain hotels due to availability of resources compare to the non-chain hotels. The review scores on Google review and Tripadvisor site show a different score for the same hotels. For example, Hotel Id.1 has score 4,1(range 3,3 to 4,7) on Google review and it is the 25th hotel from the top, however, the same hotel on Tripadvisor site has score 3,5 (range 2,5 to 5) and it is the 28th hotel from the top. These differences in the scoring could be due to the different behaviour that various segments of hotel guests perform in different online purchase/booking platforms. The only hotel that has the lowest score in all three rating platform and is the last hotel in the list is hotel Id. 4.

Table 3. Characteristics of Hotels in Database (Italy)

Hotel ID	Negative Number/ NonChain Review Chain-	Booking.com Score 2015-2017	Google Hotel Review score 2020	Booking.com score 2020	Trip-advisor score 2020
1	50035 /Non-chain	8,1	4,1	7,9	3,5
2	25709/Non-chain	8,3	4,1	8,2	3,5
3	25676/Non-chain	8,8	4,3	8,7	4
4	15365/Chain	6,9	3,3	6,6	2,5
5	12196/Non-chain	8,4	4,2	8,2	3,5
6	12136/Chain	7,5	3,9	7,9	3,5
7	12127/Chain	**8,1**	4,2	**8,5**	4
8	11841/Chain	**8,6**	4,4	**8,6**	4
9	11168/Chain	**8,1**	4	**8,2**	4
10	10966/Chain	**8,5**	4,3	**8,6**	4
11	10350/Chain	8,7	4,3	8,6	4
12	10260/Chain	**8,4**	4,2	**8,5**	4
13	9877/Chain	**9**	4,5	**9,1**	4,5
14	9730/Chain	8,7	4,5	8,6	4,5
15	9238/Chain	8,7	4,3	8,8	4
16	9038/Chain	8,3	4,3	8,2	4
17	9036/Non-chain	**8,5**	4,2	**8,5**	4
18	8600/Non-chain	**8**	4	**8,2**	3,5
19	8562/Non-chain	9,2	4,4	8,9	4,5
20	8238/Non-chain	8,3	4	8,2	4
21	7962/Chain	**8,6**	4,4	**8,7**	4
22	7738/Chain	8,6	4,3	8,7	4
23	7679/Non-chain	**8,5**	4,3	**8,5**	4
24	7596/Non-chain	9	4,3	8,5	4
25	7450/Chain	8,5	4,3	8,3	4

26	7448/Non-chain	8,4	4	8,2	4
27	7394/Chain	**7,8**	3,9	**7,8**	3,5
28	7118/Non-chain	**7,8**	4,1	**8,2**	3,5
29	6790/Chain	8,1	4,1	8	4
30	6016/Chain	9,5	4,7	9,3	5
31	5499/Non-chain	8,1	3,9	8	3,5
32	5494/Non-chain	**8,6**	4,3	**8,7**	4
33	5463/Chain	8,6	4,3	8,3	4
34	5401/Chain	**8,4**	4,1	**8,4**	4
35	5220/Non-chain	**8.5**	4,2	**9,1**	4

3. Discussion of Results

Digital business strategy creates new opportunities for value creation. The popularity of online review postings on social media presents opportunities for hospitality and tourism practitioners to fine-tune their offerings and personalize their responses to unsatisfied customers. The Impact of this study is to highlight the importance of acquiring a systematic process to manage guest's complaints by considering the influence of national culture on hotel guest's satisfaction.It is not easy to generate good results simply through managing or responding to online reviews. Empirical research shows that response to complain increase satisfaction level of complaining customer in future; however the future satisfaction of complaining customer decrease if they do not receive a response (Gu & Ye, 2014).

A suggestion for future research is a quantitative study to fit a regression on reviews and score (to see which words are more indicative to a higher/lower score). Furthermore, correlation between reviewer's nationality and scores could be measured. Finally, a sentiment analysis on the reviews could be performed to classify the major focus of the complaints.

Implications for the Advancement of Industry Practice

In current study the importance of hotel manager's responses to complaints and their impact on increasing customer satisfaction has been highlighted. Appropriate responses to negative reviews can create and increase future revenue for hotels (Noone et al., 2011). Managers who respond successfully to comments on online review platforms can turn an unsatisfied customer into a loyal one (Pantelidis, 2010). As a service-based industry, it is essential for hotels to listen and respond to guest's online reviews successfully and formalize this process by implementing a systematic approach that incorporates the individual hotel's objectives and strategies. Based on the findings of this study a model of complaint management for hotels could be proposed that measures customer voice on the online reviews and take necessary action when dissatisfaction threshold is exceeded in specific areas.

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The fiscal stimulus in Algeria between 2005 and 2014: A predictable failure

Abdelaziz Mokrani[1],• , **Abdelouahab Boufedji[2],♦, Abdelaziz Arab[3],***

[1] *PhD in economics, University of Boumerdes, Algeria*
[2] *PhD in economics, University of Boumerdes, Algeria*
[3] *PhD in economics, University of Boumerdes, Algeria*

Abstract

This paper tries to show that the massive public expenditures incurred in Algeria, during successive growth programs since the early 2000s, didn't give rise to the economic growth rates that could justify such a vast amount of expenditures. This situation poses a problem of rares wasted resources and poor performances. With little effect on economic growth, increased income distributed during these programs have given rise, however, to an unprecedented increase in imports of goods and services. From a purely theoretical point of view, this situation is paradoxical but not impossible. A simple IS-LM model made it possible to predict this outcome. The structural and institutional constraints of the Algerian economy, clearly indicated the likelihood of such an outcome. From the beginning, the instigators of this economic policy should know its limits and choose another one. That is very important for a country like Algeria whose economy is weak and dependent. Ultimately, it is the strategy of insertion of the Algerian economy into the global economy that, finally, will determine the outcome of any growth policy.

1. Introduction

The March 17, 2019 edition of the Bloomberg agency said that Algeria is becoming the sixth member of the "shaky five" of OPEC[1]. The article refers to the political crisis that has shaken the country since February, following the outgoing president's desire to run for what would have been a life-time presidency. This crisis is likely to aggravate the decline in oil production (a drop of 400,000 barrels/day since 2014). This political crisis occurs in a very gloomy economic context, due to a drop in Algerian financial revenues, following a sharp fall in oil prices.

In fact, the causes of this spring 2019 citizen uprising are not only political. The economic factors played a key role in this major event. The economic crisis that hard hit the country following the brutal turnabout of the international oil market, since 2014, has various aspects: huge foreign trade and fiscal deficits, running the printing press and rampant inflation, economic stagnation, austerity policies and aggravation of unemployment, etc. This crisis comes after a period of splendour, from 2001 to 2014, when exceptional oil prices allowed the country to gain considerable sums of international payments. During that period, this financial windfall was used

[1] The other five are Iran, Venezuela, Nigeria, Libya and Angola.

by the public authorities for the prepayment of Algeria's external debt, the constitution of foreign exchange reserves, and funding the development and modernization of infrastructures (BP, 2014, p.17).

As will be indicated in the text below, the expected results of these public expenditure programs never materialised. The economic growth rates have been very disappointing given the amount spent, and unemployment has remained at high levels. However, this is not the main issue of the article. The most interesting part of the article is to show that, theoretically speaking, relying on a simple *IS-LM-BP* model, the unsatisfactory results achieved by these programs were predictable. This failure, beyond the relevance of the mode of economic governance who has endorsed such a strategy, calls into question, above all, the legitimacy of the political authority under the responsibility of which this policy was conducted.

This issue may seem rudimentary and rather unambitious. However, if we put the subject in the local context of the period, the importance of our article appears more clearly. The economic crisis in which Algeria has been plunging since 2014 is a direct consequence of the policy that has been followed throughout the previous decade. If, therefore, the outcome of the strategy that guided economic policy for such a long time was known in advance, the interest in the article becomes all the more certain, as some oil-producing countries like Venezuela, Nigeria and Angola face similar challenges. The article also makes it possible to provide an answer to the question that was raised by many Algerians, at the height of the ongoing political crisis, about the fate of the amounts spent during this economic strategy: " What has happened to the 1000 billions of dollars? ". It is the suspicions of the widespread corruption and mismanagement surrounding the spending of these amounts that would be one of the factors behind the outbreak of the citizens' revolt during this spring 2019.

It should also be noted that the data of the article stop at the year 2014 because, from this date, the government expenditures changed logic. They went from an expansionary one, allowed by the budget surpluses of the previous period, to a logic of mitigating the effects of the crisis that began that year, by means of the fund of the State regulation receipts which was instituted years ago.

2. 2005-2014: a strong inflection in the curve of public expenditures

In 2005, the Algerian authorities have decided to launch a program of public spending primarily focused on the development and modernization of infrastructures and public facilities. Initially valued at $ 45 billion, subsequently increased to $ 155 billion to cover the period 2005-2009, the *Program for Growth Support*, was renewed in 2010 as part of a five-year plan called *Public Investment Plan* with an amount of $ 286 billion[1].

Figure 1 reflects the evolution of public spending from 1980 to 2014[1]. On the first side, it shows a very contrasted evolution between 1990 and 1980 decades, and in the other side, the period 2005-2014. Like other oil countries, government expenditures are highly correlated to changes related to oil taxes through the international oil prices[2]. The government spending changes during the first period fits perfectly with the evolution of oil prices in international markets. We notice perfectly the successive and opposite impacts of the oil crisis on the evolution of government spending.

From this point of view, the successive increases in public spending occurred since 2000 can be seen as a catch-up effort from delays in infrastructures and public facilities accumulated for nearly two decades due to the government shrinking tax revenues following the oil crisis of the late 1980s[3].

If the fact that public spending rerises after a long period of austerity is something quite normal, however, the increase rate in these expenditures, very high in recent years, is not without posing the problem of the rationality of such a contrasted trend. This one goes against the recommendations of international financial organizations that require to the governments of countries facing severe economic fluctuations - the oil countries are a perfect illustration - to ensure that the state budget serves as countercyclical stabilizer. A proportion of the financial surplus of good years is to be set aside to finance the deficits of lean years.

In Algeria, this precautionary principle was put into practice, officially from 2000, with the creation of the Receipts Stabilization Fund (RSF). The latter is supplied from the difference between budgeted oil taxes, drawn up on the basis of a barrel at 37 dollars, and the real oil tax, resulted from oil sales calculated on international markets average price[4].

Taking advantage of external financial upturn of the 2000s, the Algerian government has increased the allocation of the RSF, from 453.2 billion Dinars, the year of its creation to 7.917 billion Dinars in 2012[5].

