

A REPORT ON SUMMER TRAINING WITH AVORAUS CONSULTANCY SERVICES PVT. LTD.

As a Market Research Intern



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Contents



❑ PART 1: OBSERVATIONAL LEARNING

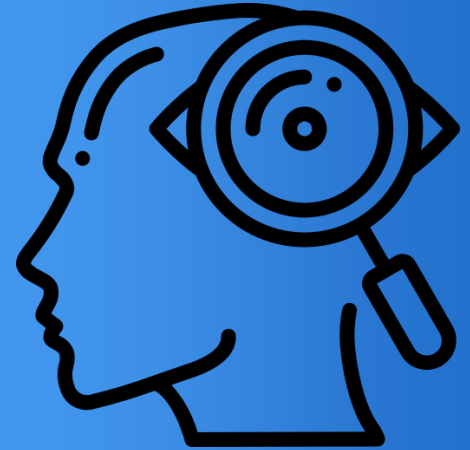
- Organization Introduction
- Mode of Data Collection
- Responsibilities

❑ PART 2: PROJECT REPORT

- Project Title
- Introduction
- Objective
- Research Methodology
- Research Design
- Result
- References

PART 1

Observational Learnings



Avoraus Consultancy Services Pvt. Ltd.

- Avoraus Consultancy Services Pvt. Ltd., founded in 2017, is a Global Knowledge Process Outsourcing (KPO) that pioneers in Healthcare and Life Sciences Market and Business Research.
- The organization conducts global surveys of the medical market for the purpose of data collection
- Inspired by trust and transparency and breaking down all the geographical barriers, Avoraus understand their client's requirement and comes up and makes recommendations to help their clients in improving their business performance, grow in existing and new markets and prepare themselves for future opportunities and challenges .

VARIOUS SERVICES PROVIDED BY THE ORGANIZATION

In addition to data collection, Avoraus also provide the following services:



QUESTIONNAIRE PROOFING

Thoroughly proof the final survey before it is sent out to ensure that the resources and time invested into the survey does not go to waste.



QUESTIONNAIRE TRANSLATION

Translating survey instruments (or questionnaires) into all local languages spoken in the study area



SAMPLE PLANNING

Category of population to be surveyed, the sample size, the basis of respondents to be chosen out of the population



SURVEY PROGRAMMING AND HOSTING

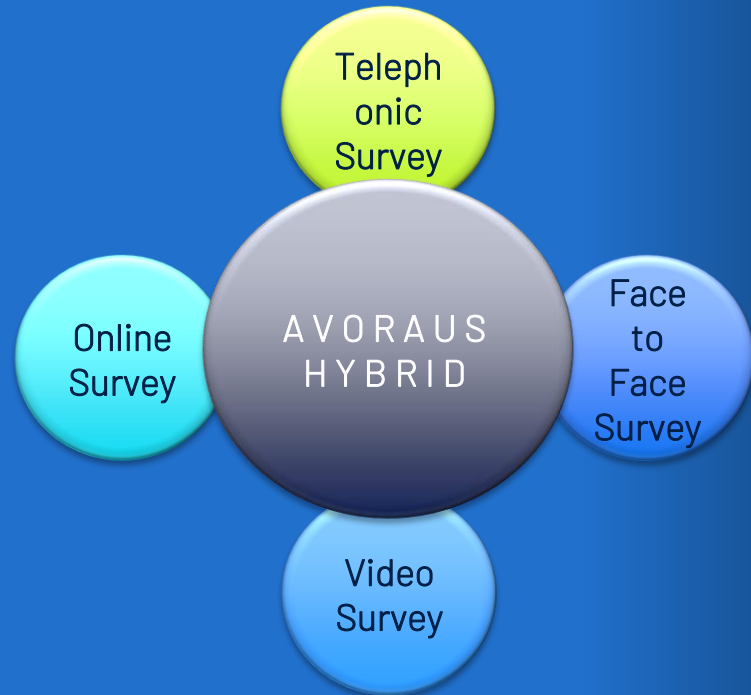


REPORTING AND ANALYSIS

Mode of Data Collection (1/2)

