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# Amplifying the Importance of Synchronic-Diachronic Approaches in Social Sciences Research: Unleashing the Power of this Technique for Better Sociocultural Analysis

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**Abstract: The core and the central objective of this paper is to amplify and emphasize the importance of synchronic-diachronic approach to research, and establish it as a core and a central tenet is sociology and in social and cultural anthropology with a large number of potential downstream uses and applications. We begin this paper by defining the meanings of the terms synchronic, diachronic and synchronic-diachronic, and then proceed to speculate how these concepts may be applied in the real-world. Next, we review our papers on the symbiotic approaches to sociocultural change, and diachronic extensions of it, and explain how the concepts enshrined therein may have a bearing on our paper. We also then proceed by presenting a large number of different examples or use cases, to bring out the various nuances and intricacies of our approach. Various statistical concepts such as experimental research design, quasi-experimental research design, randomized control trials, independent and dependant variables, time series analysis, trend analysis, exponential smoothing, time series analysis, ANOVA analysis, panel study, cohort study, longitudinal analysis, cross-sectional analysis, and normal distributions, are also explored, and their implications for our paper assessed and clearly brought out. We then do hope, expect, and anticipate, that this paper will eventually become a crucial component of twenty-first century social science research.**

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## I. INTRODUCTION

*The social sciences, I thought, needed the same kind of rigor and the same mathematical underpinnings that had made the 'hard' sciences so brilliantly successful – Herbert A. Simon*

*It's not rocket science. It's social science – the science of understanding people's needs and their unique relationship with art, literature, history, music, work, philosophy, community, technology and psychology. The act of design is structuring and creating that balance - Clement Mok*

The core and the central objective of this paper is to amplify and emphasize the importance of synchronic-diachronic approach to research, and establish it as a core and a central tenet is sociology and in social and cultural anthropology with a large number of potential downstream uses and applications. We begin this paper by defining the meanings of the terms synchronic, diachronic and synchronic-diachronic as they are currently or presently used or applied, and then proceed to speculate how these concepts may be applied in the real-world. Next, we review our papers on the symbiotic approaches to sociocultural change, and diachronic extensions of it, and explain how the concepts enshrined therein may have a bearing on our paper. We also then proceed by presenting a large number of different examples or use cases, to bring out the various nuances and intricacies of our approach. Various statistical concepts such as experimental research design, quasi-experimental research design, randomized control trials, independent and dependant variables, time series analysis, trend analysis, exponential smoothing, time series analysis, longitudinal study, cross-sectional study, panel study, cohort study, ANOVA analysis and normal distributions, are also explored, and their implications for our paper assessed and clearly brought out. We then do hope, expect, and anticipate, that this paper will eventually become a crucial component of twenty-first century social science research with immense ramifications across the intellectual and cultural spectrum.

## II. WHAT ARE SYNCHRONIC AND DIACHRONIC APPROACHES?

Let us now delve or take a deep dive into the "Synchronic versus diachronic" debate – let us now also attempt to take a deep dive into the history of the term, in such a way that its nuances and intricacies are brought out, along with its immense benefits for linguistics and other fields of

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science and scholarly study, besides possible extensions for other fields of the social sciences, and non-social sciences. To put it in a nutshell, the concepts were first proposed and comprehensively theorized by the Swiss linguist professor and eminent scholar Ferdinand de Saussure, who was professor of general linguistics in Geneva between the years 1896 and 1911, and most of his concepts had been crystallized and concretized by the early 1920's based on some earlier work by the German philologist Georg Curtius and others. Also, the Darwinian linguists August Schleicher and Max Muller saw languages are ever-evolving organisms – this approach and belief would naturally form the bedrock of our Synchronic-Diachronic approach, even though Ferdinand de Saussure rejected this notion more or less completely. This is a classic example of the notion of personal opinions without adequate validation or ratification. Furthermore, the rigid separation of synchronic and diachronic approaches was vehemently and categorically rejected structural linguists such as Roman Jakobson and Andre Martinet, who saw them as two sides of the same coin. Much later, in the year 1970, the Moldova-born linguist Eugenio Coseriu, revisited De Saussure's synchrony and diachrony distinction in a linguistic sense, and even coined new terminologies namely diatopic, diastratic and diaphasic to describe linguistic variation. In this case, diatopic refers to geographical variations which is essentially synchronic, diastratic means variation on the basis of social or cultural (or even class) background, and is represented by aspects such as basilect, mesolect, and acrolect, and diaphasic which means variation based on the context of usage, such as formality.

