

**POSITIONING VIRTUAL TRACE APPROACH AS A  
QUALITATIVE METHODOLOGY IN ENTREPRENEURSHIP  
RESEARCH: AN INNOVATIVE APPROACH**

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**Abstract**

This paper reflects on the potential of Virtual Trace Approach (VTA) to provide new perspective into qualitative methodology in entrepreneurship research. The objective is to present another dimension to the existing strategies in carrying out entrepreneurship research and to discuss how VTA technique may be used as a qualitative methodology in entrepreneurship research. A description of searching under trace approach is provided in four phases namely: (1) selection of investigated event, case or phenomenon. (2) Strategy for data collection. (3) Data preparation processes. (4) Data analysis. In this study, data analysis capitalized on a research carried out on the Nigerian Government COVID-19 Survival Fund by presenting the likely contribution it will have on entrepreneurial research. It is concluded that VTA can be used within an entrepreneurial research context. Whilst, recommending that Virtual Trace Approach (VTA) should be implicitly deployed together with other qualitative research methodology in various fields of entrepreneurial research where complex information with wide coverage is required, most especially in this contemporary time.

**Keywords:** *Virtual Trace Approach, Physical Trace Approach, Entrepreneurship, Qualitative Research.*

## **1. Introduction**

At the peak of COVID-19 pandemic, between August 2020 and April, 2021, a research was carried out on Swift Access to the Nigerian Government COVID-19 Survival Fund, with emphasis on payroll support using Virtual Trace Approach (VTA) for qualitative data collection by Shitu, 2021. It was an interesting study that made the researcher passed through the challenge of exploring a new methodological approach in the field of entrepreneurship. Perrini (2006) asserted that close-up insights are needed if we want to access what actually happens and matters within the entrepreneurial settings. Going by the fact that Virtual Trace Approach (VTA) has not been given adequate attention in entrepreneurship research, it is important to note that it is grounded on technological premise, as it has been touted to be 'a non-verbal approach' unlike the Physical Trace Approach (PTA). Research revealed that many entrepreneurship related studies with unrequited enquiries and many unanswered arguments have since been neglected due to thick data requirements (Naargaard & Ulhoi, 2007).

Undeniably, due to its complex nature, it is difficult to position it into many fields in the social sciences. That is not to say that it will not fit into fields outside science and technology. The categories of fields that can explore this approach include art and religious studies, management sciences and education. However, drawing from the work of Lambert (2017) this paper considers the Virtual Trace Approach (VTA) as an alternative to Physical Trace Approach (PTA) where the internet and its associated components can be major contributors in facilitating theory development by researchers whilst solving real-world research problems (Lambert, 2017). As research advances, the general notion is that most research tools can be tested virtually since application of analytical tools is more workable with the use of the internet. Interestingly, it is a research tool that can be usable in entrepreneurial research to bring about entrepreneurial innovations and social change.

The application of Virtual Trace Approach is explicitly different from physical trace approach as well as other types of qualitative methodology due to the fact that it is grounded on the premise of internet and technology i.e. it is done virtually and it does not really require physical presence (Lambert, 2017). Not so many researchers have delved into the use of Virtual Trace Approach in studying entrepreneurship research but some many have provided their views

on how to conduct trace research in clinical studies, library, information and communication research (Latzko-Toth & Bonneau, 2017; Lambert, 2017). In this study, the description of what Virtual Trace Approach entails will be aligned with the description provided by Lambert (2017). With excerpts from the guideline provided by Latzko-Toth and Bonneau (2017), the researchers are of the view that before the Virtual Trace Approach came into use by researchers, the Physical Trace Approach (PTA) had been used among communication, library and information researchers. However, due to the incongruent differences in PTA and VTA and the varied choices of other qualitative approaches to entrepreneurial research, the prevailing viewpoints of this innovative approach would allow collection of huge qualitative data, ranging from demographic data, processes, interactions, transactions, connections, narrations and exchanges. This is factual in the field of entrepreneurship.

