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CONTENTS OF THE ISSUE

- i. Copyright Notice
- ii. Editorial Board Members
- iii. Chief Author and Dean
- iv. Contents of the Issue

1. Strategic Intelligence's Impact on Crisis Management in Jordanian Telecommunications Companies. *1-8*
2. Impact of Inflation on Unemployment in Nigeria (1985-2019): A Non-Linear Approach. *9-18*
3. Property Appraisals: Considerations Regarding the Income Approach - Its use and Possible Distortions in the Leasing Market. *19-24*

- v. Fellows
- vi. Auxiliary Memberships
- vii. Preferred Author Guidelines
- viii. Index



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Strategic Intelligence's Impact on Crisis Management in Jordanian Telecommunications Companies

By Mohammed Hmoud Abd-alkareem ALShibly,
Emad Hmoud Abd-alkareem ALShibly & Sulieman Ibraheem Shelash Al-Hawary

Al al-Bayt University

Abstract- The primary aim of the study was to examine the impact of innovative leadership practices on strategic intelligence in telecommunication companies in Jordan. Data were primarily gathered through the questionnaires distributed to a random sample of (125) managers. In total, (116) responses were received, including (4) invalid to statistical analysis due to uncompleted or inaccurate. Hence, the final sample contained (112) answers suitable to analysis requirements. Structural equation modeling (SEM) was conducted to test hypotheses. The results showed that all innovative leadership dimensions have a positive impact relationship on strategic intelligence except changeability which has no impact on Strategic Intelligence. According to the results reached by the analysis, the researchers present several recommendations to decision-makers to adopt to enhance the desired results through strategic intelligence in adopting crisis management strategies in the telecommunication companies in Jordan.

Keywords: *innovative leadership, strategic intelligence, telecommunication companies. jordan.*

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Strategic Intelligence's Impact on Crisis Management in Jordanian Telecommunications Companies

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I. INTRODUCTION

Specialists in the field of management and strategic management believe that successful management is the one that constantly seeks to innovate modern administrative tools and various techniques that would contribute to achieving leadership, creativity, and institutional excellence by working on managing all the resources of the institution in various circumstances and crises, in a way that achieves the survival of organizations Continuity and growth (AITaweel & Al-Hawary, 2021; Al- Quran et al., 2020; Al-Lozi et al., 2017; Alhalalmeh et al., 2020; Al-Nady et al., 2013; Al-Nady et al., 2016; Allahow et al., 2018). Peter Darker pointed out the need for managers to learn to manage the organization in a creative way. Strategic intelligence is considered a protective shield for the organization, as it plays a vital role in every stage of the organization's strategies and operations. The role of this type of

intelligence in managing crises facing the organization, as it helps managers in defining the organization's programs and policies, and the ability to address future challenge of the organization (Hijjawi & Mohammad, 2019).

Strategic intelligence was named one of the forms of intelligence which anchors leadership traits, then finding creative leaders, particularly in light of the growing importance of leadership in institutions and reliance on traits (intelligence, mind, and personality) in trying to judge the efficiency of leaders (Al-Hawary & Hadad, 2016). The challenges, problems and crises faced by public institutions in the current era are growing as a result of the rapid changes and developments that occur in their business environments, which have become an obstacle and a challenge to them, or limit their ability to keep pace with development or respond to changes, therefore, institutions need to activate strategic intelligence practices in order to develop effective crisis management strategies. Organizations required improving their products and enhancing indicators of their competitiveness, especially during the challenges the world is witnessing. In general, the success of the organizations requires keeping pace with strategic management developments. Strategic intelligence is also considered an advanced field; it is considered one of the important tools that enable these institutions to deal with the environmental uncertainty they face, and it is an important factor in supporting and coordinating all efforts to unify them in order to achieve the strategic goals efficiently and effectively. The study mainly aimed to determine the role that strategic intelligence plays in enhancing crisis management strategies.

II. THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

a) *Crisis management*

The concept of crisis has several meanings, including a sudden change for the worse and the risks and opportunities it entails to restore conditions to their normal state and find constructive solutions, or in other words, it is a turning point in unstable conditions, or a series of events that have a negative impact on the

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institution (Al-Zubaidi and Al-Mamouri, 2015). It is also a critical moment related to the fate of the administrative entity that has been affected by it. The concept of crisis management refers to how to overcome the crisis by using scientific administrative methods in order to avoid its negative aspects as much as possible and maximize its answers. Crisis management is a purposeful activity based on research and obtaining the necessary information that enables the administration to predict the locations and trends of the expected crisis, and create the appropriate climate to deal with it by taking measures to control the expected crisis. Every crisis has premises, evidence indicating its occurrence, and initial, intermediate, and final manifestations. The causes of the emergence of crises vary according to their different types, fields, and types, some of them are outside the capabilities of the institution, some are due to external causes, and some are related to the internal environment. In order to get rid of or limit the negative effects of crises when they occur, institutions may follow a number of strategies or one of them according to the stages of the crisis, and these strategies include: Early warning strategy: It is the stage of discovering the danger signs of the crisis, and these signs appear early, because the crisis usually sends a series of early warning signals long before it occurs, or symptoms that predict the possibility of the crisis. Preparedness and prevention strategy: in which a set of required prevention methods are taken at the stage of risk discovery, including: Prevention includes discovering weaknesses and strengths in order to address them. Damage containment strategy: It is summarized in preparing means to limit the damage and prevent it from spreading to other parts that are not yet affected in the organization. This strategy depends on the nature of the accident that occurred. Recovery strategy: This strategy includes preparing and implementing short and long-term programs, and this stage includes restoring lost morale. This strategy also includes trying to compensate for what was lost in the previous stage. Learning and growth strategy: It is a stage of continuous learning and reassessment to improve what has been achieved in the past. Learning is vital, but it is very painful, as it evokes painful memories left by the crisis, and that drawing lessons learned from a disaster or crisis depends on the availability of a sensitive sense in the human being that makes him appreciate the suffering the change.

b) *Strategic intelligence*

Intelligence has been and is still the subject of discussion for many years by researchers, psychologists, sociologists and genetics, as there is no complete agreement on its concept and meaning due to the difference being something that is not tangible and is not directly measured, although it is the basis for the greatest and best human achievements and is one of the causes of progress and creativity. Some scholars

have characterized intelligence as a genuine phenomenon with a presence that can be measured, and others have described intelligence as the ability to cognitively adjust to life and its new conditions, in other words, the opportunity to benefit from prior experiences in addressing difficulties (Ghubari, Abu Shaira, 2010). Intelligence is the mental ability that individuals have, which is affected by the factors of the dynamic environment surrounding it, and among the contents of this ability is to collect and store information and refer to it to support his actions in different situations, to achieve certain goals (Qasim, 2011).

Strategic intelligence can also be defined as a systematic and continuous process to produce intelligence effectively to facilitate long-term decision-making and include improving performance of workers participating in decision-making (Al-Hawary & Hadad, 2016). Strategic intelligence has also been defined as an important tool in achieving success and leadership for enterprise leaders, and that strategic intelligence refines the qualities of leaders and transforms them into strategic leaders capable of achieving the goals of their organizations (Maccoby, 2011). Many organizations today are building and developing their strategic intelligence by attracting consultants and specialists who provide the necessary analyzes and final outputs that will help in making important and sensitive decisions in the organization such as merging and opening new production lines (Xue, 2017).

Strategic intelligence is measured through several dimensions: Foresight: It expresses the ability of the leader to think in the form of invisible forces, but they create the future and show the importance of the element in employing intelligence for leaders of organizations in several areas. Systems thinking: It expresses the ability to synthesize the integration of elements more than separating them into parts and then analyze them with each other and then evaluate them in terms of their relationship to the whole, and focus on the method of their interaction with each other in terms of their success in serving the goals of the system (Muslim, 2015). Strategic vision: A clear and enterprising strategic vision is a necessary component of strategic leadership without taking a future conception of the business, i.e. what it will need to satisfy customers, as well as what business activities to pursue and the types of long-term market situations to build compared to competitors (Bridge and O'Neill, 2012). Motivation: It expresses the action that pushes the individual to adopt an appropriate viewpoint to accomplish the task assigned to him in a satisfactory manner, as well as stimulating the emotions and desires of the individual to urge him to do a specific action (Ansoff, 2019). Intuition: The inner voice that generates feelings against our decisions or with them in general, especially if the data is conflicting or insufficient. We rely on it to reach a conclusion on the sixth sense (Mahmood, 2019). Partnership: It reflects the

organization's ability to establish a set of strategic alliances with organizations that work together in order to gain sufficient support to succeed in its work, the higher the strategic intelligence of the organization, the higher its ability to build strategic alliances with others, and thus increase its ability to continue, grow and survive in the industry.

c) *Strategic intelligence and crisis management strategies*

Building the future of organizations is not easy. Success becomes difficult in a changing work environment, characterized by instability and uncertainty. Success and excellence in performance require a combination of different elements, such as technology, people, and resources; to create a fully functional building, here emerges the importance of the organization's interaction with crisis management strategies, considering it a basic fact and an important part of the organizations' work, and their interaction with their environment. Crisis management strategies are not random, this process follows specific patterns that lead to expected results, and one of its most common processes and results is the exploration and investment of opportunities; to achieve the objectives of the organization, and make improvements to obtain more competitive advantages to distinguish from others. The areas of crisis management have received many studies and research due to their importance. Crisis management deals with many areas in the organization, and may include more than one field at the same time.

According to Al-Abbasi and Hamad's (2020) study, there is a significant correlation between the strategic mindset and briefing in the external environment in a way that allows the institution to shape visions for ongoing activities, predict, and styling strategies for improving crisis management, while excellence, sustainable development, and continuous improvement will undeniably be for the companies that implement the most strategic intelligence, as strategic intelligence is a key component of strategic intelligence; through the development and development of intangible assets, which are among the most important resources of the organization at all. The fields of intelligence have also received a lot of studies and research from those interested in the field of strategic intelligence. Given its importance; Some previous studies found a statistically significant impact relationship between the practices of strategic intelligence and organizational ambidexterity (Saleh, Suleiman, 2020), as well as a relationship between the strategic intelligence of senior leaders in promoting organizational excellence among academic leaders at Hamdania University (Youssef, 2020). Through the foregoing in explaining the importance of the concepts of crisis management strategies and strategic intelligence, it is possible to formulate the hypothesis of the study as follows:

Strategic intelligence has a statistically significant impact on crisis management in Jordanian telecommunications companies.