The term "Synchronic" actually refers to occurring or existing at a given same point in time or relating to something, without taking into consideration its historical antecedents or development, or evolution throughout history. A related term is synchronous (adverb, synchronously; noun, synchronism) which means existing or happening at the same point in time. What then are diachronic approaches? Diachronic approaches are those approaches that are primarily concerned with the way in which something has developed and evolved through time. This term has been traditionally been used in the context of the study of language, though this may not always necessarily be the case; it can be extended to cover multiple other contexts and situations too. Synchronic was also a 2019 science fiction movie that is loosely based on the concept of synchronism; this is of course largely irrelevant from the point of view of this paper. [1] [2] [3] [4] [5]

What then are synchronic-diachronic approaches? Synchronic-diachronic approaches are those approaches which adopt a combination of synchronic and diachronic approaches for maximal effect and for maximal impact. The order would by and large be irrelevant here, and for our purposes, though we generally believe synchronic approaches would be adopted first, then followed ultimately by diachronic approaches. This is of course by no means be a hard and a fast rule, and the ordering would largely depend on the context of the analysis or situation, and the merits of the cases. We much eschew dogma and rigidity of thought and thinking, while at the same time adopting dynamic and creative approaches. Of course discipline, rigour, precision, balance and accuracy must always be maintained ultimately, and this would prove to be the acid test of creativity. [6] [7] [8] [9] [10] [11] [12] [13] [14]

[1] Greenberg, Joseph. 1979. Rethinking Linguistics Diachronically, *Language* Vol. 55, No. 2 (Jun., 1979), pp. 275-290

[2] Hammarström, Göran. 1982. Diachrony in Synchrony in (eds.) Maher, Bornhard and Koerner, *Papers from the 3rd international Conference on Historical Linguistics*. John Benjamins

[3] Akmajian, Adrian; Demers, Richard; Farmer, Ann; Harnish, Robert (2010). *Linguistics: An Introduction to Language and Communication*. Cambridge, MA: The MIT Press

[4] *Aronoff, Mark; Rees-Miller, Janie, eds. (2000). The handbook of linguistics. Oxford: Blackwell.*

[5] Hall, Christopher (2005). *An Introduction to Language and Linguistics: Breaking the Language Spell*. Routledge

[6] Differentiating strong data and evidence from weak data and evidence: Another heuristic for use in general and social sciences research Sujay Rao Mandavilli Published in IJISRT, June 2025

[7] Towards 360 degree approaches to hypothesis formulation and evaluation: Another epochal milestone in twenty-first century science Sujay Rao Mandavilli Published in IJISRT, July 2025

[8] Towards "Thick analysis" of statements, propositions and assertions: Compendious evaluations with immense benefits in research Sujay Rao Mandavilli Published in SSRN, July 2025, IJISRT, July 2025 and elsewhere

[9] Unveiling the Sociological Ninety-ten rules for Social Sciences research: Towards better hypothesis formulation in the Social Sciences in the interests of higher quality research and intellectual multi-polarity Sujay Rao Mandavilli Published in IJISRT, February 2023

[10] Elucidating the Certainty uncertainty principle for the Social Sciences: Guidelines for hypothesis formulation in the Social Sciences for enhanced objectivity and intellectual multi-polarity Sujay Rao Mandavilli IJISRT, March 2023

[11] Articulating comprehensive frameworks on socio-cultural change: Perceptions of social and cultural change in contemporary Twenty-first century Anthropology from a 'Neo-centrist' perspective Published in ELK Asia Pacific Journal of Social Sciences Volume 3, Number 4 (July 2017 – September 2017) Sujay Rao Mandavilli

[12] The relevance of Culture and Personality Studies, National Character Studies, Cultural Determinism and Cultural Diffusion in Twenty-first Century Anthropology: As assessment of their compatibility with Symbiotic models of Socio-cultural change ELK Asia Pacific Journal of Social Science Volume 4, Issue 2, 2018 Sujay Rao Mandavilli

[13] Expounding the concepts of socio-cultural advantage, and cultural and anthropological equilibrium: More core concepts in Anthropological economics Sujay Rao Mandavilli Published in SSRN, May 2025

[14] Advocating output criteria based scientific and research methodologies: Why the reliability of scientific and research