## **2. The Concept of Virtual Trace Approach**

In the last one decade as information technology began to follow a new dimension, the use of internet, particularly social media have shown a clear proposition that researchers in all fields of management sciences are given liberty to explore mass information and collect data through the use of electronic and virtual enablers such as World Wide Web for research purposes. This is so pragmatic for the purpose of juxtaposing both theoretical and practical knowledge to enable researchers to come up with result-oriented outcomes that would enable facilitation of smart decisions within the confines of the academia and professional sphere (Kelly & Cordeiro, 2020). One field of study which is likely to benefit from the use of the internet for data collection is Entrepreneurship, this is because extensive entrepreneurial information is available on the World Wide Web especially platforms grouped as social media (Tiago & Verissimo, 2014; Dana & Sclamzadel, 2021). Although there is the impending possibility that ominous inspirations might abuse such data emanating from the internet in manners that may leave people feeling somewhat apprehensive and insecure, haven observed that, it is very pertinent to also explore the worthiness of the kind of information that may come from investigating entrepreneurial competencies and propensities in an online environment (Shazad et al., 2021).

Virtual trace data collection methods such as Web analytics might be labelled as a Cyber metric data collection technique. Antonakaki et al., (2021) suggest that Web analytics, or likewise referred to as web traffic tool, might lie within the Cyber metric sphere. The usefulness of data collection and serves as a mediator between how human and non-human actors and the virtual means of interaction makes it important that data collected possibly will include intercession skills which is an important part of entrepreneurship studies. It is important to note that the analysis of elements related to inquiring and searching on the World Wide Web might be apt for qualitative research approaches such as Virtual Trace Approach (VTA) within the procedural context of Cyber metrics. The dependence on rate of occurrences of themes generated to assist in the analysis of virtual data traces of human and non-human actor's activities on Web pages (Golf-Papez & Veer, 2022; Schops et al., 2022). it is apparent in both route-finding blog studies and research of blogs that shows data explorers inquiries are conveyed through the search engines by submitting search terms.

However, VTA also has important advantages. For instance, it can let slip and disclose real-life and imaginary comportment and state of mind of the internet users (Lambert, 2017). It allows academics to enhance their understanding of Web page and the package the Web page provides in terms of quality. Not only these, it can also be used to boost the efficiency of data services and information (Schops et al., 2022). Though, bearing in mind that the most important components of analysis in Web analytics is quite different from what is obtained within the context of physical trace approach and it is for this reason that the virtual trace approach has become well-regarded especially in the era of COVID-19 (O'Connor et al., 2020).

### **3. An Overview of Physical Trace Approach (PTA)**

Giving credence to the work of Webb et al., (1999) a retracing of how research that involves reactive data collection approach was affecting outcome of research for the fact that “the research participant is stereotypically aware of being observed”. Because of these, Webb et al (1999) recommended that researchers think through the idea of changing the choice of the data variables and their pointers to decide their relevant research questions. This could be achieved through the use of data collection approaches that do not comprise any sort of interface with human research subjects but rather with non-human

instruments such as variable management typical in experimental research design (Lambert, 2017) measuring survey through a form of uninterrupted or unplanned questioning, or observation of the behavior of human beings within the confines of the natural environment through diverse levels of communication, collaboration and/or involvement in research study.

More so, there is a need for researchers to ponder on engaging in inconspicuous research as a way of studying entrepreneurial possibilities in relation to social behaviour so that it does not influence unfairness or have consequences on the social phenomenon under investigation (Wickert et al., 2021; Bacq et al., 2022). Just like other research methodologies, physical trace is not free from shortcomings. One such hindrances are in the aspect of ethical consideration in research, also discriminatory pattern and selective scrutinizing, of research topics that is applicable to other methods such as archival research.