III. STUDY MODEL

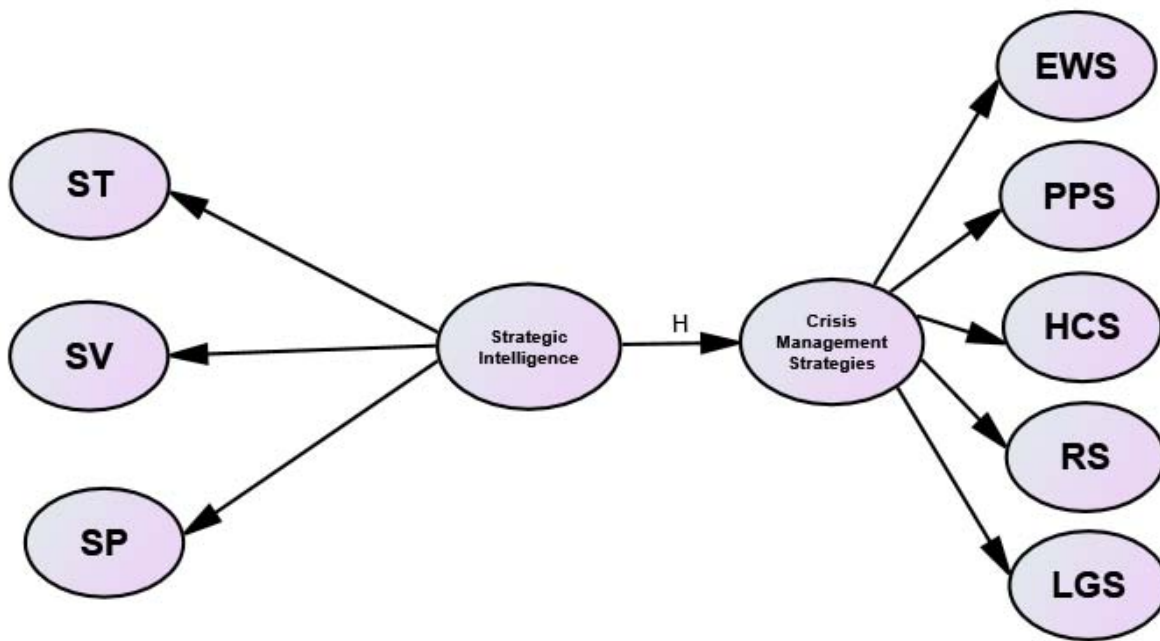


Figure 1: Research Model

a) Methodology

i. Population and sample selection

By means of a quantitative method so as to achieve the goals of the present study, data were harvested from a sample made up of (126) subjects, who were randomly picked from telecommunication firms in Jordan. Exactly, (116) surveys were admitted; four responses were invalid due to incomplete answers were excluded, whence, data statistical analysis was carried out using (112) surveys. Such a number meets the assumption that the collected data should be saturated (Sekaran & Bougie, 2016).

ii. Measurement instrument

Research instrument entails two key sections as well as a third one for control variables. Control variables, i.e., gender, age, educational level, and experience were deemed as considered as categorical variables. The instrument was anchored adopting a five-point Likert scale; (1) refers to strongly disagree and (5) stands for strongly agree. Section1 enclosed (9) items to measure strategic intelligence based on (Pherson & Pherson, 2020; Ahmadi, Baei, Hosseini-Amiri, Moarefi,

Suifan & Sweis, 2020). The items of strategic intelligence(9 items) were scattered onthree dimensions; i.e., strategic partnership, systems thinking, and strategic partnership, equally. On the other hand, the items of the crisis management strategies (15 items) were also equally allocated to five dimensions; i.e., warning strategy, preparedness and prevention strategy, harm containment strategy, recovery strategy, and learning and growth strategy (Eliadis, 2019; Harcek, 2018; Kapucu & Ustun, 2018).

b) Findings

i. Measurement model evaluation

Hypotheses were tested applying structural equation modeling (SEM), which is an up-to-date statistical technique used to estimate the relationship between constructs (Wang & Rhemtulla, 2021). Convergent validity, discriminant validity, and internal consistency were used to assess validity and reliability, as shown in Table 1, based on constructs factor loading, average variance extracted (AVE), the square root of AVE values, and Cronbach's alpha coefficients.

Table 1: Findings of validity and reliability

Constructs	1	2	3	4	5	6	7	8
1. ST	-							
2. SV	0.61	-						
3. SP	0.74	0.65	-					
4. EWS	0.65	0.69	0.65	-				
5. PPS	0.69	0.64	0.63	0.57	-			
6. HCS	0.75	0.63	0.55	0.65	0.74	-		
7. RS	0.72	0.77	0.59	0.52	0.74	0.55	-	
8. LGS	0.76	0.71	0.62	0.69	0.69	0.53	0.65	-
VIF	2.511	2.019	1.987	---	---	---	---	---
Loadings range	0.741- 0.842	0.594- 0.780	0.725- 0.829	0.514- 0.839	0.692- 0.752	0.541- 0.744	0.577- 0.729	0.785- 0.842
AVE	0.644	0.654	0.624	0.635	0.622	0.688	0.654	0.712
MSV	0.544	0.562	0.529	0.533	0.587	0.601	0.522	0.534
Internal consistency	0.789	0.854	0.869	0.872	0.869	0.844	0.891	0.905
Composite reliability	0.887	0.864	0.849	0.853	0.816	0.882	0.798	0.799

Note: ST: systems thinking, SV: strategic vision, SP: strategic partnership, EWS: early warning strategy, PPS: preparedness and prevention strategy, HCS: Harm containment strategy, RS: recovery strategy, LGS: Learning and growth strategy, bold fonts in the table indicate to root square of AVE.

The results in Table 1 pointed out that both validity and validity indices showed acceptable thresholds. Factor loadings, ranged between (0.514) and (0.839), were greater than 0.50 (Al-Lozi et al., 2018; Sung et al., 2019). Convergent validity was assured as AVE values were higher than 0.50 (Howard, 2018). Discriminant validity was tested based on comparing maximum-shared variance (MSV) values with AVE values and comparing the square roots of AVE values to correlations between constructs (Rimkeviciene et al., 2017). It was acknowledged that MSV values were

slighter than AVE values, which were higher than Pearson correlation coefficients between constructs. Furthermore, Cronbach's alpha coefficient and composite reliabilities were above 0.70 (de Leeuw et al., 2019).

ii. Structural model

Research structural model as traced in Figure 1 displays that the collected data met the required cut-off values of goodness-of-fit indices. Chi-square to degrees of freedom (CMIN/DF = 2.198 < 3), the goodness of fit index (GFI = 0.976 > 0.90), the comparative fit index

(CFI = 0.972 > 0.90), and the Tucker-Lewis index (TLI = 0.981 > 0.90). Likewise, the root mean square error of approximation (RMSEA = 0.046 < 0.08) (Ahmad et al., 2016; Shi et al., 2019). In terms of multicollinearity, the values of the variance inflation factor (VIF) were less

than 5, which mean that the current data is free of multicollinearity among independent variables (Hair et al., 2017). The findings of hypotheses testing are outlined in Table 2.

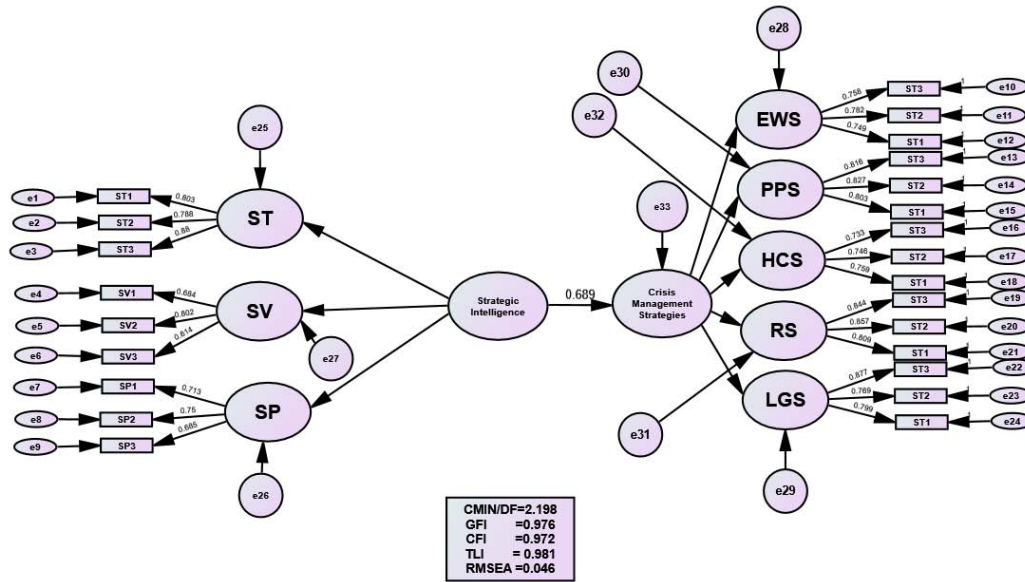


Figure 2: SEM results of the digital marketing effect on mental image

Table 2: Findings of hypothesis testing

Hypothesis	Relation	Standard Beta	tvalue	pvalue
H1	Systems Thinking→Crisis Management Strategies	0.406	8.169	0.000
H2	Strategic Vision→Crisis Management Strategies	0.252	4.937	0.000
H3	Strategic Partnership→Crisis Management Strategies	0.126	2.598	0.000

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

The results exhibited in Table 2 indicate that all strategic intelligence dimensions have a positive impact relationship on crisis management strategies. However, the results indicated that systems thinking ($\beta = 0.406$, $t = 8.169$, $p = 0.000$) had the maximum effect, followed by strategic vision ($\beta = 0.252$, $t = 4.937$, $p = 0.000$), strategic partnership ($\beta = 0.126$, $t = 2.598$, $p = 0.000$) had the minimum effect.

IV. DISCUSSION

The results indicated that the telecommunication companies in Jordan are working to pay attention to the perception of the company in the form of a coherent and harmonious system, with reliance on studying ideas collectively instead of studying them individually to feel their value in the long run, and analyzing any problem by looking at its combined causes instead of separating its factors from each other, this helps to see the events that surround

the institution in a clearer picture, and enhances the ability to integrate the various elements in the institution for the purpose of analytical and understanding how they interact. The hypothesis test revealed that strategic intelligence has an impact on crisis management, with the highest dimension being related to systems thinking, followed by strategic vision, and finally strategic partnership.

The researchers conclude from this result that strategic intelligence in the telecommunication companies in Jordan reflected in many dimensions related to crisis management strategies, and given this result and the fact that systems thinking represents the first step towards the process of thinking in neutralizing the negative effects of crises, hence the preparation and prevention for it. The vision must be the independent mirror of these institutions in terms of a long-term view and an attempt to enhance organizational effectiveness in line with thinking as an institution in avoiding

independent dangers to individuals, the institution and society. Therefore, cooperation and competition by maintaining the positive effects of what companies produce it is inevitable, hence the role of strategic partnerships as a regular process in the companies operating in Jordan, the result of the study is consistent with Al-Quwaz study (2012).