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[2] The oil tax is 76%; from 2009 to 2013, for example, it represented between 58 and 40% of total government revenues. Ministry of Finance.
[3] For 2013, the exception that represents the decline in the level of public spending is due to the non-enactment of a complementary finance act, a practice that has become the norm for many years.
[4] Until 2008, the government budget was issued on the basis of $ 19 a barrel of oil, then $ 37 since this year. These levels are well below the average real price of oil on international markets.
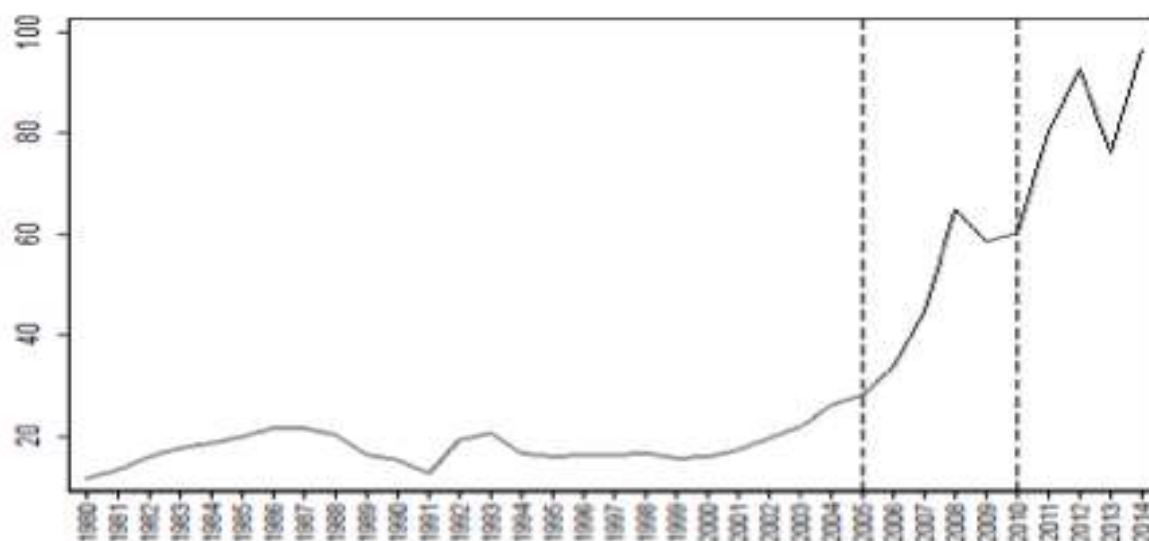[5] That is $5.86 billion and $ 102 billion respectively.

Figure 1: Public expenditures in the period 1980-2014 (billion of current USD)[6] –

Source: *World Development Indicators*, World Bank.

In the following paragraphs, when talking about budget deficits, we need to understand that they are fictitious deficits insofar as the real revenues of the government exceed its overall spending.

Table 1. The assets of the Receipts Stabilization Fund, 2000 - 2012 (billion of dinars)

2000	2001	2002	2003	2004	2005	2006	2007	2008	20009	2010	2011	2012
453	356	198	477	944	2090	3640	4670	5503	4681	5635	7143	7917

Source: Ministry of Finance

In 2011, Algeria budget revenues reached 3.4738 billion Dinars while the government spending attained 5.9304 billion Dinars; this led to a final deficit of 2.4566 billion Dinars. The assets withdrawn from the RSF to pay off the public deficit reached 2283,2 billion Dinars in 2012, the most important since 2000. The withdrawn in 2012 appear largely up to those recorded in 2011, when they reached 1.7614 billion Dinars–[7]. In late 2012, the RSF assets after withdrawal were amounted to 5.6337 billion dinars against 5.3817 billion Dinars at the end of 2011. The surplus on oil taxes, usually supplying the RSF reached 2.5353 billion Dinars in 2012. For 2013, this tendency to massive use of the Stabilization fund has not been contradicted. Thus, an amount of 2.1324 billion Dinars was deducted from the RSF assets to cover the 2.3104 billion Dinars public deficit (Ministry of Finance, 2013).

These assets were used in the early years to prepay the debt of the state, which was a foreign debt mainly. This one has decreased from $ 23.3 billion Dollars in 2003 to 17,19 billion in 2005 and 5.6 billion in 2006 (Bank of Algeria, 2006). From 2006, the RSF has changed its vocation. Its funds were exclusively used to cover the Treasury budget deficit, induced by the five-year development programs. Since 2006, the assets' withholdings remained at a significant rate due to the worsening of the budget deficit.

Data from the Ministry of Finance (2013) indicate that the RSF was requested to cover the Treasury deficit to an amount of 91.5 billion Dinars in 2006, 531.9 billion Dinars in 2007, 758.1 billion Dinars in 2008, 364 billion Dinars in 2009, 791.9 billion Dinars in 2010 and 1761 billion Dinars in 2011. Thus, the oil barrel price which

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[6] Public expenditures are generally expressed in local currency. We preferred to express them in current dollars because the Dinar devaluations that took place in the early 1990s may make it less readable the real evolution of public spending. See the link on this subject: http/perspective.usherbrooke.ca

[7] The budget of Algeria soared in 2012 because of the financial impact of the application of compensatory regimes and special status resulting in an overall deficit Treasury amounting to over 25% of GDP, largely filled by RSF savings. Wages of the Civil Service thus increased, between 2008 and 2012, from 1126 billion Dinars to 2850 billion Dinars.

balances the state budget rose to $ 21.32 in 2004, $60.58 in 2010, $68.46 in 2012 and over than $71 in 2013–[8]. The regulatory amendments introduced in the function of the RSF since 2006 to enable public authorities to freely dispose the funds that it holds, finally put an end to the pro-cyclical savings function assigned to this financial instrument (Boukelia, 2013, p.21).

The capital contributions mobilized during these equipment programs are, in all respects, very important and likely to remain unprecedented. The Ministry of Finance report quoted above indicates that in 2013, State spending for direct and indirect public subsidies for the essential goods (milk, water, bread, fuel, energy) and social programs (education, housing, health, higher education) reached 1.603 billion Dinars more than $ 20.5 billion, that's the equivalent of 22% of the budget State and 9.3% of GDP.

3. The impact on economic growth and external balance

Beyond the direct cost representing the public spending weight for the economy through this policy, the latter was conducted over a relatively long-time interval to allow making a first estimate. We do here a first evaluation of performances in terms of economic growth and the current account balance, which are the two most relevant criteria for this study.

3.1. Feeble rates of growth

Concerning the first objective, from 2004 to 2013, the GDP real growth rate has hovered around an average of 3.3% (IMF, 2005-2013, pp. 56-57). During this period, as shown in Figure 2, the Algerian economy did often less than other regional economies, and compared to African countries south of the Sahara, Algeria's growth rates are very disappointing.
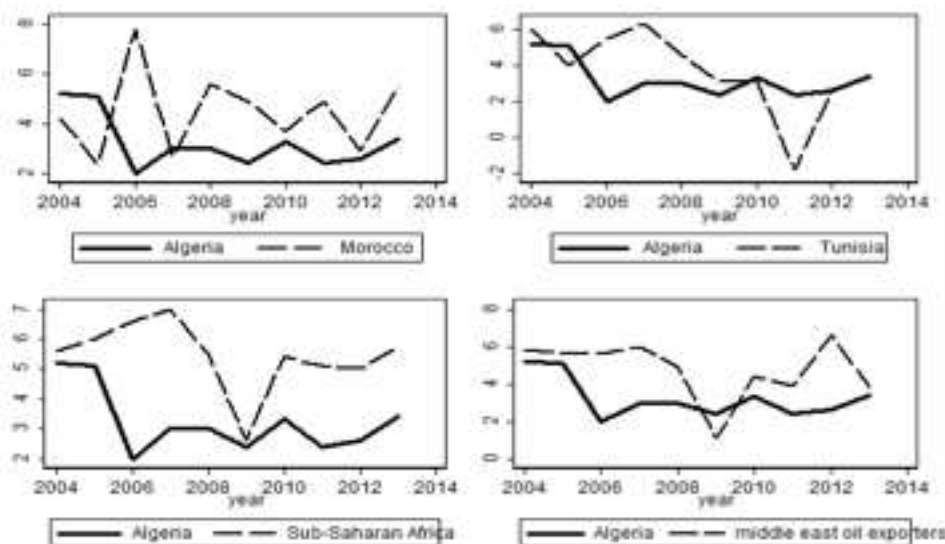
Figure 2. Comparison of economic growth rates in Algeria with neighbor countries and regional subsets (2004-2013)

Source: FMI, *World Economic Outlook*, Annual Reports

Thus, countries belonging to the same geographical or economic area as Algeria, mostly without having the same economic and financial strengths, achieved higher growth rates[9].

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[8] Calculations done by the authors.

[9] The few times where the Algeria growth rate is higher, it coincided with unusual or unpredictable factors that have severely affected these countries: weather conditions in Morocco, political crisis in Tunisia and the global economic crisis consequences for the sub-Saharan African countries and Middle-East oil exporters.

Table 2. Evolution of GDP and public expenditures measured in constant 2005 dollars (billion of Dollars)

	2005	2006	2007	2008	2009	2010	2011	2012
GDP	102,3	104,3	107,5	110	112,7	116,7	119,6	122,5
Public expenditures	27,9	30	35,2	41,5	47,3	42,6	48,2	53,6

Source: *World Bank* and calculations made by the authors based on data from the Ministry of Finance

As evidenced in Table 2, the Algerian growth, rather modest, is derived primarily from the increase in the contribution to the national income of public expenditures. They remain, with exports of hydrocarbons, the main component of Algerian GDP.

These two variables have grown in a relatively divergent way; indeed, they all have both increased throughout the period, but the growth of public spending is much stronger. On an annual average, the GDP grew by 2.55%, while government spending increased by 10.14%. Each year, it needs, on average and in real terms, to spend four points more to get a point of extra income.

In Algeria, the coefficient of correlation between these two magnitudes, $\square$, calculated on the basis of *World Bank* data (2013, p.79), is estimated to 0.64, which is significantly positive[10]. This situation is also confirmed through the evolution of the government spending ratio to GDP, which shows the presence of a strong and growing proportionality between public expenditures and domestic product.

In the identity that expresses the equation of national income, the increase of the public spending/ GDP ratio is necessarily at the expense of the share of other components in the national income.

Table 3. Changes from 2006 to 2012 in the components of the national income (%)

	2005	2006	2007	2008	2009	2010	2011	2012
Household Final Consumption	33,8	31,8	31,3	30,2	37,6	34,3	30,2	32,9
Gross Accumulation of Fixed Capital	18,5	15,5	14,8	11,7	20,2	22,2	20,9	17,2
Public Expenditures	27	28	31,4	38	41,9	36	40	44
Net Exports	20,7	24,7	22,5	20,1	0,29	7,5	8,9	5,9

Source: Bank of Algeria and National Statistics Office

Table 3 shows two major trends; from 2006 to 2009, due to a large surplus in the trade balance, the share of total government spending rose steadily, but at the expense of investment that fails to follow the rapid pace of national income. After 2009, the additional income dispatched through the public expenditure programs causes a significant increase in imports, which reduces the contribution of net exports to GDP. We will see later that these developments occurred in accordance with the scenario predicted by economic theory.

To conclude this section, we must say that this situation is not unique to Algeria. Generally, macroeconomists are skeptical about the possibility for a macroeconomic policy to affect the long run rate of economic growth (Rodrik, 2004, p.67). For them, there is in fact an uncoupling between economic policy (budget deficit, taxation, money supply), which should mainly affect prices and income stability, and long-term growth that should only depend on the structural characteristics of the economy (respect of property rights, market structure, market mobility, etc.) [(Easterly, 2005, p. 1037); (Acemoglu et al, 2003, p.13); (Aghion, 2007, pp. 284-285)].