An extensive range of theoretical frameworks, methodologies, and analytical modus operandi within the qualitative research arena have been Physical Trace Approach in nature (Hakala et al., 2020). Dwivedi et al., (2021) pointed out a major viewpoint relating to social sciences, encompassing a very broad and complementary research perspectives. Central to the importance of VTA as a qualitative research methodology is the recognition of the importance of internet in human capital development research such as that of entrepreneurship. The key postulation is that the analysis of themes on online platforms lets the researcher understand other people's reasoning representations. At its most uncomplicated, theme frequencies on world wide web has been measured to be a gauge of analytical centrality or standing. Scholars also have presumed that the transformation in the use of online themes reflects at least a modification in responsiveness of research, if not in physical trace approach (Cyron, 2022).

In addition, thematic analysis accepts that groups of online postings reveal underlying contents useful for analysis, and that, for example, co-occurrences of themes can be construed as replicating relationship flanked by the fundamental concepts in the research. Thematic analysis in this context, supporters have distinguished quite a lot of advantages of this type of methodology and analytical methods above contending sets. Primary to entrepreneurial research, thematic analysis makes available a replicable

procedure to access policies of government in relation to benefits such as in the case of COVID-19. Because of this, thematic analysis fits in both physical trace approach and virtual trace approach methodologies which is applicable to a comprehensive range of social phenomena. For instance, its applications in management of global pandemic, natural disasters, poverty and unemployment (Palinkas et al., 2021).

#### **4. Virtual Trace Data Collection Methods**

Virtual Trace Approach collection is a specific method of searching and collecting qualitative data using online participant's perception. Tracing usually respects sketching and searching method instead of the conventional linear approach to enquiry. The hodge-podge of collecting qualitative data online is an extremely new phenomenon as well as a somewhat an ongoing one. The beginning of VTA as a research methodology has been credited to Lambert (2017). In any case, it was the innovation social media applications in the long time following the need for networking and virtual interconnections that prompted the advancement of current Virtual Trace Approach assortment. The formation of groups and clusters at the glance of business opportunities also promoted Virtual Trace Approach as that is seen as a significant strategy for gathering significant verifiable information. The description of how qualitative data is collected using VTA is described in the following phases:

##### **Phase I: Selection of Investigated Event, Case or Phenomenon.**

In the tested phenomenon during the early stage of COVID-19 pandemic, the new-normal was for interactions and relationships to be done virtually, this by implication suggests that all stakeholders must be conversant or must have subscribed to various online platforms for interaction. In the case of the Nigerian Government COVID-19 Survival Fund, payroll support for instance, research investigations focused on various inter-related groups formed on Facebook, such as, National Association of Survival Fund CEOs, Survival Fund and SMEDAN Information Group, Official MSME Survival Fund-NYIF-NIRSAL Micro-Finance Bank Loan, The Survival Fund (Discussion, Information, share Ideas), NIRSAL Related Question, Survival Fund Official Group and lastly Survival Fund/Nigeria Youth Investment Fund Info HQ were adequately utilized. The logic behind selecting these six Facebook groups was to generate a vast understanding of the phenomenon under investigation. On

these platforms people talked and responded to discussions based on their thoughts and the opportunities at their disposal.

Unlike the Physical Trace Approach (PTA) where a researcher and the respondent need to see one-on-one. Note that, very sensitive topics can be widely discussed whilst using VTA as the researchers may use total covert method. It is less time consuming, and the researcher may choose to work at his/her own sequence without having to keep appointments or time schedule unlike what is obtained during interviews and observation of a phenomenon. One major disadvantage of the selection process is the likelihood of being biased as a researcher. Also due to lack of strict government regulations in participation on social media, the issue of privacy and disclosure of identity is not really a thing of confidentiality (Shitu, 2021).

### **Phase II: Strategy for Data Collection**

After selection of investigated event, case or phenomenon, the next step is deploying and implementing the strategies for qualitative data collection (Cassell et al., 2006). Here, it is important to put some certain concerns into consideration due to the nature of the source of data which would emanate virtually without physical contact or communication.