V. RECOMMENDATIONS

According to the results reached by the analysis, the researchers present a number of recommendations to decision-makers to adopt to enhance the desired results through strategic intelligence in adopting crisis management strategies in the telecommunication companies in Jordan, due to the value and benefit telecommunication companies in Jordan will achieve in order to persuade them to enter into a partnership A strategy by promoting practices related to the activity of containing crises through the establishment of telecommunication companies in Jordan because of their impact on restoring life to institutions and the continuity of the wheel of production in them. The researchers also recommend the need to restore activity as a crisis strategy with conscious, pre-planned and official efforts, so that the matter is under control, and to achieve the hopes of rebuilding, the need for telecommunication companies in Jordan to pay attention to learning and growth as a strategy for crises and get out of them with conscious and planned efforts, stimulating learning and training: by providing incentives the material and moral to attend training programs and meetings to study the crisis, so that the benefit from them can be confirmed.

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Impact of Inflation on Unemployment in Nigeria (1985-2019): A Non-Linear Approach

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Keywords: *unemployment rate, inflation rate, Real GDP, foreign direct investment, and interest rate.*

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IMPACT OF INFLATION ON UNEMPLOYMENT IN NIGERIA (1985-2019) AND NON-LINEAR APPROACH

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Felix Emmanuel Dodo^α & Moukhtar Muhammad Idris^σ

Abstract- This study examines the impact of inflation on unemployment in Nigeria from 1985 to 2019. In analyzing the data, nonlinear autoregressive distributive lag (NARDL) was employed. The result of the nonlinear ARDL shows that in the short-run inflation (positive) has a negative and significant effect on unemployment while inflation (negative) has a positive and significant impact on unemployment. Similarly, in the long run, inflation (positive) has a negative and significant effect on unemployment. The study concludes that there is a piece of empirical evidence for the existence of the nonlinear Phillips curve in Nigeria, within the period of the study. It is recommended that the government should reduce the positive rise in price by implementing policies that encourage production. An increase in agricultural production for example increases the level of employment which has great potential to boost food supply and reduce the level of inflation and unemployment in the economy. In addition, the study identifies the benefits and inherent potentials in natural resources in Nigeria that can be harnessed to address the problem of inflation and unemployment.

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1. INTRODUCTION

Inflation and unemployment have become a central issue to policymakers and analysts both in developed and developing countries of the world; hence, the two variables are widely acknowledged to pose one of the persistent macro-economic challenges facing the global economies. As a result, the need to achieve macroeconomic goals is imperative. In the 1930s when Keynes wrote his general theory, unemployment was the major problem in the world. Indeed, after the Second World War, inflation becomes a global economic problem. In essence, from the post-war period to late 1960s, another macroeconomic variable that becomes a major economic issue is unemployment. Besides, from the 1960 to 1970, new global phenomenon appears in form of stagflation a situation where both inflation and unemployment are higher (Jhinghan, 2011). In addition, a great contribution to the study about the connection between inflation and unemployment was made by Philips (1958) who proposed that there was a trade-off or a negative relationship between inflation and unemployment. Philip drew this conclusion using data and statistics sources from the British economy from

1861 to 1957. Along these lines, the hypothesis claims that, if inflation increases, unemployment would decrease. Such a scenario becomes an issue of great concern to policymakers. Consequently, from the 1970s, one of the key areas of debates in macroeconomic theory and policy literature is the effects of inflation on unemployment. This has prompted some economists began to question the effectiveness of the Philip curve hypothesis in general because the stagflation that existed was caused by instability in global oil price resulting in a supply shift for the global economies (Kairo, et al., 2019).

In the global context, inflation surely is not a new phenomenon, but the global inflation rate has progressively risen from 2.13% in 2015 to 2.94% in 2017 before it declined from 2.76% to 2.32% in 2018 and 2019. The decline in global inflation was due to an effective macroeconomic policy adopted by some countries of the world. In the African context, inflation wave experiences have also been different across the continent, and it has always been an issue that produces so many problems like eroding the purchasing ability of unit national currency. Inflation increases the cost of living and makes the life of individuals to become more miserable. The profile of inflation rates in Africa shows the average rate was 6.8% in 2015; it declined from 10.7% to 8.5% in 2017 and 2019 respectively. In Nigeria, inflation has been a problem for many decades. Its persistence is always sided with many negative macroeconomics indices like unemployment, GDP growth, and interest rate. More so, the trend of inflation becomes worsening again because of the prevalence of insecurity in Nigeria ranging from insurgency, kidnapping, cattle rustling prevented lots of farmers to go back to farming. Indeed, this is associated with an increase in the inflation rate from 15.7% in 2016 to 16.5% in 2017, with a negative growth rate of -0.61% in 2016, as the Nigerian economy entered into a recession. In the same connection, as of 2016 and 2017, the unemployment rates thus in double-digit fall from 25.9% to 18.8%. Subsequently, the inflation rate dropped from 12.1% to 11.4% in 2018 and 2019, with the corresponding unemployment rate rising from 23.1% to 28.6% in 2018 and 2019. Despite the prudent policy implemented, the growth rate of inflation side by side with unemployment multiplied the problem of Nigerians as many people willing to work are without jobs (World Bank, 2019).

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Taken together, unemployment and inflation are issues that are central to both the social and economic life of Nigeria. The growing inflation and unemployment associated with poverty have continued to eat deeply into the growth fabric thereby causing challenges for Nigeria like raising the welfare package of the government. In more explicit form, the Nigerian economy has suffered immensely from the shackles of inflation and challenges of unemployment and it remains the major source of an economic and social problem despite the increases in growth rate declare every year. In addition, the continuous rising in prices coexists with unemployment to a large extent affects economic performance. Indeed, the two variables have been found to reduce national wealth, increase crime, and socio-political violence (Ademola & Badiru, 2016).

Various successive governments and regimes in Nigeria had ushered in several macroeconomic policies and programmes to achieve the desired goals of a low and stable inflation rate, reducing the growing unemployment and cartelized economic growth. Unfortunately, they failed to solve the problems of inflation and unemployment in the country. It is imperative to note that the little success recorded by these policies should serve as enduring lessons to the policymakers. This is because the pressures of the two variables have continued to be on the rise and gained more attention to economists, policymakers, and politicians than any other macroeconomic problem. After all, the sources of the inflationary trends and unemployment are many and dynamic. With the foregoing, this research work is designed to examine the nonlinear (asymmetric) impact of inflation on unemployment in the Nigerian context from 1985 to 2019, using Philip Curve as the theoretical framework to attain an even growth rate.

II. REVIEW OF EMPIRICAL LITERATURE

Literatures reviews on the impact of inflation on unemployment that captured the asymmetries effects are as follows: Anil and Pia (2015) estimated the Phillips curve for the United State of America, using state-level data from 1982 to 2013, with the use of nonlinear model. The study found strong evidence that the wage-price Phillips curve has a negative nonlinear relationship with the unemployment rate. In the case of Jordan, Hussein and Saleh (2015) used the nonlinear ARDL to examine the relationship between the inflation rate and the unemployment rate within the Jordanian economy from 1976 to 2013. In the findings of the study, there was a negative and nonlinear relationship between inflation and unemployment. Similarly, Bildirici and Özaksoy (2016) used the nonlinear ARDL approach and the nonlinear Granger causality method to analyzed Post-Keynesian Phillips Curve for the period from 1957 to 2015 in Canada. The results show there is a long-run

negative asymmetric relationship between inflation and unemployment. In the case of Nigeria, Iyeli and Edame (2017) determined if there is an asymmetry relationship between price expectation and unemployment from 1970 to 2011. The result obtained revealed a positive nonlinear relationship between inflation and unemployment in Nigeria. In support of the above result, N'Guessan (2018) adopted the nonlinear Engel-Granger cointegration technique to test the relationship between the price level and employment in Côte d'Ivoire from 1960 to 2014. However, a positive nonlinear relationship exists between inflation and unemployment. Meanwhile, Malik and Mansur (2018) re-examined the relationship between inflation and unemployment in Nigeria from 1991 to 2017. It applied the Nonlinear ARDL approaches. The study confirms the presence of a nonlinear negative relationship between inflation and unemployment in Nigeria. In the African context, Nkoba and Masih (2018) re-examined the long-run relationship that exists between inflation and unemployment in Tanzania from 1991 to 2017. The study adopts the nonlinear autoregressive distributive lag (NARDL). The results show that there is an asymmetrical short-run negative relationship between inflation and unemployment. Annalisa and Piero (2021) examined the nonlinear impact of inflation on unemployment in the USA from 1961 Q1 to 2019 Q4. The study found a nonlinear negative and significant impact between inflation and unemployment. Moreover, Ait, et al. (2021) examined if inflation has nonlinear effects on unemployment in the OECD. The study used quarterly data from 1948Q1 to 2019Q4. The result shows, there is a positive nonlinear relationship between anticipated inflation and unemployment. Recently, Binh and Hector (2021) investigated the asymmetrical relationship between inflation and unemployment with the use of monthly data from 1991Q1 to 2019Q4. The findings show a positive nonlinear relationship between CPI and unemployment.

a) *Gap in the Literature*

The review of empirical literature shows that there is an inconclusive result on the relationship between inflation and unemployment. This is because some studies have shown either a negative or positive nonlinear relationship exists between unemployment and Inflation. The existing literature that finds evidence of the asymmetric negative impact of inflation on unemployment include Annalisa and Piero (2021), Nkoba and Masih (2018), Malik and Mansur (2018), Bildirici and Özaksoy (2016), Anil and Pia (2015) and Hussein and Saleh (2015). On the other hand, those studies that claim that inflation has an asymmetric positive impact on unemployment are those by Ait, et al. (2021), Binh and Hector (2021), N'Guessan (2018), and Iyeli and Edame (2017).

Specifically, after the in-depth review of the previously asymmetric studies on the impact of inflation on unemployment, across the countries of the world, it shows that studies focusing on the nonlinear relationship between inflation and unemployment in Nigeria are limited. Therefore, the shortcoming identified is that studies such as Anil and Pa (2015), Bldiric and Ogzakoas (2016), N'Guessan (2018), Iyeli and Edame (2017), has been criticized for they do not capture the 2016-2017 economic recessions and 2019 Covid-19 induced economic recession that occurred in Nigeria and other economies.