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## III. SYMBIOTIC APPROACHES TO SOCIOCULTURAL CHANGE

We had proposed the symbiotic approach to sociocultural change in two papers, namely "Articulating comprehensive frameworks on socio-cultural change: Perceptions of social and cultural change in contemporary Twenty-first century Anthropology from a 'Neo-centrist' perspective" which was published in ELK Asia Pacific Journal of Social Sciences Volume 3, Number 4 (July 2017 – September 2017) and "The relevance of Culture and Personality Studies, National Character Studies, Cultural Determinism and Cultural Diffusion in Twenty-first Century Anthropology: As assessment of their compatibility with Symbiotic models of Socio-cultural change" published in ELK Asia Pacific Journal of Social Science Volume 4, Issue 2, 2018. These papers have also been suitably referenced in this paper as a footnote. We had also referred to this approach as the "Proactive-interactive-symbiotic approach to long-term cultural change", and we had also reviewed older theories of sociocultural change in this paper, and had proposed that these be overridden.

In the aforesaid papers, we had also discussed the introduction of changes by means of stimuli such as government intervention, internally generated change, intervention by third parties, and collaborative and participative approaches, etc. we had also proposed a hierarchy including parent cultures, subcultures, subcategories or subclasses, and then or to components and attributes, etc. we also spoke about the ten different enablers to sociocultural change, and spoke about the different types of cultural systems such as dominant and influential cultures and cultural systems, non-dominant cultures and cultural systems, etc. We also then described the process of cultural symbiosis by describing impacting factors and absorbing factors. In a later paper, we also gave a diachronic twist to the above concepts. The name of the paper was "Attempting diachronic extensions of symbiotic approaches to socio-cultural change: Developing techniques to assess socio-cultural changes over a period in time. The last paper was published in 2023. As such, we request readers to go through these papers as they would make a useful read before grasping the essentials of this paper. [15]

## IV. EXAMPLES OF SYNCHRONIC-DIACHRONIC APPROACH TO RESEARCH ANALYSIS

We now present a large number of suitably categorized, classified, and annotated examples of synchronic-diachronic approach to sociacultural analysis, and non sociocultural analysis, and analysis that can be suitably and meaningfully incorporated and used in other avenues and vistas of social sciences research with multiple benefits and applications. While we believe that the examples presented below are suitably diverse and all-encompassing, many more examples could present themselves with the passage of time, and quite literally, the sky is the limit. For example, we could even extend this to include an analysis of more nuanced and oblique concepts such an analysis of whether Hindi will even replace English in India. This must of course be corroborated with multiple data points, besides plain common sense. Let us now begin with the first example below, and then proceed to other examples. [16] [17]

- *Example A: Changes in IQ Scores Across Multiple Groups and Relative Assessment*

The twin and closely inter-related terms namely intelligence and intelligence quotient are widely used and misused in today's world. We had attempted to put these two terms in their proper context and perspective in a previously published paper of ours, and we will again attempt to extend upon our understanding here. What exactly is an Intelligence quotient here, we may ask. The term is over one hundred years old, and dates to the dawn of the twentieth century. An intelligence quotient (also abbreviated and known as IQ in short) is a total score computed from a standardized set of formally administered tests that are designed to assess human intelligence and cognitive ability. Such tests have matured with age, and currently a more complex set of parameters are used, and normal distributions are even often used. Therefore, multiple histograms and frequency polygons may be used in this case, representing a temporal or a time series analysis.

Intelligence quotient tests are also far from perfect, though improving, and we had reviewed many of these tests, and rather exhaustively so, previously. We also have for example fluid and crystallized tests, and there is sometimes a propensity to confuse or mix up intelligence and cognitive ability (both can be notoriously hard to define and pinpoint with any level and degree of precision), and systematically or subconsciously acquired knowledge. We also have what is known as the Flynn effect, which refers to the general increase in standardized IQ scores, which have been observed to increase due to factors such as better and improved nutrition. Some other aspects such as better enculturation and educational attainments, may also potentially cause increases or spikes, but that should not be the case; the last two factors should not, and cannot impact native intelligence scores. We may also plot IQ scores of a population – or a subset of a population drawn as a sample from a sampling frame- and then draw a normal distribution. This may be done at frequent intervals, and snapshots may be obtained.

methods must be measured based on output criteria and attributes Sujay Rao Mandavilli IJISRT, August 2023