Firstly, it is important to consider the authenticity of the online group where data is sourced for instance there are some groups created online by fraudsters or scammers to deceive subscribers. Secondly, what online platform is the information coming from i.e. Facebook, Instagram, LinkedIn, Twitter etc. Lastly there is a need to consider the temporality of time in which the information was sent online this is because some information come base on speculations and the poster may decide to delete or keep the post even when it is not certain that the information is the correct one, some come instantaneously at the immediate time while other information are shared at the time it is not really required.

### **Phase III: Data Preparation Process**

The real preparation process comes before analysis where all qualitative data extracted from the online platform would be stored in a particular folder but with various reference codes. After doing that there is a need to consider which computer-assisted qualitative data analysis systems (CAQDAS) should be used, for instance, it could either be NVIVO or Atlas.ti. Usually this comes

from the decision of the researcher for some certain reasons for instance cost effectiveness, availability of software and the nature of data collected. There are a lot of benefits that come with the use of computer-assisted qualitative data analysis systems. Unlike the manual system, the use of CAQDAS is swift in nature and allows multifaceted capacity for fast coding and generation of themes. Qualitative data comes with somewhat loads of difficulties especially in the aspect of translation, grouping of data, coding and interpretation of data.

#### **Phase IV: Data Analysis**

Analyzing qualitative data using the VTA method is unique but not too different from how it is done using other qualitative research approaches. Depending on the philosophical paradigm deployed for the research. Pathirage et al., (2007), made it clear that, the ontology of a research may align with either deductive or inductive methodological approach. In essence, codes analysis, nodes analysis, source analysis, category analysis, video analysis, audio analysis and themes would allow the critical reasoning of the researcher to deduce the interpretation of data. For instance, Nvivo has two main parts that are central to data analysis i.e. Nodes analysis and sources analysis; sources contain the raw data collected, while nodes contain the coding of generated ideas emanating from the raw data. Different futures of qualitative research outcomes may emerge as a result of data analysis such world-cloud, word cruncher and query tools.

However, the use of software for analysis can be very complicated when using social media as a source of data as it was experienced during data collection for Nigerian Government COVID-19 Survival Fund research since many personal opinions were generated cyclically from Facebook groups to be specific. Consequently, the themes that will be recognized by the software may be too clumsy and may generally not represent the true picture of the phenomenon.

#### **5. Conclusion and Recommendation**

In this submission, this study, present how a new innovation, the Virtual Trace Approach can be used within an entrepreneurial research context. In particular, it pointed out the procedures involved and how difficult it is to carry out VTA when applied to a research during the peak of COVID-19 Pandemic. In this research, the approach not only showed motivation for its exploration but it presented a direction to innovative research methodology which is capable of



driving the needed change in how data is collected in a research. In the COVID-19 study, mentioned in this write-up, the researcher was exposed to a lot of new things within the process of putting VTA into test. For instance, there was clear understanding between the beneficiaries of the survival fund and the implementers. From the perspective of the beneficiaries, the opportunity to discuss their feelings about the government's new intervention was made possible through online interactions and connections especially with the formation of groups on Facebook, Twitter and Instagram. While on the part of the implementers, the outcome of the interactions of beneficiaries of the project gave insight to them on new strategies for decision making.

Although the deployment of Virtual Trace Approach (VTA) can be so tasking for the researcher to utilize but it is indeed a valuable methodology that can be used for collecting qualitative data and most importantly it can give new insights to where Physical Trace Approach has failed and it untied problematic situations relating to wider coverage. In particular, it enables the researcher to have access to more complex information with wider outreach. In Nicholls (2008), Perrini (2006) suggested, close-up insights are needed if we want to access what actually happens and matters within the entrepreneurial settings. In this context Virtual Trace Approach represents a potentially important methodological approach to be accepted within the entrepreneurship field of study as it allows a more complex and diverse perceptions of phenomenon. It is therefore recommended that Virtual Trace Approach (VTA) should be implicitly deployed together with other qualitative research methodology in various fields of entrepreneurial research where complex information with wide coverage is required, most especially in this contemporary time.

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