To extend the frontiers of knowledge and to fill this gap in this study area, this study differs from previous studies as it introduces foreign direct investment as one of the control variables based on the premise that the inflow of foreign direct investment would result in lower unemployment. Included in the model also is the real interest rate because the monetary authority makes use of interest rate as a tool to influence economic activities. Also, the study adopted the Nonlinear ARDL approach to capture possible asymmetry in both the long-run and short-run. This is because Baldiric and Turkmen (2015) pointed out that asymmetric models have more explanatory power than linear models. In addition, the NARDL framework developed by Shin, Yu, and Greenwood (2014) is an extension of the Autoregressive Distributed Lag (ARDL) approach propounded by Pesaran and Shin (1999) and Pesaran et al. (2001). In the case of the Nigerian economy, this study contributes to the macroeconomic literature in general by considering asymmetries between inflation and unemployment.

b) Theoretical Literature

The theoretical framework on the impact of inflation on unemployment in Nigeria is the Philip curve hypothesis. This theory is adopted because it is considered the best framework that links the variables and it is significant to the study. The Philips curve theory was developed by Philips (1958) using empirical data from the United Kingdom. The Philips curve theory postulates that there is an inverse relationship between inflation and unemployment. The argument is that whenever there is inflation in a country, economic activities increases, because producers may be willing to produce more output to make higher revenue and consequently higher profit. For the producers to produce additional output they must employ additional workers on the existing number, and hence the level of unemployment will fall. On the other hand, the flatter the curve, the higher will be the fall in unemployment that will be attained by a small increase in the rate of inflation. The trade-off relationship implied by the Philips curve meant that policymakers could determine the opportunity cost of a lowered inflation rate in terms of the employment forgone. It was their task therefore to

optimize this trade-off relationship by selecting the inflation-unemployment-combination that maximized social benefit or minimized social cost. Besides, in the early 1970s, the first empirical failure of the Philip curve occurred when both inflation and unemployment increased simultaneously, primarily due to oil-price shocks. The Philip curve concluded based on the above arguments that the relationship between the rate of unemployment and change of money wage would be highly nonlinear when shown on a diagram. As a result, the Philip curve is regaining interest after a period of neglect and there has been considerable theoretical work suggesting a nonlinear relationship between inflation and unemployment (Jhingan, 1997).

III. METHODOLOGY

a) Data and its Sources

This study employed secondary data spanning from 1985 to 2019. As expected, the annual time series data on the unemployment rate, real GDP, and interest rate were drawn from Nigeria's Central Bank statistical bulletin (2019) while the inflation rate and foreign direct investment are sourced from the World Bank report (2019). In this study, this time frame was chosen to capture the independent impact of both positive and negative changes in inflation on unemployment.

b) Model Specification

To facilitate the analysis of data in this study, the dependent variable is the unemployment rate while the explanatory variable is the inflation rate. As well, the control variables are real GDP, foreign direct investment, and interest rate. Therefore, the nonlinear model for this study is expressed as follows:

$$UR_t = \beta_0 + \beta_1 INFR_t^+ + \beta_2 INFR_t^- + \beta_3 RGDP_t^+ + \beta_4 RGDP_t^- + \beta_5 FDI_t^+ + \beta_6 FDI_t^- + \beta_7 INTR_t^+ + \beta_8 INTR_t^- + \mu_t \dots \dots \dots (1)$$

Where UR= Unemployment rate

$INFR_t^+$ = Positive inflation

$INFR_t^-$ = Negative inflation

$RGDP_t^+$ = Positive Real GDP

$RGDP_t^-$ = Negative Real GDP

FDI_t^+ = Positive foreign direct investments

FDI_t^- = Negative foreign direct investments

$INTR_t^+$ = Positive interest rate

$INTR_t^-$ = Negative interest rate

The μ = Stochastic disturbance term or error term.

The t = Time as well as β_0 = Constant or the intercept depicting the unemployment rate when the independent variables are equal to zero.

c) Model Estimation Procedures

In the pre-estimation evaluation of the data, the Augmented Dickey-Fuller (1982), Phillips-Perron (1988),

and the Kwiatkowski, Phillips, Schmidt, & Shin (1992) unit root tests are carried out. In addition, the study also conducted the Kapetanios, Shin, & Snell (2003) nonlinear unit root test to compare the results for consistency. This study employs the nonlinear ARDL proposed by Shin, Yu, and Greenwood- Nimmo (2014). The NARDL allows capturing both the short-run and

long-run asymmetries in the transmission mechanism. The NARDL method allows for possible increases and decreases in inflation, real GDP, foreign direct investment, and interest rate to affect unemployment differently. The study decomposes inflation, real GDP, foreign direct investment, and interest rate into positive and negative partial sums as specified as follows.

$$\begin{aligned}
 UR_t = & \beta_0 + \beta_1 INFR_t^+ + \beta_2 INFR_t^- + \beta_3 RGDP_t^+ + \beta_4 RGDP_t^- + \beta_5 FDI_t^+ + \beta_6 FDI_t^- + \beta_7 INTR_t^+ \\
 & + \beta_8 INTR_t^- + \sum_{i=1}^p \phi_1 \Delta In(UR_{t-i}) + \sum_{i=1}^q \phi_2 \Delta In(INFR_{t-i}^+) + \sum_{i=1}^q \phi_3 \Delta In(INFR_{t-i}^-) + \sum_{i=1}^r \phi_4 \Delta In(RGDP_{t-i}^+) \\
 & + \sum_{i=1}^r \phi_5 \Delta In(RGDP_{t-i}^-) + \sum_{i=1}^q \phi_6 \Delta In(FDI_{t-i}^+) + \sum_{i=1}^r \phi_7 \Delta In(FDI_{t-i}^-) + \sum_{i=1}^r \phi_8 \Delta In(INTR_{t-i}^+) \\
 & + \sum_{i=1}^q \phi_9 \Delta In(INTR_{t-i}^-) + \varepsilon_t \dots\dots\dots(2)
 \end{aligned}$$

In equation 2 all the variables as defined in p, q, r, and s are lag orders of the variables in the model. β_1 to β_8 denote the long run impacts of the positive and negative changes in inflation, real GDP, foreign direct investment, and interest rate on the unemployment rate.

Also, the $\sum_{i=1}^q \phi_2$ to $\sum_{i=1}^r \phi_8$ measures the short run impact of increase and decrease in inflation, real GDP, foreign direct investment and interest rate on unemployment rate respectively.

IV. RESULT AND DISCUSSION

a) Descriptive Statistics

Table 4.1: Results of Descriptive Statistics

Statistics	LUNR	LINFR	LRGDP	LFDI	LINTR
Mean	2.3447	2.6682	17.2569	0.3180	2.6026
Median	2.5416	2.5029	17.1132	0.3718	2.6391
Maximum	3.3534	4.2882	18.0640	1.7563	3.2581
Minimum	-0.1165	1.6842	16.5205	-1.0426	1.5041
Std. Dev.	0.7863	0.7163	0.5381	0.6481	0.3768
Skewness	-0.8639	0.9359	0.2476	0.1825	-1.2308
Kurtosis	3.6973	2.8442	1.5445	2.6937	4.3706
Jarque-Bera	5.0630	5.1444	3.3486	0.3311	-1.2308
Probability	0.0795	0.0763	0.1874	0.8474	0.0031
Sum	82.0652	93.3860	586.7354	11.1311	91.0905
Sum Sq. Dev.	21.0226	17.4428	9.5554	14.2824	4.8271
Observations	35	35	34	35	35

Source: Researcher's computations using E-Views 9 (2021).

Table 4.1 provides the descriptive statistics of the variables. The link between standard deviation and mean values explain the extent to which mean represents the actual dataset. The average growth rate of the unemployment rate is 2.34%. Inflation rate is 2.67%, Real GDP is 17.26%, foreign direct investment is 0.32% and interest rate is 2.60%. In this case, a variable such as Real GDP appears to have significantly spread out from its average values. It implies it is unstable and somewhat volatile. Other variables like the unemployment rate, inflation rate, foreign direct investment and interest rate in the study are relatively stable and less volatile as their data appear to have

somewhat clustered around their respective mean values.

The coefficients of Kurtosis indicate that the kurtosis is 3 or close to 3. The coefficients of skewness also support that the data are not symmetrically distributed. It rather shows properties of clear asymmetries in the data distribution. The data do not follow a typical bell shape. They are either skewed left or right. Indeed, the distributions are not symmetrical. Similarly, the Jarque-bera statistics reveal that unemployment rate was 0.079, inflation rate was 0.076 and interest rate was 0.003 which are not normally distributed while the Jarque-bera probability values for

real GDP was 0.187 and foreign direct investment was 0.847 which are normally distributed. The data, therefore, portray elements of asymmetric distribution in their data spreading which call for the application of nonlinear ARDL methods in analyzing the relationship between inflation and unemployment in this study.

b) Unit Root Test Results

This study used three popular linear unit root tests such as Augmented Dickey-Fuller (ADF), Phillip Peron (PP) tests, and Kwiatkowski, Philip, Schmidt, and

Shins Test (KPSS). In line with the methodology of the study, it will not be intellectually sound to rely solely on linear unit root tests when there is evidence of nonlinearity and asymmetries in the variables. Therefore, the study employs Kapetanios, Shin, and Snell (2003) unit root test to account for nonlinearity and asymmetries in an attempt to ensure the robustness of the results of unit root tests. The unit root results are presented as follows:

Table 4.2: Unit Root Tests

Variables	ADF		PP		KPSS	
	Level					
	Constant	Constant With Trend	Constant	Constant With Trend	Constant	Constant With Trend
LUR	-3.4353	-3.1502	-3.4181	-5.7045	0.7642*	0.0679*
LINFR	-1.9605	-2.4292	-2.9351	-3.0172	0.2876*	0.1237*
LRGDP	-0.2706	-1.9418	0.0480	-1.7614	0.6688	0.1439
LFDI	-3.6575*	-3.6439*	-3.3725*	-3.5659*	0.1350*	0.1299***
LINTR	1.7992	1.0271	-0.5641	-1.6812	0.3775*	0.1860*
First Differences						
LUR	-11.6587*	-11.2385*	-11.7240*	-11.3340*	0.1843	0.8999
LINFR	-2.8726***	-2.7873***	-6.5621*	-6.0827*	0.4446	0.4540
LRGDP	-2.9340***	-2.8307***	-2.9586**	-2.8513**	0.1612*	0.1337*
LFDI	-4.4619	-4.3884	-9.3548	-11.0618	0.3677	0.5000
LINTR	-6.5387*	-7.3156*	-6.5387*	-9.3470*	0.3192	0.1446

Note: ***, ** and * denotes significant at 1%, 5% and 10% significance level respectively

Source: Researcher's computations using E-Views 9 (2021).

Table 4.2 show the results of the unit root test using a traditional method of ADF, PP, and KPSS where foreign direct investment is stationary at levels 1(0) while the unemployment rate, inflation rate, real gross domestic product, and interest rate are stationary at their first difference 1(1). The KPSS test result report that inflation, foreign direct investment and interest rate are

integrated at level 1(0) while real GDP is integrated at its first difference I(1). Also, the Kwiatkowski *et al.* (1992) argue that their test is intended to complement unit root tests, such as the ADF and PP which suffer from the problem of low power and size distortion. Testing the unit root with three frameworks helps the researcher to compare the results for consistency.

Table 4.3: KSS Nonlinear Unit Root Tests (Nonlinear ESTAR Models)

Variables	Level 1(0)	First Difference 1(1)
UNR	-0.635	-3.866**
INF	-3.072*	-1.905
RGDP	-2.250	-2.768**
FDI	-9.299*	0.095
INTR	-0.016	-3.316**

Note: *and ***,denotes significances at 1%, and 10% significance levels

Source: Researcher's Computations (2021).