[15] Attempting Diachronic extensions of symbiotic approaches to socio-cultural change: Developing techniques to assess socio-cultural changes over a period in time Sujay Rao Mandavilli IJISRT, September 2023

[16] Talja, Sanna and Pamela J. Mckenzie (2007). Editor's Introduction: Special Issue on Discursive Approaches to Information Seeking in Context, The University of Chicago Press

[17] Cohen, N.; Arieli, T. (2011). "Field research in conflict environments: Methodological challenges and snowball sampling". *Journal of Peace Research*. **48** (4): 423–436

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We may also measure parameters such as mean, median, mode, variance, standard deviation, skewness and kurtosis, and plot changes to them over time. A root cause analysis or a cause and effect analysis may also be performed, and if possible future trends may be predicted. The next logical and sequential step would to perform a cross-cultural analysis, and identify parameters across cultures. For this, we may also use apposite statistical techniques such box plot and whisker diagrams, or decile, quartile and quintile analysis, and discard egregious, disingenuous and infructuous approaches. Research design must be compact, yet powerful at all times, and cultural and cross-cultural biases must be jettisoned. Cross-cultural comparisons (along with a study of unidirectional, bidirectional and multidirectional cross-cultural influences) must also be understood and the causes thereof must be isolated, if they exist. This will amplify the power of research to an altogether different level. As an example, we may cite a case where genetically modified crops – a controversial concept, indeed – may have a universal impact, or an impact across multiple cultures. [18] [19] [20]

- *Example B: Changes in Education Levels Among Individuals in a Sociocultural Group and Relative Assessment*

We may also wish to evaluate changes in education levels among individuals in a sociocultural group and perform a relative assessment across individuals in the group. We may also then wish to evaluate Changes in education levels among individuals across sociocultural groups and relative assessments. Educational levels may include no literacy, primary level of education, secondary level of education, higher secondary level of education, graduation, post-graduation and doctorate. We may also wish to gather, and evaluate statistics for males and females separately, and this would constitute a more complex analysis. We might also want to compute how awareness spreads about the importance of education both within and across groups, and this would constitute an important kind of an analysis – for this, either statistical or qualitative techniques may be employed. Education levels in this case constitute categorical data. Categorical data, which is also known as qualitative data, represents characteristics or qualities that can be conveniently grouped into meaningful categories instead of being measured numerically. Such categorization may be either nominal (i.e. no meaningful order, such as colors or names of fruit) or ordinal (with a meaningful and a hierarchical order, such as educational levels or educational qualification). Furthermore, trend analysis and time series analysis may be performed, along with correlation analysis.

- *Example C: Changes in Earning Levels Among Individuals in a Sociocultural Group and Relative Assessment*

We may also wish to measure changes in earning levels among individuals in a sociocultural group over time and perform and carry out a relative assessment. We can add a twist here, and correlate with educational backgrounds of people who are participating in the survey or study, and measure variations based on gender. We can also perform an analysis based on age, and sub-community. For this histograms and frequency polygons may be used. Slice and dice analyses may also be performed, and the standard deviation computed. Correlation analysis may also be performed by way of suitably drawn scatter diagram. A normal distribution may also be prepared as a static analysis. Changes to variables may also be assessed over a period in time, and causes of variations understood. This study may also be extrapolated to cover changes in earning levels among individuals across sociocultural groups and relative assessment.

- *Example D: Changes in Consumption Patterns of Tea Across Countries*

This is a rather simple case and analysis must be performed across cultures, and across a period in time. However, there may or may not be correlation or causation here, and this must be suitably identified using statistical techniques. If there is a correlation, how is that correlation caused? Is it because of international advertisements, better cross-cultural marketing, or simply awareness about the benefits of drinking tea? What role did the internet play here? Is it even possible to isolate the effect or the internet here, and if so, how do we go about doing it?

- *Example E: Changes in per Capita Automobile Ownership Across Societies*

We may also wish to evaluate changes in per capita automobile ownership across societies. What role does technology play here? What role does awareness play here? What role do notions of utility play here? What role do notions of indispensability play here? How does automobile ownership spread? It is primarily top to bottom, or is it predominantly spatial? Do new technologies such as electric car technologies play a role in mass adoption of automobiles? Or do they put off people? (The latter is extremely likely, but may be investigated nonetheless). What is the correlation between cost of ownership and mass adoption of automobiles? How does culture react to automobile adoption? How does a culture adopt and adjust to automobile adoption over time? How does this impact other cultures? What quantification techniques can be adopted in this regard?