What made the Algerian case special, is the extremely sensitive nature of the assets used during this policy and the memorable nature of it. This policy is being whacked on another obstacle, which is the unfavorable trend in the country's trade balance (Ames, 2001, p.21).

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[10] This coeficient, significant at 1%, was calculated by the Spearman's formula using data covering the period 2004-2012.

3.2. The trade balance under pressure

On the balance of payments front, as shown in Table 3, several highlights need to be emphasized. First, exports and imports evolved almost parallel. The two quantities are experiencing very strong growth, which is more outstanding for exports in the early years of the period. In annual rate average of growth, exports increased between 2005 and 2013 by 7.8%, while imports grew by 14.7%. However, while exports of goods (mainly hydrocarbons) are experiencing a real slowdown in recent years, imports of goods continue to grow significantly[11]–. For 2013, the data shows that imports reached a record level of $ 55 billion against a level of exports falling to about $ 67 billion, largely as a result of a downward trend in the production of hydrocarbons.

Table 4. Evolution of foreign trade and foreign exchange reserves (billion Dollars)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Exports Fob	24,47	32,22	46,38	54,74	60,57	78,58	45,18	57,09	72,88	71,73	67
Imports Fob	13,32	17,95	19,57	20,68	26,35	37,99	37,40	38,88	46,92	51,59	55
Exchange Reserves (excluding gold)	32,92	43,1	56,2	77,8	110,1	143,1	148,9	162,2	182,2	190,6	194
In months of goods and non-factor services imports	**24,3**	**23,7**	**27,3**	**36,6**	**39,7**	**34,9**	**36,4**	**38,3**	**36,7**	**36,5**	**36,07**

Source : Bank of Algeria

This upward trend in imports of goods, is the most distressing because it combines with an equally significant increase in imports of services. These, which were $ 2.44 billion in 2001, have continued to increase, reaching in 2011 the sum of 12.55 billion. Thus, the deficit in this post that oscillates around $ 8 billion last years undermines all the surplus in the trade balance, itself showing a definite drop from the record level of 2008. It becomes more difficult in these conditions to continue to feed foreign exchange reserves. Their level, sharply increasing since 2001, peaked at $ 194 billion in 2013, and since 2014 have continued to decline to $ 79.8 billion in January 2019[12]. In the first half of 2013, the balance of payments has recorded a deficit of 1.2 billion, the first one since many years (Bank of Algeria, 2013).

It now appears that the achievements made during the two five-year plans, 2005-2009 and 2010-2014, were funded by using foreign currency at a rate of 65%, while 55% to 60% of domestic bank loans related to financing imports [13]. This was predictable because of the very precarious situation of the national productive apparatus, weakened by over two decades of crisis(Bradford, 1991, p.481) . Professor Lamiri considered that the economic elite of the country has failed in its mission of critical and impartial observer by giving a "total" support to government stimulus plans that, according to him, have cost the country "15 years and $ 500 billion for nothing."[14]

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[11] In Table 4, we find that foreign exchange reserves continue to grow in 2011 and 2012, while the number of months of imports that can cover is itself declining.

[12] The amount of foreign exchange reserves is really important only for a country, like Algeria, which is highly dependent on its exports of raw materials, whose prices may fluctuate significantly in the short term. This importance becomes quite relative when it comes to a country well integrated in the global economy.

[13] The Financial Times. May 12, 2014.

[14] *Liberté* newspaper. January, 08, 2014.

4. A predictable outcome: what we learn from the Mundell-Fleming model

The following paragraphs were inspired by J-O Hairault (2000, p.128). In this section, we will use an *IS-LM* model to try to show that Algeria's current macroeconomic situation matches the lessons learned from this theory[15]. Despite its limitations, mainly related to an analysis focusing too much on a global and static approach to be in position to take account of microeconomic agents choices, let alone expectations they are required to do, however, this model offers a quite solid theoretical framework to achieve conclusions consistent with those that concern us here (Langot, 2000, pp.151-154). It should also be recognized that this model is the product of an analysis, which is set in a market economy whose institutional framework is fully completed. This is not the case of the Algerian economy which can be seen, under analytical standards, as an atypical economy due to the absence of significant arbitration mechanisms like the financial market and the exchange market. We face here a situation where unrealistic assumptions still allow achieving meaningful results[16].

In this model, Algeria will be considered as a small opened economy, changes in its macroeconomic variables have a negligible effect on the rest of the world. This openness is rather relative especially with regard to capital movements. This is not a fatal handicap to the extent that the chosen model includes the situation of countries with low capital mobility.

The *IS-LM* model in an open economy is built around three equations, *IS*, *LM* and *BP*, each representing the balance between supply and demand in the relevant market[17]. These are, as everyone knows, markets for goods and services, currency and foreign trade, respectively. We will describe briefly the *BP* equation, the one related to the balance of payments, and we settle for a simple presentation of the first two because of the elementary nature of these. According to this model, the *IS* equation describes an equilibrium in the market of goods and services in which firms, constrained on their supply outlets, produce the required amount, *Y*, to meet aggregate demand Y_d.

In a closed economy, the *IS* equation can be written as:

$$Y = Y_d = C\,(Y\overline{}T) + I\,(r) + G$$

where :

 Y: total income

C: the function of household consumption, $C = C_0 + c\,(Y\overline{}T)$

where *c* is the marginal propensity to consume,

T : taxes

r : the real interest rate

I : firms' investment whose function is : $I(r) = I_0 - a_1\,r$;

$a_1 > 0$ being the degree of correlation between investment and interest rates.

G : Public expenditures, considered as an exogenous variable, *i.e.* $G = G_0$.

The steady state income is then expressed as:

$$Y = \frac{A - a_1 r}{1 - c} \qquad\qquad (IS)$$

with, $A = C_0 + I_0 + G \overline{} cT$

A is the autonomous component of demand or, in other words, the determinants of demand that do not depend on the interest rate or income.

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[15] Proposed by Sir John Hicks in 1937 in his article, "*Mr. Keynes and the Classics*". Despite the many criticisms it has received, this model is very taught and is propaedeutic for dynamic macroeconomic models. In a later article, Hicks admitted he has omitted and misunderstood some of the arguments of Keynesian thought, especially that of uncertainty (John Hicks, 1980-1981).
[16] Milton Friedman (1953, p.283) was originally of a major theoretical controversy by considering that the realism of the assumption of perfect competition does not really matter insofar as the conclusions of the theory are operational.
[17] They are in fact two separate authors' works, Mundell (1963, p.475), and Fleming (1962, p.371).

The equilibrium on the monetary market expresses the equality between the money supply, created by the State, and the stock of money held by households. The motives for holding money shows that the demand for money, M_d, increases with real income, Y, (motives of transactions and precaution) and decreases with the interest rate, r, (motive of speculation). The motives for holding money assets show that the demand for money, M_d, increases with real income, Y, and decreases with the interest rate, r. With P the index of goods and services prices consumed by households, the demand for money can be defined by the following equation:

$$\frac{M_d}{P} = L(Y,r) \quad ; \quad L1(Y,r) > 0, \quad L2(Y,r) < 0$$

As the equilibrium on the monetary market implies $Md = M$, it can be written:

$$\frac{M}{P} = L(Y,r)$$

The *LM* equation implies a relationship between income and the interest rate. It is possible to simply lay down the direction of this relationship by assuming that the demand for real balances has a linear form: $L(Y,r) = \ell_1 Y - \ell_2 r, \quad \ell_1 > 0 \quad \ell_2 > 0.$ The *LM* equation becomes:

$$r = \frac{1}{\ell_2}\left(\ell_1 Y - \frac{M}{P}\right) \qquad\qquad (LM)$$

The relationship between the interest rate and income is increasing. Indeed, when income increases, the demand for money increases; households, therefore, sell their securities which reduces their prices and increases the interest rate, allowing a return to equilibrium in capital markets.

In this case, the multiplier of public expenditures that are financed by borrowing, $(\Delta Bg \ / \ P)$[18], which is the implicit methode of funding in the *IS-LM* model since the stock market does not appear explicitly, and by considering only the coefficient on public expenditures in the income equilibrium equation, is equal to[19]:

$$\left(\frac{\Delta Y}{\Delta G}\bigg|_{\Delta G = \frac{\Delta Bg}{P}}\right) = \frac{1}{(1-c) + \frac{a_1 \ell_1}{\ell_2}} \qquad\qquad (1)$$

In an *IS-LM-BP-* model, the openness to the rest of the world adds a double constraint to it; a real constraint and a financial constraint, which has as consequence the necessity to take into account new variables for working out equations that define the equilibrium of the model and its new properties[20]. The real constraint appears through goods and services exports and imports. The financial constraint, which should not be viewed independently of the previous one, establishes the methods of funding an opened economy (Frieden, 2020, p.8).

4.1. Behavior assumptions

Assumptions relative to consumer behavior, investment, money demand, public spending and taxation are not affected by the openness of the economy; so, they remain the same as in the previous paragraph. We assume for simplicity that the government does not take taxes, that $T = 0$, and that autonomous demand components are negligible, which gives: $I_0 = C_0 = 0$. The money supply function does not remain the same in an opened economy, which requires redefining and specifying the imports, exports and capital movements functions.

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[18] The size of the multiplier depends on the value of the four following parameters: the marginal propensity to consume c, the sensitivity of investment to interest rates $a1$, the sensitivity of money demand to income, and to interest rate. In summary, the fiscal stimulus will be more efficient that the investment is very sensitive to changes in interest rates (resulting from behavioral changes in money demand by households as a result of initial increased income, ΔY). Its effectiveness will be maximum in the elementary Keynesian model, where the investment is a purely exogenous variable, $I = I_0$ ($a_1 = 0$), in which case the crowding-out effect (anti-Keynesian effect) is nil.

[19] In the Algerian case, the increase in public spending is not financed through the use of public debt. However, debits made on this occasion on the RSF, which is a sovereign fund to cover part of the needs of future generations makes the two situations somewhat equivalent. This corresponds, in an overlapping generations model, to a situation where future generations will have to pay the debts of the current generation. Robert Barro (1974, p.1102).

[20] Mundell and Fleming keep most of the IS-LM model assumptions. Additional assumptions related to the liberalization of foreign trade, are usually adopted; we note in particular that relating to the perfect substitutability between domestic and foreign securities, which implies the parity relationship of interest rate not covered in exchange. We also retain that the purchasing power parity is not checked; thus, if E is the exchange rate quoted on the uncertain and P^* the general level of foreign prices, then $EP^* \neq P$.

4.1.1. Supply of money

In an opened economy, the domestic money supply is affected by international payments that give rise to currency movements whose reserves appear on the assets side of the Central Bank, and on the debit side of the aggregate banking system, making them a counterpart of the money supply. The money supply behavior can be defined by the following equation:

$$M^S = \bar{M} + M^R$$

where $\bar{M}$ is the stock of money issued in exchange of credits to the economy and M^R is the stock of money issued in exchange of foreign currency purchases. If we note M_0^R the stock of money corresponding to foreign exchange purchases held at the beginning of the period and ΔR variations in foreign reserves during the period, then: $M^R = M_0^R + \Delta R$. We assume for simplicity that, $M_0^R = 0$ et $M^S = \bar{M}$.