KSS denotes Kapetanios, Shin & Snell (2003)

Table 4.3 displays the results of the KSS nonlinear unit root. These tests are within the framework of a globally stationary exponential smooth transition autoregressive (ESTAR) process based on a nonlinear model. The results of KSS tests reveal that inflation and foreign direct investments are integrated at level 1(0) while unemployment real GDP and interest rate are integrated at the first difference I (1). It is important to

note that the optimal lag length of the results of KSS reported in Table 4.3 is premised on the Schwarz information criterion (SIC). Another lag length criterion is important but for sake of consistency, SIC is chosen. Therefore, the study then proceeds to carry out the nonlinear Auto Regressive Distribution Lag (NARDL) bound test.

c) *Cointegration Test*

The idea of cointegration is important in economic theory because it is used to determine whether there is a long-run relationship among the

variables (e.g. unemployment rate, inflation rate, real gross domestic product, foreign direct investment, and interest rate). The results of bound testing for asymmetric cointegration are reported in Table 4.4.

Table 4.4: Bound Test for Nonlinear Cointegration Test

F-statistic	7.0182	5
Level of significance	The critical value I(0) Bound	The critical value 1(1) Bound
10%	2.08	3.00
5%	2.39	3.38
1%	3.06	4.15

Source: Researcher's computations using E-Views 9, (2021).

The results of the nonlinear cointegration test in Table 4.4 reveal that the F-statistic value of 7.0182 exceeds the upper bound and lower bound values at a 1% level of significances. The null hypothesis of no

cointegration is rejected. As supported by the results of the NARDL bound tests there is evidence that the inflation rate has a nonlinear long run relationship with the unemployment rate over the study period.

d) *Estimated Short run Coefficients*

Table 4.6: Nonlinear Short-run Coefficients- Dependent Variable is LUNR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLNINFL_POS	-0.7647	0.1464	-5.2237	0.0000
DLNINFL_NEG(-1)	0.6620	0.1111	-5.9547	0.0784
DLNRGDP	0.4935	0.2660	1.8553	0.0784
DLNFDI (-1)	0.1919	0.1059	1.8126	0.0849
D(NINTR)	-0.3801	0.1546	-2.4608	0.0231
C	-4.4403	4.2916	-2.4608	0.0231
CointEq(-1)	-0.7938	0.0993	-7.9916	0.0000

Source: Researcher's computations using E-Views 9 (2021).

In Table 4.6 the results of the nonlinear short run coefficients tend to show that inflation (positive) has a negative and significant effect on unemployment at a 1% level of significance. It indicates that an increase in positive inflation rate by 1% would reduce unemployment by roughly 76% while inflation (negative) has a positive and significant impact on unemployment at a 10% level of significance. This implies that an increase in negative inflation rate by 1% would increase unemployment by roughly 66%. Real GDP has a positive and significant effect on unemployment at a 10% level of significance. It implies that an increase in real GDP by 1% would increase unemployment by roughly 49%. Also, foreign direct investment has a positive and significant effect on unemployment at a 10% level of

significance. This shows that an increase in foreign direct investment by 1% would increase unemployment by roughly 19%. The interest rate has a negative and significant effect on unemployment at a 5% level of significance. It also shows that an increase in interest rate by 1% would decrease unemployment by roughly 38%. As expected, the short-run error correction term for the model ECM (-1), has a coefficient value (-0.7938) with a negative sign, less than one, and is statistically significant at a 1% level of significances. Again, the speed of adjustment for correcting disequilibrium from the previous year to equilibrium in the current year is 79% respectively. This supports the previous confirmation of a long-term cointegration.

e) *Estimated Long run Coefficients*

Table 4.7: Nonlinear Long run Coefficients- Dependent Variable is LUNR

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNINFL_POS	-0.5471	0.1639	-3.3378	0.0033
LNINFL_POS(-1)	-0.2174	0.1094	-1.9882	0.0606
LNINFL_NEG	-0.1492	0.1063	-1.4046	0.1755
LNINFL_NEG(-1)	0.0578	0.1220	0.4737	0.6409
LNRGDP_POS	-1.5148	1.5499	-0.9773	0.3421
LNRGDP_NEG	15.0901	15.3935	0.9803	0.3507
LNFDI_POS	0.2905	0.1031	2.8167	0.0103
LNFDI_NEG	-0.0968	0.1074	-0.9005	0.3780
LNINTR_POS	-1.2527	0.3749	-3.3412	0.0034
LNINTR_NEG	-0.0723	0.1997	-0.3621	0.7213

Source: Researcher's computations using E-Views 9 (2021).

Similarly, Table 4.7 displays the results of the long run coefficients which show that inflation (positive) has a negative and significant effect on unemployment at a 5% level of significance. Also, indicate that an increase in inflation (positive) by 1% would reduce unemployment by roughly 55%. Foreign direct investment (positive) has a positive and significant effect on unemployment at a 5% level of significance. This shows that an increase in foreign direct investment (positive) by 1% would reduce unemployment by roughly 29% respectively. Interest rate (positive) has a negative and significant effect on unemployment at a 5% level of significance. Also, indicate that an increase in interest rate (positive) by 1% would reduce unemployment by roughly 125% in Nigeria during the study period.

f) *Post-Estimation Tests*

In this research stage, the adequacy of the nonlinear ARDL is also verified by using different diagnostic tests. The results are presented as follows.

Table 4.8: Nonlinear Normality Test

Statistic	Value
Skewness	0.2423
Kurtosis	2.2717
Jarque-Bera	1.0204
Probability	0.6004

Source: Researcher's computations using E-Views 9 (2021).

The results of the normality test in Table 4.8, show that the Skewness is 0.2423, kurtosis 2.2717 and the Jargue-bera probability value is 1.0204 (0.6004). This implies that the conditions for normality are all met because the Skewness is positively skewed and less than one, kurtosis is close to 3, while Jarque-bera probability is not significant at any significances level. Therefore, the data is normally distributed.

Table 4.9: Nonlinear Autocorrelation Test Results

F-statistic	0.3427	Prob. F(2,17)	0.7146
Obs*R-squared	1.2402	Prob.Chi-Square(2)	0.5379

Source: Researcher's computations using E-Views 9 (2021).

From Table 4.9, the Breusch-Godfrey serial correlation LM test result indicates the p-value statistics of 0.7146 is not significant at any level. Therefore, after conducting the unit root test and test for autocorrelation the Durbin Watson (DW) statistics (1.64) is very high and are up to the conventional point 2. The variables are also not significant at a 5% level of significances. We conclude that the model is free from autocorrelation problem.

Table 4.10: Nonlinear Heteroskedasticity Test Results

F-statistic	0.9265	Prob. F(11,20)	0.5355
Obs*R-squared	10.8021	Prob. Chi-Square(11)	0.4600

Source: Researcher's computations using E-Views 9 (2021)

In Table 4.10 the result of tests for Breusch-Pagan-Godfrey Heteroskedasticity conducted reveals that the p-value 0.5355 is not statistically significant at any level which implies the absence of Heteroskedasticity problem. Consequently, the model is reliable for decision-making and forecasting.

Table 4.11: Nonlinear Ramsey RESET

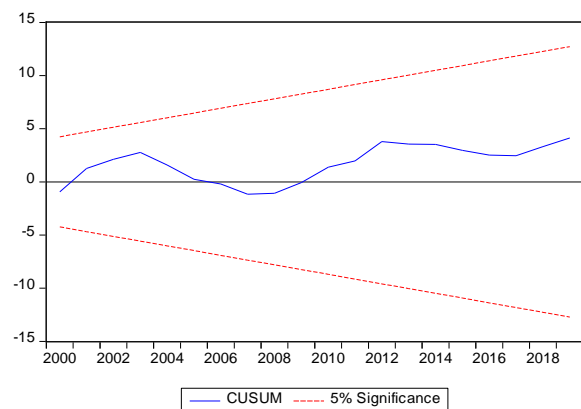
Statistic	Value	Df	Probability
t-statistic	0.7390	19	0.4689
F-statistic	0.5461	(1,19)	0.4689

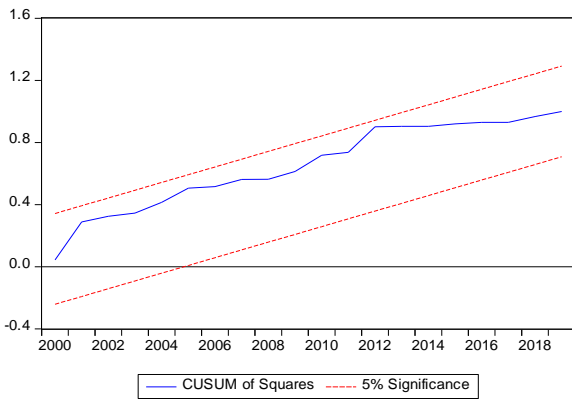
Source: Researcher's computations using E-Views 9 (2021).

The results of the Ramsey (1969) Reset test of Misspecification in Table 4.11 indicate the computed F-statistic and p-value is 0.7390 (0.4689). As expected this test result is considered meaningful because the p-values are not significant at any significances level and it implies that the residuals in the models are free from any diagnostic problems. These results also reveal that there is a shred of evidence that the variables are stable and can be considered for predictions and other economic inferences.

g) *Stability Test Results*

The research study makes use of nonlinear Cumulative Sum of recursive residuals (CUSUM) developed by Brown, Dublin, and Evans (1975) in testing the stability of the parameters of NARDL model within a 5% level of significance. The results of the CUSUM and CUSUM Square test with the unemployment rate as the dependent variable and the explanatory variables such as inflation rate, real GDP, foreign direct investment, and interest rates are shown in Figure 4.3 and 4.4.





Source: Researcher's computations using E-Views 9 (2021).

Figure 4.3: Nonlinear CUSUM plot of stability and CUSUM Square plot of stability

In figure 4.3, the results of the CUSUM plot for the stability of the model show the CUSUM test is within 5% level of significance. There are no chances of having spurious regression because the blue line is in-between the two red lines. The figure further shows that all the variables passed the CUSUM test. This implies that all the variables used are stationary and the model is

Table 4.12: TY Causality Test

Causality	Chi-sq	df	Prob.
UNR does not Granger cause INFL	10.9744	4	0.0269**
INFL does not Granger cause UNR	41.2143	4	0.0000*
INTR does not Granger cause UNR	46.6836	4	0.0000*
RGDP does not Granger cause UNR	40.6358	4	0.0000*
FDI does not Granger cause UNR	10.5098	4	0.0327**
* and ** represent 1% and 5% level of significance.			

Source: Researcher's computations using E-Views 9 (2021).