[18] Flynn, James R. (2012). *Are We Getting Smarter? Rising IQ in the Twenty-First Century*. Cambridge: Cambridge University Press

[19] Hopkins, Kenneth D.; Stanley, Julian C. (1981). *Educational and Psychological Measurement and Evaluation* (6th ed.). Engelwood Cliffs, NJ

[20] Flanagan, Dawn P.; Harrison, Patti L., eds. (2012). *Contemporary Intellectual Assessment: Theories, tests, and issues* (3rd ed.). New York

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- *Example F: Are Students Becoming more Studious and Disciplined all Across the World? Can we Analyze Data over a Fifty Year Period to Prove or Disprove this?*

Let us now attempt to answer the question: Are students becoming more studious and disciplined all across the world? Can we analyze data over a fifty year period to prove or disprove this? Quantification is tricky here, and may be prone to errors. Yet, how do we do it, if we can indeed do it? Are educational levels and educational attainments alone a yardstick? What are the potential errors and risks involved here, and how do we address them? How does cultural rivalry change trends? Which cultures are isolated and immune to global trends? What are the root causes of such an isolation, and how can they be overcome? We may also have qualitative research with potential for indirect quantification: For example, we may wish to study the improvement in quality of human resources in different countries over time, and the underlying causes thereof.

- *Example G: Changes in Fashion Trends in Different Parts of the World over Time*

In another scenario, we may wish to ascertain changes in fashion trends in different parts of the world over time. This is a purely qualitative analysis, and no quantification techniques are possible or permissible here. However, analysis must be performed carefully and cautiously, and no errors may be permissible. Data analysis must still be performed, and data must still be gathered systematically and meticulously.

- *Example H: Comparative Trends in Total Fertility Rates Across Indian States*

In yet another interesting twist, we may wish to analyze comparative trends in total fertility rates across Indian states. This is something which has been hogging the limelight lately, and has multiple ramifications for the long-term survivability of societies across the globe. We must also identify lad and laggard states here. We must also identify outliers here. We must perform a root cause analysis here, and identify causes for change or non-change, and performance or non-performance. We may categorize causes into cultural factors or non-cultural factors, economic factors, or non-economic factors, governmental factors or non-governmental factors, etc Thus, a multi-layered causation and a multi-layered investigative analysis is possible here. We may also wish to probe cross-cultural dissemination of information, and barriers to cross-cultural dissemination of information here. We may also wish to identify changes to patterns and trends over time, and the causes for such a change. Likewise, we may wish to identify the correlation between poverty rates and total fertility rates, and parents' educational attainments or occupational patterns and total fertility rates too. A multi-dimensional analysis is possible too, across time, and across cultures. We may also pursue quantitative research with further secondary or tertiary downstream analysis or indirect causation: For example, we may investigate comparative trends in total fertility rates across Indian states over a period with implications for rural-urban migration. [21]

- *Example I: Complex Analysis*

We may also wish to perform more complex analyses: for example, we may compute number of people with different numbers of children (For example, 0, 1,2,3 children) and changes to these numbers across cultures over a period in time, and comparison with the global population. We may also perform an analysis of variations of global trends, national trends, and trends within a sociocultural group, or a socioeconomic group in tandem. We may also wish to study, probe or investigate how trends cross influence each other, and why they do so. We may also want to pursue an extremely long-term analysis or a thick analysis; for example, the long-term consequences of population growth, and its impact on other species.

- *Example J: Pattern Identification*

Data patterns refer to recurring sequences, structures, or complex inter-relationships within sets of data, and Identifying, analyzing and further understanding such patterns may be more crucial and critical for various types of analysis and data modeling activities, such as prediction, anomaly or outlier detection and identification, further root cause analysis, and knowledge discovery. Such patterns may be temporal, spatial, or both. The third category is critical from our perspective. All the above examples can be used for pattern identification, and of course, there could be many more too. Additionally, we may wish to trace learning outcomes to cultural phenomena, and cultural traits perform a complex, multidimensional analysis between all these. We may also wish to ascertain the changes to such interconnections over time, and the underlying or hidden causes behind such changes. [22]