It should be noted that under flexible exchange rates, the foreign payments equilibrium is achieved by variations in the exchange rate, which has the effect of exempting the Central Bank to intervene on the foreign exchange market through the use of its foreign exchange reserves. In a fixed exchange system, variations in reserves are not nil, and affect the supply of money.

4.1.2. The current account

Its two components are exports, *X*, and imports of goods and services, *Z*. These quantities depend positively on the size of the market to which they are addressed, and negatively on the relative price, here the real exchange rate *Q*, of the domestic and foreign goods respectively:

$$\partial X/\partial \dot{Y} > 0, \quad \partial X/\partial(1/Q) < 0$$

with, $\partial Z/\partial Y > 0, \quad \partial Z/\partial Y^* < 0,$ for the imports and, $\partial X/\partial Y^* > 0, \quad \partial X/\partial(1/Q) < 0,$ for the exports. For imports, the competitiveness indicator is the ratio of foreign prices, expressed in domestic currency, *EP**, by domestic price, *P*, that is the real exchange rate *Q*.

For the exports, this term of competitiveness is given by the ratio of domestic prices by foreign prices expressed in dinars, or the inverse of the real exchange rate (1 / *Q*).

The foreign trade balance can be described by the following linear function:

$$BC = xY^* - zY + \rho Q$$

where *Y** and *Y* designate foreign and domestic incomes, respectively, and *Q = EP*/P* is the real exchange rate, *E* the nominal exchange rate, being listed on the uncertain. *x, z* and ρ are positive parameters respectively measuring the sensitivity of exports to foreign income, the propensity to import of the domestic agents and the sensitivity to the real exchange rate of the foreign trade balance. The parameter ρ being positive, we assume, therefore, that the Marshall-Lerner condition or the theorem of critical elasticities is verified[21].

4.1.3. The capital balance

We consider that the flows of international funds depend on the differential of nominal interest rates between countries and the anticipation of the exchange rate depreciation. On the assumption that prices are fixed, it follows that inflation expectations equal zero, which implies that real and nominal interest rates coincide. Net capital inflows, denoted *K*, constitutes an increasing function of the difference $r - r^* - \dot{E}^a$, where $\dot{E}^a$ is the expected exchange rate variation, $(E^a - E)/E$. Then, we can write:

$$K = k \, (r - r^* - \dot{E}^a)$$

with $k \geq 0$. So, as long as $r \neq r^* - \dot{E}^a$, capital moves from one country to another because of the assumption of assets perfect substitutability. If there is any restriction to the capital mobility, capital flows will cease once

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[21] Marschall-Lerner's Theorem, named after the two economists Alfred Marshall and Abba Lerner (1952, p.11) which were the first to highlight it, is a condition that tells us under what circumstances a devaluation has a positive effect on the trade balance (Rose, 1991, p.309).

equilibrium is reached, that is, when $r = r^* - \dot{E}^a$. However, if capital mobility is not perfect, a difference of rate, even important, may then remain.

4.2. The equilibrium conditions

4.2.1. The equilibrium on market of goods

The equilibrium condition employment-resource is now written as follows:

$Y = C + I + G + X - QZ = C + I + G + BC$

By using the function describing the foreign trade balance of the previous section, we can write the equilibrium condition of the market for goods and services in the following form:

$Y = cY - a_1 r + G + xY^* - zY + \rho Q$

Thus, the *IS* equation curve becomes:

$$Y = \frac{C + xY^* + \rho Q - a_1 r}{(1 - c + z)} \qquad (IS)$$

Here, the *IS* curve is identical to that described by the equilibrium equation of a closed economy, except that unlike the latter, it includes the trade surplus as a component of the demand. The Marshall-Lerner condition being assumed to be verified, a depreciation ($\Delta E > 0$) shifts the *IS* curve to the right because, by improving the trade balance, it increases the revenue for a given interest rates.

4.2.2. The equilibrium on monetary market

The equilibrium condition on the monetary market is given by the equality between demand and supply of real money, *i.e*:

$\frac{M^S}{P} = \frac{M^D}{P}$, that is $m^s = m^d$

Lower-case letters denote real balances. This equilibrium condition implies:

$$\bar{m} + m^r = \ell_1 Y - \ell_2 r \Longleftrightarrow Y = \frac{1}{\ell_1}(\bar{m} + m^r + \ell_2 r) \qquad (LM)$$

This equation defines the *LM* curve in the plane (Y, r). This is an increasing curve that an increase in foreign exchange reserves or in $\bar{m}$ moves to the right.

4.2.3. The aggregate balance equilibrium and the balance of payments

The equilibrium on the foreign exchange market is a situation where the balance of payments is cleared. This is done either by movements in the exchange rate in a flexible exchange regime, or by variations in foreign exchange reserves in a fixed exchange rate regime[22].

Assuming that income transfers are not taken into account, and where there is no distinction between capital movements in the long and short term, the net aggregate balance, (noted *BG*) corresponds to the sum of the trade balance and net capital inflows:

$BG = BC + K$

The (*BG*) curve is refered in the following to the set of pairs (Y, r) that, for a given level of the real exchange rate, ensure equilibrium in the aggregate balance. For the functions outlined above, it gives the equation of the (*BG*) curve below:

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[22] The equilibrium in a position of fixed exchange rates is characterized by the existence of two different situations: a short-term situation where the aggregate balance is not in equilibrium, the balance being offset by changes in reserves to equilibrate the balance of payments, and a long-term situation where the aggregate balance is finally balanced thanks to past variations in foreign exchange reserves, while the money supply has completed a full adjustment. The latter situation corresponds to an equilibrium obtained for a variation of reserves equal to zero. To display this distinction, it is necessary to consider both the amount of the balance of payments (BOP) and that of the aggregate balance (BG). While in a regime of flexible exchange rates, these two balances merge, in the fixed exchange rate regime, they are not equal until the money supply is fully adjusted to restore balance to the aggregate balance.

$$xY^* - zY + \rho Q + k(r - r^* - \dot{E}^a = 0$$
$$\Leftrightarrow Y = \frac{1}{z}\left(xY^* + \rho Q - k\left(r^* + \dot{E}^a\right) + kr\right) \qquad (BG)$$

The balance of payments surplus or deficit, *BP*, is defined by:

$$BP = BG - \Delta R = BC + K - \frac{\Delta R}{P}$$

Remind that the (*BG*) curve corresponds to the exchange market equilibrium calculated under the assumption that variations in reserves are nil. According to the details noted in footnotes below, this curve describes the external long-term equilibrium. Short-term equilibrium on the exchange market is defined by the balance of payments equilibrium through removing the constraint of the nullity of the exchange reserves variations.

The balance of payments equation will be of the form:

$$xY^* - zY + \rho Q + k\left(r - r^* - \dot{E}^a\right) = \frac{\Delta R}{P}$$
$$\Leftrightarrow Y = \frac{1}{z}\left(xY^* + \rho Q - k\left(r^* + \dot{E}^a\right) + kr - \frac{\Delta R}{P}\right) \qquad (BP)$$

The (*BP*) equation indicates, for each level of the real exchange rate and variations in foreign exchange reserves, the pair (*Y, r*) that corresponds to the equilibrium on the foreign exchange market. The curve it traces is an increasing straight line in the plane (*Y, R*) and parallel to the (*BG*) curve. It is located above or below this one according to whether reserves variations are positive or negative[23].

Since the straight line *BG* is linking all the couples (*Y, r*) compatible with long term external equilibrium for a given level of the real exchange rate, any point outside this curve is either a deficit (right of *BG*) or surplus (left of *BG*) in the aggregate balance. Also, the parameters Y^* and r^*, which are in the equations of the curves *BG* and *BP*, imply that a decrease in the foreign interest rate, or an increase in foreign income, leads *BG* and *BP* to move to the right.

4.3. Macroeconomic equilibrium in a fixed exchange regime

We believe that Algeria external economic relations are managed in a way that corresponds more with a fixed exchange rate regime. Over the past decade, the balance of payments recorded surpluses, sometimes very important, without leading the exchange rate of the Dinar to undergo changes that match up these surpluses. It is rather the changes in foreign exchange reserves, which is the main instrument in a fixed exchange regime that served as the main lever of the exchange rate policy leaded by the Bank of Algeria to defend the Dinar's parity.

Thereby, when a money supply deficit occurs in return for an external surplus, the central bank must sell domestic money by buying foreign currency to avoid currency overvaluation; its foreign exchange reserves increase.

It is foreign exchange reserves variations that allow the adjustment. M^R becomes endogenous and varies in accordance with the evolution of the foreign trade situation. The macroeconomic equilibrium in a fixed exchange rate regime is defined by a system of three equations, *IS*, *LM* and *BG* or *BP*, with three unknowns, national income, *Y*, the interest rate, *r*, and the currency issued in return for variations in exchange reserves, M^R.

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[23] The slope of the curve BG, and thus that of BP, equals. It depends on the parameter *k*, which measures the degree of capital mobility. For a perfect mobility of capital, corresponding to the case where $k \rightarrow \infty$, the slope tends to 0, and straight lines BG and BP are horizontals in the plane (Y, r). It is also verified that in this case, the equilibrium of the balance of payments implies because the interest rate is now fixed at the level prevailing in the rest of the world.

4.3.1. Short term equilibrium

The short-run equilibrium is a situation where the Central Bank must intervene to reach the balance of payments equilibrium, *i.e.* the aggregate balance is not at equilibrium (Artus, 2003, p.37).

According to the equation of the straight line *BP*, we deduce the expression of reserves variations in function of income and domestic interest rates:

$$m^r = xY^* - zY + \rho Q + k\,(r - r^*)$$

that can be used in the *LM* curve to express *r* and *Y* according to exogenous variables only:

$$r = \frac{(\ell_1 + z)Y - \bar{m} - (xY^* + \rho Q - kr^*)}{k + \ell_2}$$

It is thus possible to derive a system of two equations with two unknowns by using the equation of the *IS* curve:

$$\begin{cases} r = \dfrac{G + xY^* + \rho Q - Y(1 - C + Z)}{a_1} \\[2mm] r = \dfrac{(\ell_1 + z)Y - \bar{m} - (xY^* + \rho Q - kr^*)}{k + \ell_2} \end{cases}$$

$$\begin{cases} Y_E = \dfrac{G + \frac{a_1}{k+\ell_2}(\bar{m} - kr^*) + (1 + \frac{a_1}{k+\ell_2})(xY^* + \rho Q)}{1 - c + z + \frac{a_1(\ell_1 + z)}{k+\ell_2}} \\[4mm] r_E = \dfrac{G + \frac{(1-c+z)}{\ell_1 + z}(\bar{m} - kr^*) + \frac{(\ell_1 - (1-c))}{\ell_1 + z}(xY^* + \rho Q)}{(1 - c + z)\frac{(k+\ell_2)}{\ell_1 + z} + a_1} \end{cases}$$

Changes in reserves that ensure the exchange rate immovability are finally deduced from the equilibrium values thus obtained:

$$m^r = xY^* - zY_E + \rho Q + k\,(r_E - r^*)$$

4.3.2. Long-term equilibrium

The long-run equilibrium is a situation where the surplus or deficit of the aggregate balance is nil and the foreign exchange reserves remain constant. The adjustment of the money supply is accomplished, complete, and ensures to reach this long-term equilibrium. The system to be solved to determine this equilibrium is:

$$\begin{cases} r = \dfrac{G + xY^* + \rho Q - Y(1 - c + z)}{a_1} & (IS) \\[3mm] r = \dfrac{\ell_1 Y - \bar{m} - m^r}{\ell_2} & (LM) \\[3mm] 0 = xY^* - zY + \rho Q + k(r - r^*) & (BG) \end{cases}$$

IS and *BG* curves allow to determine r_E and Y_E, and we deduce m^r from the *LM* curve equation. The equilibrium income is finally:

$$Y_E = \frac{G + \frac{k + a_1}{k}(xY^* + \rho Q) - a_1 r^*}{1 - c + z + 1 - c + z + \frac{a_1 z}{k}}$$

It is now possible to examine the demand stimulus policy effectiveness that has been pursued since 2004 in the light of short term and long-term expressions thus defined. According to the multipliers expression obtained from the expressions of short and long-term equilibrium revenues, it appears that the stimulus strategy by using an expansionary fiscal policy has an overall positive effect on income. This, however, depends on the degree of capital mobility. If capital is not very mobile, that is to say where $k < z\,\ell_2/\ell_1$, it is the short-term effect that prevails. To understand it, we must examine the underlying economic mechanisms (Bec, 2000, p.67).