The results of the causality tests are presented in Table 4.12. The first null hypothesis is that the unemployment rate does not granger cause inflation rate and inflation rate does not granger cause unemployment rate. Thus, as shown by the significance of the p -values (0.0269) the null hypothesis of no causality between the variables is rejected because bidirectional causality exists between unemployment rate and inflation rate. Furthermore, the findings revealed a unidirectional causality between interest rate and unemployment rate, real GDP and unemployment rate, foreign direct investment and unemployment rate during the study period. The implication of the causality results is that unemployment can be easily predicted given the information on all the regressors employed over the study period.

V. CONCLUSION

In this study, the impact of inflation on unemployment is examined, using the Philips curve

stable. The results nonlinear CUSUM of Square test is within 5% level of significance. The plot further shows there are no chances of having spurious regression since the blue line is in-between the two red lines. The decision rule is, all the coefficients of the error terms e_t in the regression estimates are normally distributed. This also implies variance stability and reliability of the model and parameters over the study period. Also, CUSUM and CUSUM squares tests show that the models are stable and can be used for policy formulation.

h) Causality Test Results

The study employed the Toda and Yamamoto (1995) to uncover the direction of causal relationship between inflation and unemployment in Nigeria from 1985 to 2019. The preliminary test carried out indicates the conditions for the T.Y causality test are satisfied. The test include the lag selection test (the initial lag chosen is 4 and the lag used for the TY is consequently 5), stability (the inverse root of AR, and the Roots of Characteristic Polynomial), heteroskedasticity, and autocorrelation. All of them are satisfied from the results.

hypothesis as the theoretical framework over the period 1985-2019. The study employed the nonlinear ARDL technique to analysis the tradeoff that exists between the variables. As rightly found by the Nonlinear ARDL results, in the short run, inflation (positive) has a negative and significant effect on unemployment while inflation (negative) has a positive and significant impact on unemployment. Similarly, in the long run inflation (positive) has a negative and significant effect on unemployment. The study concludes that there is trade-off between inflation and unemployment in Nigeria which is consistent with the findings of the empirical studies Annalisa and Piero (2021), Nkoba and Masih (2018), Malik and Mansur (2018), Bildirici and Özaksoy (2016), Anil and Pia (2015) and Hussein and Salah (2015).The important policy implication of this result is that it shows the extent to which monetary and fiscal measures can be applied as a means of controlling inflation without high levels of unemployment in Nigeria. Therefore, the fight against these two macroeconomic problems in

Nigeria should take a steady and holistic approach. As a result, the need for an economic approach and solution is imperative.

Based on the results of the study, the following recommendations are made:

The government should adopt prudent policy measures to deal with the factors identified as sources of inflation like the high cost of transport, exchange rates instability, persistent increase in the supply of money, inadequate electricity supply, and insecurity, among others. Government should give emphasize on the creation of vocational centers where the unemployed people can be trained on different kinds of trade after which low-interest loans should be given to them to become self-employed in the country to reduce unemployment rate.

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Property Appraisals: Considerations Regarding the Income Approach - Its use and Possible Distortions in the Leasing Market

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Abstract- This study analyzes the Income Approach – NBR 14653-4/2002, more specifically, in item 9.3 – when it proposes to “[...] identify the value of the enterprise based on the expectation of future results [...]”. At this point, the property valuation protocol has been much discussed, especially in some lawsuits, due to the confirmed feeling that there is a lack of discretion when using, in a mistaken way, its dictates in properties not characterized as real estate-based, that is. that is, reaching real estate – land and/or buildings not produced/prepared for the lessor to exploit economically. The referred standard adds that: “[...] the value of the project will correspond to the present value of the projected cash flow, discounted at given rates [...]”. What has been seen is that the widespread use of this approach presupposes that the lessee will use the property attached to an exotic type of partnership with the lessor. These valuation procedures, disconnected from reality, somehow deviate from NBR 14653-2/2011, when the ideal would be to use the Direct Comparative Method of Market Data, thus considering the value of the property in relation to the value of the properties similar in a given region.

Keywords: *property valuation standards series NBR 14653, rent method, real estate based leases, direct comparative market data method.*

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Property Appraisals: Considerations Regarding the Income Approach - Its use and Possible Distortions in the Leasing Market

Avaliações De Imóveis: Considerações A Respeito Do Método Da Renda - Seu Uso E Eventuais Distorções No Mercado Das Locações

Feigelson Deutsch. S^α, Rottmann. E^σ & Silva. O^p

Abstract- This study analyzes the Income Approach – NBR 14653-4/2002, more specifically, in item 9.3 – when it proposes to “[...] identify the value of the enterprise based on the expectation of future results [...]”. At this point, the property valuation protocol has been much discussed, especially in some lawsuits, due to the confirmed feeling that there is a lack of discretion when using, in a mistaken way, its dictates in properties not characterized as real estate-based, that is, reaching real estate – land and/or buildings not produced/prepared for the lessor to exploit economically. The referred standard adds that: “[...] the value of the project will correspond to the present value of the projected cash flow, discounted at given rates [...]”. What has been seen is that the widespread use of this approach presupposes that the lessee will use the property attached to an exotic type of partnership with the lessor. These valuation procedures, disconnected from reality, somehow deviate from NBR 14653-2/2011, when the ideal would be to use the Direct Comparative Method of Market Data, thus considering the value of the property in relation to the value of the properties similar in a given region.

Keywords: *property valuation standards series NBR 14653, rent method, real estate based leases, direct comparative market data method.*

Resumo- O presente estudo analisa o Método da Renda – NBR 14653-4/2002, mais especificamente, em seu item 9.3 – quando se propõe a “[...] identificar o valor do empreendimento com base na expectativa de resultados futuros [...]”. Nesse ponto, o protocolo de avaliação de imóveis tem sido bastante discutido, principalmente em algumas ações judiciais, pela sensação confirmada de que há uma falta de critério ao se utilizar, de forma equivocada, seus ditames em imóveis não caracterizados como de base imobiliária, isto é, alcançando imóveis – terrenos e/ou edificações não produzidos/preparados para que o locador os explore economicamente. A referida norma acrescenta que: “[...] o valor do empreendimento corresponderá ao valor presente do fluxo de caixa projetado, descontados as taxas [...]”. O que se tem visto é que a utilização generalizada do referido método, pressupõe que o locatário utilizará o imóvel preso a um tipo exótico de sociedade com o locador. Esses procedimentos avaliatórios desconexos da realidade, de

alguma forma, se distanciam da NBR 14653-2 de 2011, quando o ideal seria a utilização do Método Comparativo Direto de Dados de Mercado, considerando, assim, o valor do imóvel em relação ao valor dos imóveis semelhantes em sua região.

Palavras-chave: *normas de avaliações de imóveis série nbr 14653, método da renda, locações de base imobiliárias, método comparativo direto de dados de mercado.*

I. INTRODUÇÃO

Esse artigo retrata, resumidamente, sob a ótica das Normas da ABNT, de uma situação frequente em algumas ações renovatórias, em que os peritos se utilizaram do Método da Renda para determinarem o valor do aluguel de parte de terrenos onde se localizam, por exemplo, uma série de benfeitorias ou instalações tais como Estações Rádio Base¹, bancas de jornais, construções de uso

¹ Estação Rádio Base – “torre de celular ou estação base de celular é um local de dispositivo móvel habilitado para celular onde antenas e equipamentos de comunicações eletrônicas são colocados - normalmente em um mastro de rádio, torre ou outra estrutura elevada - para criar uma célula em uma rede de uma companhia. Uma torre de celular ou estação base celular é um local de dispositivo móvel habilitado para celular onde antenas e equipamentos de comunicações eletrônicas são colocados - normalmente em um mastro de rádio, torre ou outra estrutura elevada - para criar uma célula (ou células adjacentes) em uma rede celular. A estrutura elevada geralmente suporta antena e um ou mais conjuntos de transceptores transmissores/receptores, processadores de sinais digitais, eletrônicos de controle, um receptor GPS para temporização (para sistemas CDMA2000/IS-95 ou GSM), fontes de energia elétrica primária e de backup e abrigo.[1] Nas redes de Sistema Global de Comunicações Móveis (GSM), o termo correto é Estação Base Transceptora (Base Transceiver Station - BTS), e sinônimos coloquiais são “mastro do telefone móvel” ou “estação base”. Vários provedores de celular economizam dinheiro montando suas antenas em um mastro compartilhado comum. Uma vez que sistemas separados usam frequências diferentes, as antenas podem ser localizadas próximas umas das outras sem interferir umas nas outras. Algumas empresas fornecedoras operam várias redes celulares e usam similarmente estações-base colocadas para duas ou mais redes celulares (CDMA2000 ou GSM, por exemplo). Algumas cidades exigem que as torres celulares sejam discretas. Elas podem ser misturadas com a área circundante.”. https://pt.wikipedia.org/wiki/Torre_celular. Acesso em 21/07/2021.

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temporário, entre outras finalidades, e para tal aplicam indevidamente o Método da Renda. Os locadores vislumbram a obtenção de uma resposta, ao nosso ver, equivocada, uma vez que, pleiteiam a obtenção não só do aluguel de parte de seu lote/terreno, mas de uma parcela adicional ligada à renda obtida pela locatária com a utilização da porção do terreno.

Nos laudos, em alguns casos, principalmente em relação a locação de antenas e ERB, casos que têm se tornado mais frequentes na Justiça, por uma falta de regras específicas normatizadas. Dessa forma, os Peritos, muitas vezes, partem para aplicação do Método da Renda, em função de ser um tipo de locação diferenciado, o qual se distingue do mercado para valores de terreno. Tal procedimento não é correto, visto que gera um valor de locação muito acima do justo para determinadas áreas, que são muito degradadas, e que por si só, não possuem o potencial econômico que justifique a majoração da locação por tal metodologia.

II. METODOLOGIA

Tais situações induzem pesquisas das mais variadas realizações, ao longo de mais de 35 anos, quando vários profissionais brasileiros, atuantes na Avaliação de Imóveis e autores com publicações diversas puderam enriquecer o tema, criando sua pacificação, hoje, constante da NBR 14653-4/2002² e nas demais partes das normas para avaliação de bens.

Para tal, no desenvolvimento do presente artigo, será apresentada a história e essência do Método da Renda, tal como hoje consta na Norma de Avaliação, NBR 14653-2, demonstrando que tal metodologia não se aplica aos casos analisados em tela, onde o ideal é a aplicação do Método Comparativo Direto de Mercado, que retrata a realidade de cada locação especial em análise, nas regiões onde se encontram.

III. MÉTODO DA RENDA

Na pesquisa histórica realizada sobre a aplicação dessa metodologia, nos deparamos com vários trabalhos de profissionais da área, que seguiram argumentos originalmente apresentados no IV Congresso Brasileiro de Avaliações e Perícias de

Engenharia, em outubro de 1984, realizado em Porto Alegre, RS. Nesse COBREAP, o arquiteto Francisco Alves Gomes Júnior, definiu a aplicação do justo aluguel em casos especiais, como por exemplo, locação um cinema ou teatro, calculado a partir do número de poltronas e do preço líquido do ingresso e essa forma de ver esses imóveis especiais o levou ao mérito de receber 'menção honrosa' do plenário desse congresso.