## V. COMBINATION WITH STATISTICAL AND MATHEMATICAL TECHNIQUES

We must also perform every analysis in combination with statistical and mathematical techniques, and in this context, many different concepts must be performed. To begin with, what are variables? A variable is a factor whose value changes within the context of a problem – or a factor which may take on multiple values within a change or across changes. Variables may be primarily classified into independent variables, dependant variables, and intervening variables. Variables must be initialized correctly, and the relationships between variables defined in clear and unequivocal terms. Quantification techniques may be used in the social sciences are necessary, and correlation analysis, and regression analysis performed. We may use standard techniques for this purpose such as scatter diagram. We may have many different scenarios here; for example, variables

[21] How Fertility Changes Across Immigrant Generations." *Research Brief #58,* Public Policy Institute of California, 2002

[22] Kulikowski, Casimir A.; Weiss, Sholom M. (1991). *Computer Systems That Learn: Classification and Prediction Methods from Statistics, Neural Nets, Machine Learning, and Expert Systems*. San Francisco: Morgan Kaufmann Publishers

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may influence each other significantly, variables may not influence each other significantly, there may be absolutely no correlation between variables, variables may influence each other unidirectionally, variables may influence each other bidirectionally, variables may influence each other multidirectionally. In some cases, there may be an inverse relationship. There may be either a proportional or a non-proportional variation.

Both mathematical and statistical techniques may be used, and standard data collection methods must be employed. Proper sampling techniques may be used, and these may include probabilistic and non-probabilistic techniques. We have sampling techniques such as simple random sampling, cluster sampling stratified sampling, snowball or referral sampling etc. We have discussed all these multiple times already. The proper sample size must be used, and the sample size must be representative of the population or the sampling frame. Both sampling errors and non-sampling errors must be avoided. Both qualitative and quantitative techniques may be used in research or a combination of the two which constitutes mixed methods research. We believe that research techniques and methods in the social sciences must be primarily qualitative, though statistical techniques may be used as required. We would like to refer to this as a quasi-statistical approach. Also, statistical data must be corroborate not only by multiple lines of evidence, but by simple, and plain common sense. As the popular adage goes, there are only three lies in the world: lies, damned lies, and statistics!

We may also use longitudinal studies, cross-sectional studies, panel studies, cohort studies, and time series analysis as required. We may also use experimental research design or randomized control groups with control groups and experimental groups. We may also use quasi-experimental research design, before and after experiment test, post-facto design test, placebo, or multiple control groups as required. We may also use ANOVA analysis – to analyze differences in means between and across samples, and may use t tests and z tests as well. We may make use of temporal data, spatial data or what we may call motion data. While the idea of motion data has a completely different meaning elsewhere – it typically captures motion data – the idea of motion data is unique and different from our perspective because we are more concerned with graduated and finely differentiated changes in variables (along with changes in direction, and the complex correlation between changes) – we may refer to this as the "Dance of the variables" – albeit from a humorous perspective. We may also make use of normal distributions, root cause analysis – a study of either with or without root cause analysis and causation is permissible – we also discussed the multiple concepts of statistical laws and causal laws previously along with probabilistic causation. An investigative analysis must always be performed, and we may have univariate analysis, bivariate analysis, and multivariate analysis. Lead indicators and lag indicators may also be identified as necessary, and we must make use of the comparative method in social sciences, while always keeping in mind the principle of cultural relativism. Other types of analysis such as exponential smoothing, goodness of fit, and the least squares method may also be used.

## VI. CONCLUSION

The core and the central objective of this paper was to amplify and emphasize the importance of synchronic-diachronic approach to research, and establish it as a core and a central tenet is sociology and in social and cultural anthropology with a large number of potential downstream uses and applications. We naturally and logically began this paper by defining the meanings of the terms synchronic, diachronic and synchronic-diachronic, and then proceeded to speculate how these concepts may be applied in the real-world. Next, we reviewed our papers on the symbiotic approaches to sociocultural change, and diachronic extensions of it, and suitably explained and enunciated how the concepts enshrined therein could have had a bearing on our paper. We also then proceeded by presenting a large number of different examples or use cases, to bring out the various nuances and intricacies of our approach. Various statistical concepts such as experimental research design, quasi-experimental research design, randomized control trials, independent and dependant variables, time series analysis, trend analysis, exponential smoothing, time series analysis, ANOVA analysis, panel study, cohort study, longitudinal analysis, cross-sectional analysis, and normal distributions, were also explored, and their implications for our paper assessed and clearly brought out. We then do hope, expect, and anticipate, that this paper will eventually become a crucial component of twenty-first century social science research, and many potential implications for research.