An increase in public spending, shown in the graph below, shifts the *IS* curve to the right, and causes an increase in income and interest rate similar to those that occur in a closed economy.

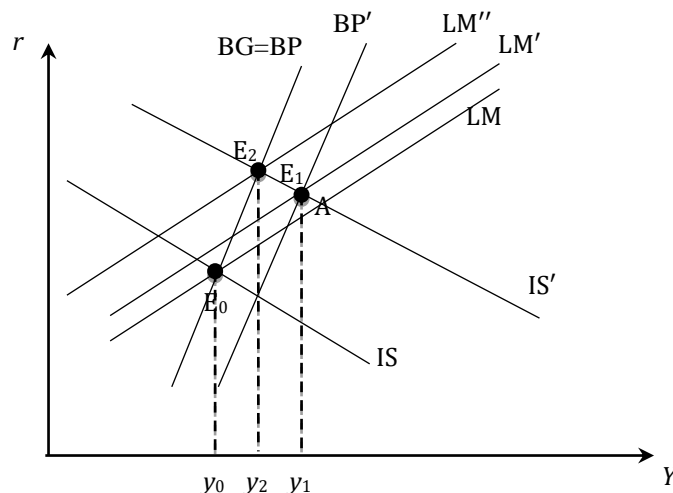The internal equilibrium point, *A*, can be either a deficit or a surplus in the aggregate balance.

Figure 3- The effectiveness of fiscal policy in fixed exchange
and low capital mobility

Indeed, the increase in income leads to increased imports, which tends to degrade the foreign trade balance and hence the one of the aggregate balance. However, the increase of the interest rate encourages foreign capital inflows, which improves the aggregate balance. Here we are, as in a flexible exchange rate regime, in front of two contradictory effects on the external balance.

In case where capital is very mobile, the first effect dominates and fiscal policy generates an external deficit (point *A*). Facing the excess supply of domestic money, the central bank has to fight against the depreciation trend by buying domestic money against foreign currencies, thus reducing its foreign reserves. The latter effect decreases then the money supply leading to an increase in the interest rate resulting in a strengthening of the crowding out effect.

In the short-term equilibrium, E_1, $B^{\acute{P}}$ is at the right of *BP* because of negative changes in foreign reserves and $L^{\acute{M}}$ at the left of *LM* due to the corresponding decrease in the money supply. Once the monetary adjustment completed, *i.e.* when the aggregate balance is in equilibrium, the economy is at the point of long-term equilibrium E_2, where income is lesser than the short-term one ($Y_2 \,\square\, Y_1$). Here, the fiscal policy has a limited efficiency compared to a closed economy (Beaud, 1983, p.123).

A. Benassy-Quéré (2012, p.156) who worked on the subject, but using arguments that refer more to the global economic crisis in 2007-2009, reaches the same result.

This pattern, which matches a situation of fixed exchange rates and low capital mobility, indicates that an expansionary fiscal policy has the effect of increasing national income and encouraging imports thus creating, in the first instance, an excess of supply of domestic money because that capital is very mobile. At equilibrium, in a second stage, when the monetary adjustment is complete, the long-term impact is lesser than the short term one (Prest, 1968, p.11).

This theoretical configuration is a grid of analysis simple but convenient to capture some overall characters (David Romer, 2000, p.159).

With reference to the Algerian economy, some of its features make the results of this analysis even more pronounced. We refer in particular to the existence of a very strict exchange control that leaves the domestic agents with any possibility of capital mobility. The rent nature of the Algerian economy and the inelasticity of its productive apparatus makes the probability of balance of payments deficits more than likely in case of sharp decline in oil prices. All this is that after the money supply adjustment, at the long-run equilibrium E_2, income level returns almost to its original level ($y_0 \square y_1 \approx y_2$); the point E_2 being vertically or almost of E_0. In the long term, fiscal policy has only limited effectiveness.

It is clear that things went according to the predictions of the chosen theoretical model. The keynesian theory in open economy is, therefore, a good scientific framework to predict the fate of the policy that has been implemented in Algeria over a relatively long period, and mobilized very considerable amounts. It also highlights the main inadequacy in the reasoning behind this strategy (Blanchard, 2000, p.1398). Indeed, the policy implemented, inspired by Keynesian economics, corresponds to an underemployment equilibrium. However, the situation of the Algerian economy never fit with this theoretical scheme. The algerian foreign payments crisis from 1986 to 2000, created a situation of chronic underinvestment. Even though the country lagged behind in terms of public infrastructure and facilities, it was not the public spending policy alone that could adress the problem of deep economic stagnation that the country had been struggling with for so long (Cnes, 2002-2005, p.21). It seems that political considerations have tipped the scales in favor of this controversial choice[24]. As Avinash Dixit says (1996, p.89): « when the reality of most countries' policies is so blatantly contrary to all the normative prescriptions of the economist that there is no way to understand it except by delving into the politics ».

5. Conclusion

To conclude this article, we can say that the strategy that consisted during the period 2001-2014 to use the development of infrastructures and public facilities as a main tool to restore global economic growth, has not been inspired by economic common sense. Economic theory anticipates it easily. Certainly, the country was lagging far in this area. Dense and modern infrastructures and public facilities are a major factor of the global productivity of any economy. However, these public investment plans, based upon the development of basic infrastructures, have been developed and implemented in a very unfavorable institutional and economic context that considerably limited their impact. These equipment programs were necessary but not sufficient; reforms were to be implemented previously in order to modernize the institutional framework so that its governance and arbitration mechanisms offer microeconomic agents the ability to act and interact in ways that maximize their utility but with less possible opportunities to do so at the expense of the public good. The senior government officials have decided otherwise, and used instead public spending programs as political and economic argument to avoid initiating and completing these reforms.

Thus, a brief review of the budget acts that marked this period shows that the primary motivation of algerian decision makers was determined, fundamentally, by constraints linked to preservation of national security, subsidies and social transfers. In addition, the obsession of political power to keep a tight control over the economy, for fear that wealth creation spiral out leads to the autonomy of the economy and the society from the supervision of the State, did not leave much room for a supply policy likely to put the country on the path of self-sustained economic growth.

When the oil counter-shock of 2014 came about, it found the Algerian economy totally disarmed to face it. Five years later, in this 2019 spring, the shock wave of this economic crisis hits the political sphere hard and ends the rule of the caste that was meddling with the 2001-2014 economic policy.

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[24] The current of thought from the new political economy no longer consider, as before, the policy maker as a benevolent agent who only cares about the public welfare [(Laffont, 2000, p.124), (Pisani-Ferry, 2008, pp. 402-403), (Nordhaus, 1975, p. 182), (Buchanan, 1975, p.227), (Downs, 1957, p.167), (Alesina and Drazen, 1991, p.1179)].

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Explicit knowledge and tax revenue performance: The role of externalization process

Umale Okoh[1,•] , Philip Jehu[2,♦], Abubakar Abubakar[3,*]
[1] *Ph.D, Department of Accounting, Federal University of Kashere, Gombe State, Nigeria*
[2] *Ph.D, Department of Accounting, Federal University of Kashere, Gombe State, Nigeria*
[3] *Ph.D, Department of Accounting, Federal University of Kashere, Gombe State, Nigeria*

Abstract

One of the desires of developing countries is to improve tax revenue generation to reduce dependence on the developed countries for financial aid. Access to quality and timely tax knowledge by taxpayers can improve compliance and tax revenue generation. The purpose of this study is to explain the mechanisms that convert tacit to explicit knowledge for easy accessibility, improve compliance and tax revenue generation. Qualitative data through face-to-face interviews supported by documentary study were employed to study knowledge externalization and tax revenue performance. Twenty tax officers were interviewed face-to-face in a case study of Federal Inland Revenue Service (FIRS) Nigeria, and NVivo 10 qualitative software used to analysed the data. This study found that documentation of tacit knowledge and the design of training manual can externalize tacit knowledge in tax administration. Furthermore, explicit knowledge enhanced accessibility to knowledge, compliance and tax revenue generation. The study recommended documentation of tacit knowledge and training manual as a strategy to externalize tacit knowledge to improve access to knowledge, compliance, and tax revenue generation.

1. Introduction

The need to improve tax revenue generation in developing countries to reduce dependence on developed nations for financial assistance is critical. According to Musimenta (2020), developing nations are searching for strategies to improve tax revenue efficiency and generation to finance budgets without depending on unpredictable financial aid from the developed ones. The quest to improve tax revenue generation in developing countries resulted in several studies including Bird (2015), Umar et al. (2017), Olaoye and Atilola (2018), Ajala and Adegbie (2020), Musimenta (2020). Efforts aimed at improving tax revenue generation in developing countries have not yielded the desired result. However, studies showed that access to quality and timely tax knowledge by taxpayers can improve tax revenue generation (Bird, 2015; Rosdi et al., 2016; Semenova et al., 2017). Hence, there is a need to create and disseminate the desired knowledge in tax administration to improve tax revenue generation.

One of the knowledge creation models that is widely used in literature and practice is socialization, externalization, combination and internalization (SECI) by Nonaka and Takeuchi (1995). According to Rice and Rice (2005), Grant and Grant (2008) and Easa (2012), SECI is widely accepted, especially among management practitioners as a result of its clear description and insightful reasoning. SECI model explained that knowledge creation is a continuous process of interaction of tacit and explicit knowledge through four modes of socialization, externalization, combination and internalization (Nonaka & Takeuchi, 1995). Furthermore,

• **E-mail:** okohumale@yahoo.com   & **ORCID:** https://orcid.org/0000-0001-5253-6489

♦ **E-mail:** jehuphilip@gmail.com & **ORCID:** https://orcid.org/0000-0003-4330-6424

* **E-mail:** abubakarabubakar2020@gmail.com

externalization component of SECI model emphasized on transformation or conversion of tacit to explicit knowledge that is easily understandable, transferred, disseminated and communicated (Nonaka & Takeuchi, 1995; Masrek & Zainol, 2015; Cárcel-Carrasco et al., 2020; Rusland et al., 2020). Externalization converts tacit knowledge into a readable form such as a report, procedure, article, description and manual. There are several studies on SECI model which include Nonaka and Takeuchi (1995), Nonaka and Toyama (2003), Nonaka and Toyama (2005), Bandera et al. (2017), Chatterjee et al. (2018), Umale et al. (2019), Guo et al. (2020). However, studies that focus on externalization as a component of SECI model in tax administration are limited. Moreover, there is a paucity of studies on the mechanisms that can externalize knowledge in tax administration. Also, the study on the link between explicit knowledge and tax revenue generation is limited. Hence, this study filled the research gap as it explored the mechanisms of externalization in tax administration. This study aimed to address two research questions as follows: (i) How can tacit knowledge be externalized in tax administration? (ii) How can explicit tax knowledge improve tax revenue generation? Following the research questions, the objectives of this study are: (i) To explain the externalization mechanisms in tax administration. (ii) To explain how explicit tax knowledge can improve tax revenue generation. This study is structure into five sections which are introduction, literature review, research methodology, findings and discussion, and conclusion. Next section dwell on literature review.