Na sequência histórica podemos citar a apresentação da Fórmula de Francisco Alves Junior, apresentada pelo engenheiro Sérgio Antônio Abunahman (2017) no XIX COBREAP em Foz de Iguaçu: $AL = N \times P \times n \times 0,05$, onde AL= aluguel mensal. / N= número de poltronas para o público. / P= preço líquido do ingresso (sem impostos). / n= número mensal de sessões ou espetáculos. O fator 0,05 representa o produto do percentual de 25% correspondente à remuneração do locador e/ou empresário pelo percentual habitual de lotação média de 20% da sala aproximadamente ($0,05 = 0,25 \times 0,20$); ao avaliador terá de ser fornecido o borderô de ingressos dos doze meses que antecedem o mês da avaliação, compensando-se meses atípicos como janeiro e fevereiro, além da observação aleatória a ser feita em sessões em dias de pico (sextas-feiras e sábados à noite) e sessões diurnas durante a semana.

Em linhas gerais, segundo Silva, O e Brasileiro, A (2005) – “este modelo se baseia na apropriação do justo valor locatício em função da renda líquida obtida pelo estabelecimento³, durante o ano anterior ao término do período da locação. No desenvolvimento da avaliação são evidenciadas as dificuldades para a utilização deste método, das quais a principal é a obtenção dos dados efetivos da renda da empresa locatária”. Ou, “aquele que apropria o valor do imóvel ou de suas partes constitutivas, com base na capitalização presente da sua renda líquida real ou prevista.”

O método da Renda, como bem citado por Gatto (2007) “consiste em valorar o bem a partir de sua possibilidade de renda futura, refletindo, neste caso, a valoração econômica”. Na NBR 14653-1 (2019) consta no item 7.2.4 a definição do Método da Capitalização

² Também registrado na Norma do IBAPE: MÉTODO DA RENDA, segundo o qual, o valor do bem ou de suas partes constituintes é obtido pela capitalização de sua renda líquida, real ou prevista. A apuração é feita como se o valor fosse aplicado no mercado normal, mediante a utilização de taxas convenientes de renda e de operação, que devem ser amplamente justificadas pelo avaliador. Recomenda-se sua utilização conjuntamente com outros métodos, exceto em casos especiais, devidamente justificados. Havendo necessidade de extrapolações, o avaliador poderá optar por taxa vigente no mercado financeiro para aplicações financeiras de longo prazo, que envolvam o período extrapolado; se inexistirem, poderá explicitar uma ou mais taxas para o cenário previsto, transferindo para o julgador o mérito da questão (IBAPE, 2005).

³ Cabe lembrar que, no caso específico, é esperado para as avaliações para imóveis especiais, como estacionamentos, cinemas, teatros, hotéis, motéis, postos de serviço o Método da Renda e mais ênfase é dada por Abunahman (1999) in - Curso Básico de Engenharia Legal e de Avaliações, 1999, p. 130, ao salientar que, para estes tipos de imóveis, os métodos: comparativo e de renda devem ser descartados. Portanto, as diferenças são bem frisadas e nítidas, como o autor assim publicou: “Uma das avaliações que mais geram controvérsias é a que diz respeito aos postos de serviços. Estes, tal como os cinemas, teatros, hotéis e motéis, enquadram-se no rol dos “imóveis especiais”, para os quais devem ser descartados os métodos comparativos e da rentabilidade, revelando adotar-se o da renda, ou seja, aquele em que o locador e locatário, de certo modo, são sócios no empreendimento.”

da renda: “7.2.4. Método da Capitalização da renda. Identifica o valor do bem, com base na capitalização presente da sua renda líquida prevista, considerando-se cenários viáveis”

O método pode ser descrito como aquele que apropria os valores aos imóveis com base na capitalização presente da sua renda líquida, real ou presumida. Seus aspectos fundamentais são a definição do período de capitalização e a taxa de desconto a ser utilizada, que devem ser justificadas pelo engenheiro de avaliações

Nesse sentido, em casos específicos, como os já comentados, de locação de Estação Rádio Base

(ERB), bancas de jornais, estandes e construções de uso temporário, entre outras finalidades, o método da Renda não se aplica, visto que não há possibilidade de aferir completamente a renda obtida, além de tal metodologia não considerar aspectos específicos, principalmente a

localização das áreas locadas. Nos casos de ERBs, muitas estão posicionadas em áreas de vizinhança imediata de Comunidades, locais de extrema violência e periculosidade, em que a locação não pode ser determinada pela renda auferida.



Figura 1: Foto de exemplo de Antena localizada vizinha a área de ocupação irregular

Os casos de renovação de áreas locadas a rede de telefonia móvel vem aumentando, visto ser um serviço que se iniciou na década de 90, privatizando-se no final da referida década e que cresce a cada dia. Além de muitas ERBs se localizarem em áreas de risco, a própria instalação das antenas, conforme inúmeros estudos, podem trazer problemas de saúde em função da exposição a esse tipo de campo eletromagnético.

De acordo com Tavares (2001) compete à ANATEL estabelecer os limites de segurança a serem adotados pelas prestadoras do serviço móvel celular no que se refere à instalação das antenas rádio base. O grande número de antenas que vem sendo instalada nos grandes centros urbanos requer um estudo dos seus efeitos e a adoção de medidas para minimizar qualquer tipo de poluição ambiental e problemas de saúde para a vizinhança.

Para locação em determinados terrenos, as ERBs necessitam cumprir determinadas regras estabelecidas no Decreto nº 41728 de 20 de maio de 2016, tal como transcrito a seguir.

No nível do solo: a) quando se tratar de instalações em torres, a altura da estrutura de sustentação, deverá corresponder à da maior edificação existente no raio de 50 (cinquenta) metros do eixo da antena ou ao gabarito ou altura estabelecido para o local pela legislação em vigor, adotada sempre a maior, acrescida de até 15 (quinze) metros, ressalvadas as exceções previstas neste Decreto. b) quando se tratar de instalações em postes, mastros ou similar deverá ser observada a distância correspondente aos afastamentos e prismas utilizados para ventilar ou iluminar compartimentos das edificações, exigidos pela legislação em vigor, entre as instalações da ERB e Mini-ERB e qualquer edificação

existente no local, observados, em qualquer hipótese, os limites de densidade de potência estabelecidos pela ANATEL.

Nas fachadas das edificações: a) somente quando camufladas ou mimetizadas, preservando a harmonia com a edificação e mitigando o impacto com a paisagem; b) necessária a apresentação prévia de material gráfico ou fotográfico, de modo a simular a adequação com a edificação e a paisagem, possibilitando a análise e aprovação pelos órgãos competentes; c) não poderão prejudicar as partes comuns ou as ventilações dos compartimentos existentes na edificação; d) os equipamentos do sistema de transmissão ou recepção potencialmente geradores de ruídos ou vibrações, deverão ser submetidos a tratamento acústico e antivibratório de modo que o Nível de Pressão Sonora (NPS) não ultrapasse os limites previstos em legislação pertinente, bem como as vibrações oriundas do sistema não afetem a estrutura física do imóvel.”

No caso da adoção do método da Renda para cálculo do valor de locação dessas áreas de terrenos ocupadas pela telefonia, os profissionais buscam obter resultados, aplicando fórmulas contendo o pressuposto da renda obtida, porém com dados incompletos e sem considerar essas características peculiares de cada caso, tornando os valores obtidos, normalmente, fora da realidade efetivamente existente.

Dessa forma, o justo no caso do cálculo do valor de locação para áreas parcialmente ocupadas de terrenos, com usos específicos, principalmente em casos de Ações renovatórias de locação, é a adoção do Método Comparativo de Dados de Mercado.

Como Ações Renovatórias, conforme Deutsch, SF (2019) são ações “propostas pelos locatários de um contrato de locação não residencial, no prazo de doze a seis meses, antes do encerramento do referido documento. A avaliação deverá ser calculada para data final do contrato”.

IV. MÉTODO COMPARATIVO DE DADOS DE MERCADO

O Método Comparativo Direto de Dados de Mercado constante da NBR 14653-2 constitui-se na comparação direta de casos semelhantes. Como cita Candeloro, M (2007), “o método comparativo “pretende determinar o aluguel por comparação direta com aluguéis de outros imóveis colocados no livre mercado, guardando-se, obviamente, as diferenças entre eles”.

Na NBR 14653-1 conforme artigo 7.2.1 a definição do Método Comparativo Direto de Dados de Mercado (MCDDM), tal como transcrito.

“7.2.1. Método Comparativo de Dados de Mercado - Identifica o valor de mercado do bem por meio de tratamento técnico dos atributos dos elementos comparáveis, constituintes da amostra.”

No caso da telefonia, atualmente com a ampla rede existente, muitas vezes, há a possibilidade de se comparar diretamente casos de antenas locadas na mesma região.

Quando o profissional não tem possibilidade de obter contratos de locação de atividades semelhantes na mesma região, poderá adotar o comparativo por meio de obtenção de uma amostra de terrenos semelhantes.

A Norma de Avaliação, NBR 14.653-2 estabelece que a amostra a ser utilizada nos cálculos avaliatórios deverá ser representativa para explicar o comportamento do mercado:

“8.2.1.3.2 O levantamento de dados tem como objetivo a obtenção de uma amostra representativa para explicar o comportamento do mercado no qual o imóvel avaliando esteja inserido e constitui a base do processo avaliatório. Nesta etapa o engenheiro de avaliações investiga o mercado, coleta dados e informações confiáveis, preferentemente a respeito de negociações realizadas e ofertas, contemporâneas à data de referência da avaliação, com suas principais características econômicas, físicas e de localização.”

Na NBR 14653-2, no item 8.1.1 fica claro que a melhor metodologia, quando possível, é o método comparativo de dados de mercado, tal como transcrito.

“8.1.1. Para a identificação do valor de mercado, sempre que possível preferir o método comparativo direto de dados de mercado, conforme definido em 8.2.1 da ABNT NBR 14653-1:2001”

V. DISCUSSÃO

Procedimentos avaliatórios desconexos da realidade do mercado, como os descritos anteriormente, de alguma forma, se distanciam da NBR 14653-2 de 2011, quando o ideal seria a utilização do Método Comparativo Direto de Dados de Mercado, considerando, assim, o valor do imóvel em relação ao valor dos imóveis semelhantes em sua região.