2. Literature Review

This section reviewed literature on SECI model and explicit knowledge. Literature that focus on externalization as a component of SECI model is limited. Therefore, this study reviewed literature on SECI model and explicit knowledge. This section consists of two sub-sections which are SECI model, and explicit knowledge. Next section explained SECI model.

2.1. Socialization, Externalization, Combination, and Internalization (SECI) Model

According to Nonaka and Takeuchi (1995), knowledge creation is a continuous process of interaction of tacit and explicit knowledge through four modes of socialization, externalization, combination, and internalization. Nonaka and Takeuchi (1995) explained that socialization transfer or disseminates tacit knowledge between knowledge workers through social interaction. Externalization converts tacit knowledge into readable, understandable, communicatory, and accessible forms for easy application. Combination combines different elements of explicit knowledge to form another explicit knowledge. Internalization transforms explicit into tacit knowledge through access and reuse of explicit knowledge. The process of knowledge creation is continuous in the form of a spiral which increases in radius depicting the diffusion of knowledge in an organization (Nonaka & Takeuchi, 1995; Nonaka et al., 2000; Nonaka & Toyama, 2003). SECI model is conceptualized as an "engine of knowledge creation" (Nonaka & Takeuchi, 1995; Easa, 2012). SECI model employs an interactive approach to knowledge management (KM) which entails knowledge creation, storage, retrieval, and application (Grant & Grant, 2008; Mikic et al., 2009). It combined people, processes, and information technology (IT) to create knowledge (Nonaka & Konno, 1998; Easa, 2012).

In addition, Nonaka and Konno (1998) employed the concept of "ba" to extend SECI model. "Ba" means place or environment in Japan language. According to Nonaka and Konno (1998), "ba" is critical to knowledge creation in an organization. Four types of "basho" exist in the four modes of the knowledge creation process. The four "basho" include originating "ba" in socialization, interacting "ba" in externalization, cyber "ba" in combination, and exercising "ba" in internalization. "Basho" is the plural of "ba". Nonaka and Toyama (2003) revisited SECI model of knowledge creation and conceptualized knowledge creation as a dialectical process that synthesized diverse contradictions through active interactions between individuals, organizations, and the environment. Thus, knowledge is created through dialectic thinking and acting that synthesizes and transcends the contradictions in the knowledge creation process and organization. In knowledge creation, opposing ideologies, concepts, and beliefs are integrated through active dialogue and practice (Nonaka & Toyama, 2003). This enables individuals, groups, and organizations to transcend old boundaries to new ones as new knowledge is acquired. The process creates and expands knowledge via the process of conversion of tacit and explicit knowledge. Thus, an organization is a dialectic being that synthesizes diverse contradictions via SECI and "ba".

There are several studies on SECI model in other organizations. For example, Girard and Mclntyre (2010) described KM implementation in the security and defense sector based on SECI model. Easa (2012) who studies KM implementation in the banking sector employed SECI model as a framework. Masrek and Zainol (2015) used SECI model to investigate the link between knowledge conversion abilities and performance in academics. Wan Yusof et al. (2018) investigated tacit knowledge of military observers that can be used in decision-making in situational awareness during peace-keeping operations based on SECI model. Rusland et al. (2020) employed SECI model to evaluate the extent of the knowledge creation process in Navy fleet personnel. Guo et al. (2020) employed SECI model to study how multinational enterprises overcome barriers to transferring individual and organizational tacit knowledge globally. Other studies on SECI model in other organizations include Cabera

(2008) and Kamtsiou *et al.* (2006) in education and training organizations, Rodrigues *et al.* (2006) in IT sector, Eliufoo (2008) in the construction sector, Tsai and Li (2007), and Li *et al.* (2009) in the manufacturing sector, Rice and Rice (2005) in multi-organizational projects, Grant and Grant (2008) in financial institutions.

This study focuses on the externalization component of SECI in tax administration. Externalization is the conversion or transformation of tacit to explicit knowledge. Externalization makes tacit knowledge understandable and easy to communicate. Externalization is a key to knowledge creation as it uses tacit knowledge to create new explicit concepts (Nonaka & Toyama, 2003). Furthermore, externalization crystalizes tacit knowledge to form explicit knowledge like written documents, concepts, and images. According to Nonaka and Konno (1998), interacting "ba" exist in externalization. Based on literature review, there is a paucity of research on mechanisms that externalized explicit knowledge in tax administration. Hence, this study filled the research gap as it explores the mechanisms that externalized explicit knowledge in tax administration. Next sub-section review literature on explicit knowledge.

2.2. Explicit Knowledge

Explicit knowledge is defined as codified and formalized knowledge such as procedures, rules, and manual that can be easily disseminated (Nonaka & Takeuchi, 1995; Boadu et al., 2018). It is also called known-what which is possessed by an organization and individual (Boadu et al., 2018). According to Rathi et al. (2016), explicit knowledge includes instructions, guides, descriptions, and records either manually or electronically. McIver et al. (2016) described explicit knowledge as coded knowledge that can be transferred in an organized way that can be easily understood. It is shared in an organized and prescribed way by organizations. Explicit knowledge is easily created, documented, and transferred (Lombardi, 2019; Asbari et al., 2019), recognize and retrieve (Boadu et al., 2018), copied and learned by individuals and organizations (Ibidunni & Omankhanlen, 2021). Explicit knowledge is readily available in coded form, diagrams, audios, text, videos, drawings, databases, and pictures and can be shared, retrieved, and captured as a result of its properties, characteristics, and nature (Asian Productivity Organization, 2013). Explicit knowledge is always available and can be retrieved anytime needed. Examples of explicit knowledge in tax administration are manual or database of procedure or description of tax audit, taxpayers' registration, tax collection, and computation of tax assessment. Table 2.1 summarized the characteristics of explicit knowledge.

Table 1. Characteristics of explicit knowledge

Explicit knowledge	S/N	Characteristics
	1	Easy to articulate, document and share
	2	Externalized
	3	Context independent
	4	Ability to teach and train
	5	Instructions, rules, shapes, plans, codes, and presentations
	6	Ability to disseminate, reproduces, access, and reapply throughout an organization
	7	Ability to organize, systematize, and translate a vision into a mission statement and operational guidelines
	8	Transfer of knowledge via products, services, and documented processes

Source: Authors

3. Research Methodology

In this study, qualitative principles were employed to study how knowledge can be externalized to improve tax revenue performance. The qualitative principle is suitable in research when it provides an answer to "how" and "why" research questions (Yin, 2009). Therefore, the qualitative approach is suitable as this study provided an answer to how tacit knowledge can be externalized in tax administration, and how explicit tax knowledge can improve tax revenue generation. A single case study of the Federal Inland Revenue Service (FIRS), Abuja in

Nigeria was employed to study knowledge externalization in tax administration. Gerring (2007) and Mansor (2011) said when a case study represents a "critical case" to test the situation under study, it is appropriate to employ. Therefore, FIRS Abuja can represent a "critical case" in testing how externalization creates explicit knowledge in tax administration because knowledge externalization takes place in FIRS. In addition, tax revenue generation in FIRS is low (OECD, 2019); hence, justify its selection as a single case study to represent tax administration in developing countries.

Research ethics is critical to this study; therefore, the study followed ethical consideration by applying to the chairman of FIRS for data collection which was approved. A copy of the interview protocol that was used for data collection was attached to the application. After the application for data collection was approved, the head of the unit (planning, research & statistics) selected tax administrators to participate in the interview. The participants were selected based on their experience and knowledge of the subject matter from different cadres and the five groups in FIRS. Twenty (20) tax administrators were interviewed face-to-face in their offices in FIRS. However, 17 tax administrators responded to the interview questions on how knowledge can be externalized in tax administration. Three (3) participants did not comment on the interview questions concerning externalization of knowledge in tax administration because of limited knowledge of the subject matter.

Participants in the interview were selected from corporate development, domestic taxes, modernization, compliance, and enforcement groups. A sample size of 20 tax administrators was interviewed in FIRS. This study follows Bernard (2013) who said a sample size between 10 and 20 is a saturation level for a case study interview. Data were collected face-to-face via the instrument of semi-structured and open-ended interview questions. Data were collected within six months. Prior to the interview session, the interview protocols were sent to participants for a proper understanding of the objective of the study. In addition, the aims of the study were discussed with participants before the interview session. Participants were also assured that information provided are confidential. The interviews were conducted in participants' offices between 30 to 40 minutes subject to the responses of the interviewees. Sub-themes for externalization emerged in the process of interview and include documentation and training manual. In a qualitative study, new themes can emerge in the research process because it encompasses understanding an issue or problem from the participants' perspective to provide an answer to the research question and objective (Creswell, 2007).

The interviews were recorded with a Smart voice recorder. In addition, notes were taken with a pen to complement the recorded interviews. To ensure validity and reliability, data collected via interviews were presented to the interviewees for conformity of their statements with the transcribed interview data. Upon presentation, the interviewees affirmed conformity of their statements with the transcribed interview data. Moreover, the documentary study of operation and training manual were employed to validate data sourced from the interview. In this study, data triangulation was employed for analysis. Thematic analysis was employed and the process include transcription of the interview, data coding, theme selection, and identification of connection. Also, NVivo version 10 qualitative software was used for data administration. In connection with the research objective and responses from the interviewees, sub-themes that were identified include documentation and a training manual. These sub-themes can externalize tax knowledge to improve tax revenue performance. The next section dwells on finding and discussion.

4. Findings and Discussion

Findings and discussions on data collected via face-to-face interviews are presented in this section. The data from interviews were supported by a documentary study. Documents employed include operation and training manual. Twenty (20) tax administrators participated in the face-to-face interview at FIRS. Twelve (12) males and eight (8) females participated in the interview. The age of the participants in the interview consists of 31-40 years (5 participants), 41-50 years (10 participants), and 51 years and above (5 participants). Furthermore, the qualification of participants includes 13 (BSc/HND) and 7 (MSc/MBA). The 20 participants were distributed among the five groups in FIRS as follows: 4 (corporate development), 4 (domestic taxes), 4 (compliance), 4 (modernization), and 4 (enforcement). All participants in the interview were the permanent staff. In terms of working experience, 6 participants have worked between 6 to 10 years and 14 have worked for 10 years and above in FIRS. Ranks of the participants consist of director (1), deputy director (2), assistant director (1), senior manager (4), manager (5), assistant manager (2), tax officer I (2), and tax officer II (3). Section 4.1 presented the findings and section 4.2 is on the discussion of the findings.

4.1. Findings

This section presented findings from face-to-face interviews on the externalization of knowledge in tax administration. Externalisation is the conversion or transformation of tacit to explicit knowledge. Externalization makes tacit knowledge understandable, communicatory, and readable forms such as a report, procedure, article, description, and manual. Tacit knowledge is externalized by documentation which makes it accessible to other people. Furthermore, externalization occurs by designing a training manual. Designing of manual for training

makes tacit knowledge explicit and accessible to other people. Thus, when a professional/expert-designed training manual, his/her professional/expert tacit knowledge becomes explicit and accessible to the trainees and others. Figure 1 presented the externalization theme and its sub-themes for this research. Furthermore, Figure 2 presented a summary of participants' responses on the externalization process in terms of documentation, and Figure 3 on training manual design in tax administration. The responses presented in Figures 2 and 3 are based on 17 participants. The remaining 3 participants did not respond as a result of insufficient knowledge of the subject matter. The next section discussed documentation as a mechanism for externalization of knowledge in tax administration.
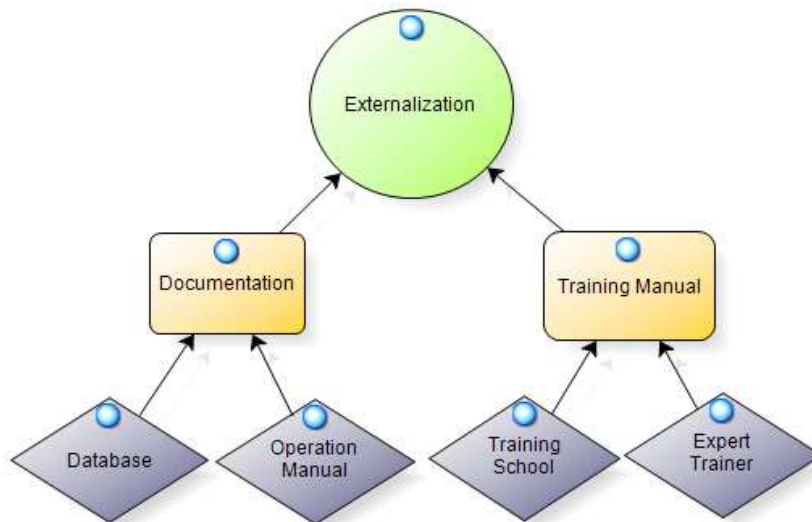

Figure 1. Externalization and its' Sub-themes for Explicit Knowledge Creation in Tax Administration

Documentation

Externalization of knowledge in tax administration occurs via documentation of tacit knowledge. According to participants, documentation of knowledge improves staff's knowledge, facilitates the work process, and improves the quality and speed of information/knowledge provided to taxpayers. Furthermore, the quality and timely provision of information/knowledge to taxpayers improves their compliance to pay taxes. Figure 2 demonstrated responses about the externalization of knowledge through documentation in tax administration.
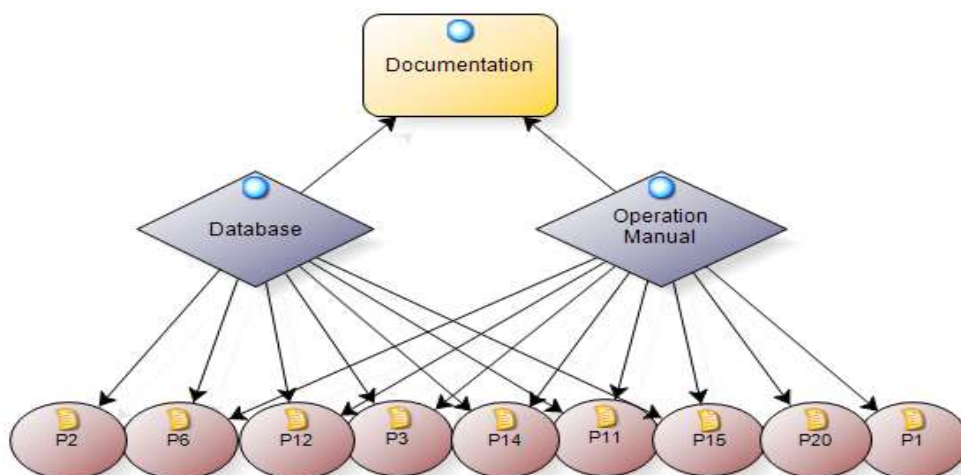

Figure 2. Documentation as a Mechanism for Knowledge Externalization in Tax Administration

Source: NVivo Analysis

Note: "P" represents the participant

Statements of participants with respect to knowledge externalization through documentation are presented below.

"In tax administration, people's implicit knowledge is externalized by storing it in a database. As problems are fixed, people are allowed to key into such solutions so that others can see how they are fixed. Moreover, there is an operation manual in all departments which is updated regularly with new knowledge. Staff's experiences are documented in minutes of meetings. Also, training reports from persons who attend training are documented. All documented knowledge serves as the source of references" (Participant 12, Manager).

"Tacit knowledge of staff in the department and its units are captured and documented in the manual. Every department has a process manual which we called the operation manual. The operation manual is reviewed and updated regularly for effective service delivery to taxpayers which improves their compliance to pay taxes. Also, every new employee is issued an operation manual so that he/she will be able to know what is expected of him/her. This improves staff knowledge, administrative processes, and tax compliance" (Participant 1, Deputy Director).

"Whatever is done in tax administration is documented to improve staff's knowledge, work quality, and speed. Tax administration documents staff's experiences during meetings. Communiqué at the end of meetings, conferences, or workshops is documented. Documentation of experience is very critical because it externalized tacit knowledge which is employed to update operation manuals of various departments in tax administration. This is because if such knowledge is documented, tax organization can use it as the source of reference to make corrections where necessary" (Participant 11, Assistant Manager).

"We have a database that captures staff's knowledge. In FIRS, there is a research unit that is responsible for making discoveries and innovations available explicitly for better performance of tax administration. Every department in FIRS has an operation manual which is updated regularly based on reports from training and innovations. Every training and conference attended are properly documented. The documentation is meant for future references. The documents improve how things are done in tax administration. Also, all explicit knowledge in tax administration can be easily disseminated or transferred to taxpayers which improves compliance and tax revenue performance" (Participant 2, Assistant Director).

"Tax administrators' implicit knowledge is documented in the database. For example, operation manuals in all departments at FIRS are based on externalized expert knowledge of tax officers. Documentation of staff's experience enhances knowledge of other staff and administrative processes. In addition, externalized tax knowledge enhances tax revenue collection as more taxpayers tend to pay tax when tax information/knowledge is provided to them" (Participant 15, Manager).

"Knowledge acquired from training is reported and filed by the human capital department. The human capital department has training records for individual staff, but I do not know if they document other information. What I know is that we have operation manual printed for all departments which is a synthesis of staff's knowledge" (Participant 20, Senior Manager).

"Database of tax knowledge is based on tacit knowledge of tax administrators and taxpayers that are converted to explicit knowledge. Manual for operation in each department is documented from the tacit knowledge of tax officers. The knowledge that is divulged during training or meetings that can improve the performance of tax administration is documented for reference purposes. Reports and decisions taken in meetings are stored and used for taxpayers' education. Taxpayers' education increases tax revenue collection" (Participant 3, Senior Manager).

"Tax officers' knowledge is captured in a database, and made available online for taxpayers and tax officers. Availability and accessibility of tax knowledge to tax officers and taxpayers improve work execution of tax officers and tax payment of taxpayers. Tacit knowledge is documented in the operation manual and updated regularly using the expert knowledge of the staff. Also, the experiences of experts are documented during meetings and training. Report explaining knowledge acquired in training is compulsory for all trainees for the purpose of knowledge externalization in FIRS. Such reports are published and documented for future reference. When such knowledge is documented, it becomes a source of reference" (Participant 14, Senior Manager).

"Database is employed to store taxpayer and tax administrators' implicit knowledge as manuals for operations. At board level, I know they do document experts' knowledge. Knowledge documentation does improve tax officers and taxpayers' knowledge, administration process and revenue performance" (Participant 6, Manager).

The responses above showed documentation of externalized tacit knowledge. Thus, documentation transformed tacit to explicit knowledge which makes it available for use by tax officers and taxpayers. Furthermore, the expressions demonstrated that explicit knowledge enhances taxpayers' access to tax knowledge, compliance, and

tax revenue. This is consistent with documentary evidence of operation manuals in FIRS. The next section explained the training manual as a mechanism for externalization.

Training Manual

Another activity that can externalize knowledge in tax administration is the training manual. Training manual converts expert/professional tacit knowledge of the designer of such manual to explicit knowledge for trainees and organizations. Hence, when a training manual is designed by an expert, the expert knowledge becomes explicit or externalized and individuals or organizations can easily acquire such knowledge. Furthermore, the training manuals are documented as sources of reference which improve staffs' knowledge, capability, work process, tax compliance, and revenue generation. A summary of the data collected with respect to training manual design is presented in Figure 3.
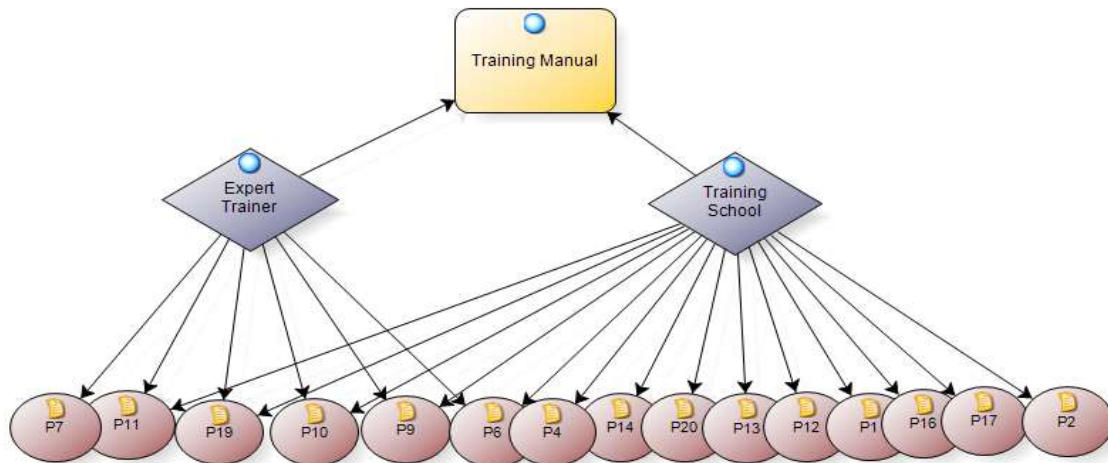

Figure 3. Training Manual as a Mechanism for Knowledge Externalization in Tax Administration

Statements of participants with respect to knowledge externalization through the training manual are presented below.