A Engenharia de Avaliações (para a atuação de engenheiros civis e arquitetos) nasceu e ganhou espaço com o desenvolvimento e a complexidade, cada vez mais marcante dos centros urbanos⁴. Com

⁴ Engenharia de avaliações: uma página de nossa história - A Engenharia de Avaliações, como especialidade, é relativamente nova. A pedra fundamental da nova ciência só foi lançada no Brasil em 1918, quando o Eng Vitor da Silva Freire publicou um artigo sobre avaliação racional de terrenos, o que já se fazia em outros países desde meados do século anterior. Durante as décadas de 20 e 30, diversos trabalhos procuraram difundir a nova técnica, sendo destaque aqueles assinados pelos engenheiros Anhaia Melo, Berini Lysandro Pereira e Ernani Nogueira. Em 1941, Luis Carlos Berrini Lança seu primeiro livro, "Avaliação de Terrenos", a mais significativa obra do gênero em língua portuguesa. Logo em seguida, Alberto de Zagottis escreve sobre a importância do método estatístico como instrumento de avaliação pelo método científico. Em novembro de 1952, o Anteprojeto de Normas para Avaliação de Imóveis, escrito pelo Eng Augusto Luis Duprat, é examinado pela ABNT. Em 1954, o

isso, se estabeleceu uma rotina de procedimentos na apuração de dados amostrais que convergissem em busca da determinação de valor, de forma técnica e racional para os bens imobiliários. Ao longo do tempo, revisões e aprimoramentos necessários foram acontecendo e, sempre que há alguma distorção registrada na lida das avaliações, os profissionais atuantes devem levar ao conhecimento público de forma que as entidades normativas, em sessões específicas apurem as razões e os trabalhos de revisões e aperfeiçoamentos sejam efetuados.

A Norma Brasileira de Avaliação de Bens - NBR série 14.653, da Associação Brasileira de Normas Técnicas (ABNT), bem como a Normas do IBAPE, surgiram para normatizar o conhecimento da Engenharia de Avaliações e sugerir alternativas e direcionamentos para atender as necessidades de avaliação de imóveis e determinação de valor.

É importante considerar também as Normas IVS (International Valuation Standards), sendo que tais normas tem reconhecimento internacional. Conforme bem cita Rottmann, E. (2007) a Norma IVS também apresenta dos métodos da Renda e Comparativo, sendo que enfatiza a importância do Método Comparativo, tal como transcrito.

"5.12. O Método Comparativo reconhece que os preços de imóveis são determinados pelo mercado. Uma estimativa de Valor de Mercado pode, portanto, ser

calculada a partir de um estudo dos preços de propriedades que competem entre si por uma parcela do mercado. Os procedimentos comparativos que se aplicam são fundamentais ao Processo Avaliatório

5.12.1. Quando há dados disponíveis, o método comparativo é o método mais direto e mais sistemático para se estimar valor."

VI. RESULTADOS

Este trabalho, aqui apresentado, tem como objetivo apresentar uma abordagem sobre os conceitos do Método Comparativo Direto de Dados de Mercado aplicado a imóveis, a partir da fundamentação da NBR 14.653, que o recomenda como método prioritário nas avaliações imobiliárias dentro do cenário brasileiro, utilizando-se de uma amostra de dados com elementos comparáveis ao objeto estudado.

O método de avaliação por Renda é recomendado para empreendimentos de base imobiliária, que são feitos para auferir renda depois de concluídos. Alguns exemplos: lojas destinadas a varejistas, edifícios ocupados por hospitais, edifícios corporativos, indústrias, imóveis logísticos etc. Nunca um terreno nu ou vazio, onde o locatário é que faz os devidos ajustes e construções de acordo com suas necessidades.

No caso de avaliações de valor de locação de áreas ocupadas, por exemplo, para implantação da Torre da Estação Rádio Base – ERB, por meio de diversos casos analisados, identifica-se que o valor calculado pelo Método Comparativo, torna-se um valor compatível com o mercado da região. Esse resultado confronta o entendimento equivocado de que a locação de parte de um terreno poderia ser vista como fonte de renda alternativa para o proprietário, além da locação propriamente dita.

Nesse ponto, o protocolo de avaliação de imóveis tem sido bastante discutido, principalmente em algumas ações judiciais, pela sensação confirmada de que há uma falta de critério ao se utilizar, de forma equivocada, seus ditames em imóveis não caracterizados como de base imobiliária, isto é, alcançando imóveis – terrenos e/ou edificações não produzidos/preparados para que o locador os explore economicamente.

Normalmente, nas regiões onde se instalam as torres, há muitos terrenos vazios e com edificações que poderiam ser locados pela empresa que pode chegar à conclusão de que em alguns meses, com o valor da possível decisão judicial, podem ser equivalente à compra um deles e instalar a sua torre, ao invés de locar parte de um terreno e ter que pagar uma 'cota extra'.

Eng Hélio de Caires e sua equipe promovem em São Paulo a 3. Convenção Pan-americana de Avaliações. À seguir são criados diversos institutos estaduais, sendo os mais antigos os do Rio de Janeiro (IEL), em São Paulo (IBAPE), Pernambuco (IPEAPE), Rio Grande do Sul (IPARS) e Paraná (INAPAR). Ao longo dos anos 60, no rastro do novo perfil que delineava o país, a nova ciência ganhou impulso, capitaneada por profissionais como os Engenheiros Joaquim da Rocha Medeiros Jr., Ernesto Whitaker, Nelson Pereira Alonso, Eurico Ribeiro, Domingos de Saboya, Ênio Azabuja, Murílio Pessoa, Rubens Bezerra, Fernando, Guilherme Gonçalves, Francisco Alves Gomes Jr., entre outros. Em 1974, a Editora Pini publica o livro "Engenharia de Avaliações", coordenado pelo Eng. José Carlos Pellegrino, um marco na moderna técnica científica de avaliações e precursora de inúmeras obras que vieram suprir a necessidade crescente de trabalhos sobre o assunto. Na Universidade Federal do Rio Grande do Sul, graças ao empenho do Eng. Iba Ilha Moreira Filho, foi criada a primeira disciplina de Engenharia de Avaliações e Perícias no currículo de um curso de graduação em engenharia. Paralelamente, é dado um grande impulso à especialidade adotando o uso sistemático de computadores no processo avaliatório. Em Minas Gerais, os nomes dos Engenheiro J. Silva Martins Orlando Andrade Resende e Josalfredo Borges São lembrados como exemplo de pioneirismo na matéria. À partir de 1979, com a fundação do IMAPE, a Engenharia de Avaliações, toma novos rumos, em Minas Gerais com a realização de diversos seminários, cursos e simpósios visando a formação e reciclagem de técnicos. Os Congressos Brasileiros (COBREAPs) passaram a acontecer periodicamente à partir de 1974, em São Paulo, vindo a seguir Curitiba (77), Rio de Janeiro (80), Porto Alegre (84) e Recife (87), onde a Presidência da ABRAP, até então ocupada pelo Eng. Biagio Ramos Sarubbi, passou para o Eng. Guilherme Brandão Federman, de Minas Gerais, para onde a sede itinerante da entidade foi transferida e ocorrerá o VI COBREAP em 1990. <https://www.precisaconsultoria.com.br/artigos/historia.html> Acesso em 21/07/2021.

VII. CONCLUSÃO

A utilização generalizada do método da renda em ações renovatórias de áreas ocupadas em terrenos, por ERB's, ou instalações específicas, pressupõe que o locatário utilizará o imóvel como "sócio" do proprietário do imóvel. Tal fato pode acabar desvirtuando a relação locador- locatário, levando os proprietários a requerer, por exemplo, parcela da renda de locatários de salas comerciais, ou locatários de home-offices ou mesmo, quem sabe um dia, locação de unidades habitacionais, se o inquilino vier a trabalhar em sua moradia. Prática que configuraria uma situação de distribuição de renda disfarçada. De forma simétrica, em um caso de um "mau negócio", o locador teria de participar do prejuízo de uma atividade que não é sua!

A adequada aplicação do Método da Renda pressupõe a montagem total ou parcial de uma edificação para que o locador se beneficie dessa estrutura, criando condições para que haja ganhos diretos com essa locação.

Resulta que o mais adequado é sempre a preferência pelo Método Comparativo Direto de Dados de Mercado, como bem preconizado pelas normas técnicas vigentes, quando o imóvel em análise tem características consistentes com o mercado e a microrregião em que este se insere.

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Acknowledgments

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The following is the official style and template developed for publication of a research paper. Authors are not required to follow this style during the submission of the paper. It is just for reference purposes.



Manuscript Style Instruction (Optional)

- Microsoft Word Document Setting Instructions.
- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27" x 11", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word "Abstract" in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
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Structure and Format of Manuscript

The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references)

A research paper must include:

- a) A title which should be relevant to the theme of the paper.
- b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
- c) Up to 10 keywords that precisely identify the paper's subject, purpose, and focus.
- d) An introduction, giving fundamental background objectives.
- e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
- f) Results which should be presented concisely by well-designed tables and figures.
- g) Suitable statistical data should also be given.
- h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

- i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
- j) There should be brief acknowledgments.
- k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

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The full postal address of any related author(s) must be specified.

Abstract

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

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A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in a research paper?" Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

Numerical Methods

Numerical methods used should be transparent and, where appropriate, supported by references.

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Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

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Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

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Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.



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Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

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TIPS FOR WRITING A GOOD QUALITY MANAGEMENT RESEARCH PAPER

Techniques for writing a good quality management and business research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.



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7. Revise what you wrote: When you write anything, always read it, summarize it, and then finalize it.

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10. Use proper verb tense: Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. Pick a good study spot: Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. Know what you know: Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. Use good grammar: Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice. Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. Arrangement of information: Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. Never start at the last minute: Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. Multitasking in research is not good: Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. Never copy others' work: Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. Go to seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

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22. Report concluded results: Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. Upon conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium through which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

INFORMAL GUIDELINES OF RESEARCH PAPER WRITING

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

Final points:

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

The introduction: This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

The discussion section:

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

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Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear: Adhere to recommended page limits.

Mistakes to avoid:

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- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.



- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
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Title page:

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

Abstract: This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

Approach:

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
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Introduction:

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.



Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

Materials may be reported in part of a section or else they may be recognized along with your measures.

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.



Content:

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.



Approach:

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

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	A-B	C-D	E-F
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<i>Introduction</i>	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
<i>Methods and Procedures</i>	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
<i>Result</i>	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
<i>Discussion</i>	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
<i>References</i>	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring



INDEX

A

Ambidexterity · 3
Anpountolas' · 11
Assumption · 4, 18

C

Coherent · 5
Criterion · 11, 25

E

Entails · 1, 4, 15

F

Flatter · 23

H

Harmonious · 5
Heteroskedasticity · 27
Hyperplane · 10

I

Insurgency · 21

K

Kurtosis · 24, 27

M

Manifestations · 2

P

Persuade · 6

R

Rammerstorfer · 18, 19
Recursive · 27

S

Seminal · 10, 11
Stagflation · 21

T

Tangible · 2
Theoretical · 22, 23, 28

V

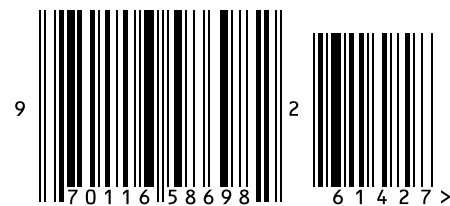
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