"Training manual externalizes tacit knowledge of trainers that design it. For example, in FIRS, training schools collaborate with the training department to design training programs. Tax administration benefits from a formal training program because it enables tax officers to access industries where experts are invited from different fields of taxation to explain how things are done. In such cases, experts design the training manuals which are documented for future references and improve tax administrators' knowledge. Furthermore, the training manuals are employed to improve the service delivered to taxpayers. This can improve compliance and tax revenue" (Participant 12, Manager).

"In tax administration, training improves knowledge in two dimensions. Firstly, training transfers the tacit knowledge of the trainer to the trainees directly. Secondly, the tacit knowledge of the trainer is transformed into explicit knowledge through the training manual. In FIRS, training school with the support of various departments in the service design training programs for internal training but training experts does for external training. The service benefits from staff training because all formal training is accompanied with training manuals and whatever is learned during the training is given back to FIRS by staff" (Participant 10, Deputy Director).

"Tacit can be converted to explicit knowledge through training manual design. It is the responsibility of the training unit or training school in tax administration to design a training manual. For instance, the FIRS training school in collaboration with the training unit designs a training manual and organizes internal training. However, for external training, manuals are designed by training experts who are given contracts to train staff" (Participant 11, Assistant Manager).

"In tax administration, expert skills and knowledge are acquired from training manual to improve work processes. This is because training manuals transform tacit to explicit knowledge. Also, the knowledge serves as a source of information for taxpayers. Training manuals that are documented, are employed for taxpayers' education to improve tax process, compliance, and revenue" (Participant 13, Senior Manager).

"Training manuals that are designed by expert trainers, training department and the school can convert implicit to explicit knowledge. Training department and school handle training programs in FIRS. Tax administration benefits from such training in respect to training manuals which improve productivity and taxpayers'

compliance to pay taxes. Knowledge is acquired from implicit knowledge of trainers and explicit knowledge of training manuals. Even if you have a Ph.D. in taxation and get employed, without training you cannot perform well. The skills, experiences, and knowledge staff acquired from formal training programs are deployed to achieve tax administration objectives such as taxpayers' education and improve service delivery" (Participant 16, Tax Officer II).

"One of the ways to externalize knowledge in tax administration is training manual design. Externalized knowledge via training manual improves knowledge of both tax officers and taxpayers, service delivery, tax compliance, and revenue generation. When staff has the right knowledge and experience, they will be able to discharge their duties effectively and thereby improve revenue generation" (Participant 2, Assistant Director).

"Training manual designed to facilitate training can transform tacit to explicit knowledge. Secondly, skills, experiences, and knowledge acquired from training assist staff in task execution to achieve tax administration objectives. Manuals from formal training programs are documented to improve the knowledge of tax officers and taxpayers. It is important to equip taxpayers with tax knowledge to enable them to comply easily" (Participant 20, Senior Manager).

"Training manual convert tacit knowledge of trainer into readable and accessible forms. Such knowledge can be employed for tax administrative work, and manuals for taxpayers to simplify their tax obligation for easy compliance. Also, training manuals from training are documented for future references to improve knowledge, service delivery and compliance to pay tax" (Participant 9, Director).

"Tax administration trains its staff and educates taxpayers. A training manual that is used for training externalized tacit knowledge of the trainer. Explicit knowledge in training manual is used by tax officers and taxpayers to improve tax administration and revenue generation. FIRS ensure both tax officers and taxpayers have access to explicit knowledge in training manual" (Participant 1, Deputy Director).

"Training programs are designed by tax administration's training school or external training experts. For internal training, the training school handled the design of its training manual while that of external training is handled by external expert trainers. The training manuals that are supplied during training are of great benefit to tax administration because expert knowledge of trainers is kept for future references" (Participant 6, Manager).

"Training manual designed by expert trainers who act as consultants change implicit to explicit knowledge. In the same vein, training schools in collaboration with the training department design a training manual for internal training. Through training manuals, staff knowledge can be improved for better service delivery and tax revenue collection" (Participant 7, Tax Officer I).

"Training school and expert trainers normally give training manual during training which is documented for future use. The manual improves knowledge. Tax administration and revenue performance are anchored on tax knowledge of both tax officers and taxpayers" (Participant 4, Manager).

"Training department and the school handled designing of training programs and manual internally while external training manuals are designed by experts that specialize in particular training. The training manual which converts tacit to explicit knowledge, enhance knowledge for better service delivery and performance in terms of revenue collection" (Participant 19, Manager).

"A source of explicit knowledge in tax administration is the training manual. Training manual covert tacit knowledge of trainers to explicit and stored for reference purpose. It enhances the capacity of tax administrators and adds value to the services rendered to taxpayers; therefore, enhance compliance" (Participant 17, Tax Officer II).

"Tacit is transformed to explicit knowledge through training manual and documented for future use. Training schools and expert trainers are responsible for designing training programs and manuals. The purpose of all training in tax administration is to learn new things to improve performance and tax revenue" (Participant 14, Senior Manager).

The expressions showed that training manuals externalized knowledge in tax administration. Also, acquired and stored knowledge as a result of training manual enhance services delivered to taxpayers, compliance, and revenue generation. Furthermore, the availability of tax knowledge to taxpayers through training manual improves compliance to pay taxes. Participants' expressions on the design of training manuals are in line with the documentary study of a training manual that was stored for reference purposes.

4.2. Discussion

Developing countries need to improve tax revenue generation to reduce dependence on developed countries for financial aid/assistance (Musimenta, 2020) and access to tax knowledge by taxpayers can improve compliance

and tax revenue generation (Bird, 2015; Rosdi et al., 2016; Semenova et al., 2017). Hence, there is a need to create and share tax knowledge with taxpayers to improve tax revenue generation. However, the study on mechanisms that can convert tacit to explicit knowledge for easy dissemination in tax administration is limited. Tacit knowledge cannot be easily transferred or disseminated because it is embedded in peoples' minds (Wan Yusof et al., 2018; Abubakar et al., 2019); therefore, it is important to convert tacit to explicit knowledge. This is because explicit knowledge is easily accessible and available as it is in the form of texts, manuals, specifications, procedures, diagrams, pictures, drawings, and videos (APO, 2013; Abubakar et al., 2019). Moreover, the study on how explicit knowledge can improve tax revenue generation is limited. This study explored the mechanisms that can convert tacit to explicit knowledge and improve tax revenue generation. The objectives of this study are: (i) to explain the externalization mechanisms in tax administration, and (ii) to explain how explicit tax knowledge can improve tax revenue generation. In line with the first objective, the finding of this study showed documentation and training manual can externalize tacit knowledge in tax administration. Thus, documentation and training manual are essential mechanisms that convert tacit to explicit knowledge based on the finding of this study. For example, participant 11 said, *"..... Documentation of experience is very critical because it externalized tacit knowledge which is employed to update operation manuals of various departments in tax administration ....."*. In the same vein, participant 1 who is a deputy director stated that: "*Tacit knowledge of staff in the department and its units are captured and documented in the manual....."*.

Documentation transforms tacit to explicit knowledge which improves workers' knowledge and work process. When knowledge is documented, it becomes a source of reference for future task execution. In tax administration, tacit is converted to explicit knowledge through documentation and serves as a guide for work execution. Furthermore, a report from meetings, training, workshop, and conference are documented as sources of reference. Other knowledge documented in tax administrations is new innovations. Also, tax administrators' and taxpayers' information are documented in the database. Documentation transforms tacit to explicit knowledge in tax administration. Moreover, it enhanced knowledge dissemination in tax administration as tax officers in other locations can access knowledge when it is documented. This finding is in line with Nonaka and Tekauchi (1995), and Nonaka and Konno (1998). Other studies that are consistent with this finding include Easa (2012) who found that documentation externalized knowledge in an Egyptian bank. Also, Salmador and Bueno (2007) indicated that documentation of knowledge acquired from training, seminar, and meeting externalized tacit knowledge. In the same vein, Schulze and Hoegl (2008) found documentation of discussions with external bodies such as customers, suppliers, and competitors' externalized knowledge.

The second mechanism that can externalize knowledge as found by this study is the design of training manual by a professional/expert. Designing of training manual by a professional/expert externalized tacit knowledge of a professional/expert. In tax administration, experts and professionals in the training department and training school design training manual for internal training. In the same vein, experts who are consultants design training manual for external training. Training manual design by experts in tax administration training schools and consultants are sources of references that improve knowledge, work process, and quality. With respect to the finding of this research, studies that have revealed training manual as a mechanism for externalization in other organizations are Easa (2012), Li et al. (2009), Martín-de-Castro et al. (2008), Rice and Rice (2005), and Tsai and Li (2007). For example, Easa (2012) found that training manual converted tacit to explicit knowledge in Egyptian banks.

With respect to the second research objective, finding from data collection showed explicit knowledge engenders taxpayers' access to tax knowledge; therefore, improves compliance to pay tax and tax revenue. For example, participant 2 said: *"….. Also, all explicit knowledge in tax administration can be easily disseminated or transferred to taxpayers which improve compliance and tax revenue performance"*. Also, participant 13 stated that: *"….. Training manuals that are documented, are employed for taxpayers' education to improve tax process, compliance and revenue"*. When taxpayers have access to tax knowledge, their obligation in the tax payment process becomes easy which enables them to comply to pay taxes. Thus, access to tax knowledge facilitates the process to pay taxes; hence, engendering taxpayers' compliance and improving tax revenue generation. Studies showed access to tax knowledge by taxpayers enhances compliance and tax revenue (Bird, 2015; Rosdi, 2015; Semenova et al., 2017). On this note, Bird (2015) stated that the availability of tax information/knowledge to taxpayers improves compliance and tax revenue. Likewise, Semenova et al, (2017) affirmed that improved service delivery such as the availability of information to taxpayers enhances compliance and tax revenue generation. Keen (2014) found that improving service delivery to taxpayers enhances compliance and tax revenue.

5. Conclusion

This study explained the mechanisms that convert tacit to explicit knowledge and how it can improve tax revenue generation. The study employed literature and empirical study to explain documentation and training manual as mechanisms that convert tacit to explicit knowledge and improve tax revenue performance as a result

of tax compliance. Thus, documentation and training manual transform tacit to explicit knowledge and improve compliance and tax revenue performance. The present study contributes theoretically and practically. In theory, the study extends SECI model and knowledge creation by explaining documentation and training manual as mechanisms that convert tacit to explicit knowledge in the tax administration context. The study addressed knowledge creation; hence, it contributed to knowledge management. Furthermore, it extends tax administration performance in terms of revenue generation. The literature is important and can be employed by researchers for further research, students for learning, and teachers for teaching. The literature is important to tax officers as it can enhance their theoretical knowledge to enhance their practice.

In practice, the mechanisms can be employed as a strategy to convert tacit to explicit knowledge for easy accessibility by taxpayers to enhance compliance and tax revenue. Improved/increased tax revenue can improve the economy and living standards of citizens. Tax administration policymakers can formulate policy to convert tacit to explicit and increase revenue generation based on the mechanisms explained in this study. The limitation of this study is that it addressed only the externalization mode for the creation of explicit knowledge. According to Nonaka and Tekauchi (1995), two modes of SECI model create explicit knowledge. The two modes are externalization and combination; however, this study focuses on externalization alone and did not incorporate the combination mode for the creation of explicit knowledge. Therefore, constitute a limitation to this study. Future research can focus on combination as a SECI model to create explicit knowledge.

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