- The organization follows a hybrid approach called as 'Avoraus-Hybrid'
- This approach enables them to reach 'hard to target' audience

'Avoraus-Hybrid' is an amalgamation of the following methodologies



Mode of Data Collection (2/2)

Avoraus also extensively uses CATI and CAWI technologies

C A T I

- Interview is conducted over the telephone
- Interviewer asks respondents the questions from a pre-designed questionnaire displayed on the computer screen.
- The answers are recorded by the interviewer using a keyboard and mouse to correspond with the pre-coded responses displayed on the screen.
- Advantages –
 - low costs and errors
 - availability of an enormous pool of quality controlling tools
- Limitations –
 - handling vague answers from respondents
 - tracing back to correct previously recorded data

C A W I

- An online method of taking surveys where the interviewee follows a pre-written script on a website
- The questionnaire is coded into a program which customizes the flow of the questionnaire based on the responses
- A link is sent to the respondents via email to fill the questionnaire.
- Advantages –
 - comparatively cheap to execute
 - Real time processing and data follow-up
 - Reduced time for analysis
 - No geographical constraints
- Limitations –
 - Limited response rate
 - A lot of people avoid filling online surveys

Responsibilities



To generate and populate leads of potential respondents and maintain the data on MS Excel



To talk to potential respondents, screen them and recruit them for the study.



Device and evaluate methods for collecting data, such as surveys and questionnaires.



Preparing transcript of the discussions and interviews and quality checking them.

PART 2

Project Report





PROJECT TITLE

Sample Planning for Global Magnetic Beads Market Research





Introduction

- ▶ The causative agent of COVID-19, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was initially identified in the city of Wuhan in China in December 2019 and then spread globally, triggering a pandemic. To curb the spread of the disease, many countries conducted large-scale diagnostics and the enforcement of strict public health measures were implemented. The ongoing pandemic emphasizes the urgency of appropriate preparedness and response. As there are still some concerns over the sufficient availability of vaccines in the country, hindering the vaccination drive, early identification and isolation of positive patients remains the most effective way to prevent further human-to-human transmission and mitigate the disease outbreak.
- ▶ SARS-CoV-2 detection and diagnosis is based on viral RNA extraction from a pharyngeal swab which is currently the gold standard test, followed by highly sensitive reverse transcription and quantitative PCR (RT-qPCR). Prior to detection, RNA isolation is an essential step to ensure the specificity and sensitivity of detection methods. To that goal, reliable and high-throughput nucleic acid isolation methods must be available along with a large manufacturing and distribution capacity.
- ▶ Here, Magnetic Beads-based RNA extraction turns out to be superior as it puts forward a framework for diagnostic preparedness in the case of mass-scale testing, because of its low cost, high-throughput compatibility, and independence from sophisticated laboratory equipment such as automated RNA extraction kits and RT-qPCR machines.



What are Magnetic Beads?

- ▶ Most versatile tools for easy and effective isolation of biomolecules in molecular biology.
- ▶ Made up of tiny particles of iron oxides such as magnetite (Fe_3O_4), ranged between 20-30 nanometers in size, which give them superparamagnetic properties.
- ▶ These superparamagnetic beads display their behavior of magnetism only when they are in an external magnetic field making them different from other more common ferromagnets.
- ▶ Can be utilized without any fear of unwanted clumping because they don't magnetize outside of a magnetic field.

TYPES OF MAGNETIC BEADS

- Classified on the basis of various surface coatings and chemistries that provide its own binding properties to each magnetic bead, which makes them suitable for immunodiagnostic and molecular applications.
- Magnetic particles are functionalized with various compounds to allow for the attachment of receptors and ligands on their surfaces as well as the binding of biomolecules like nucleic acids, proteins, monoclonal antibodies, peptides and streptavidin to guarantee specific interactions with target molecules.
- These compounds can be polymeric coatings such as chitosan, dextran, cellulose, polyethylene glycol, polyvinyl alcohol, polystyrene, or polyethylene imine, liposomes and micelles utilization, core-shell structures using silica, and metallic coatings, such as gadolinium, or other hybrid materials

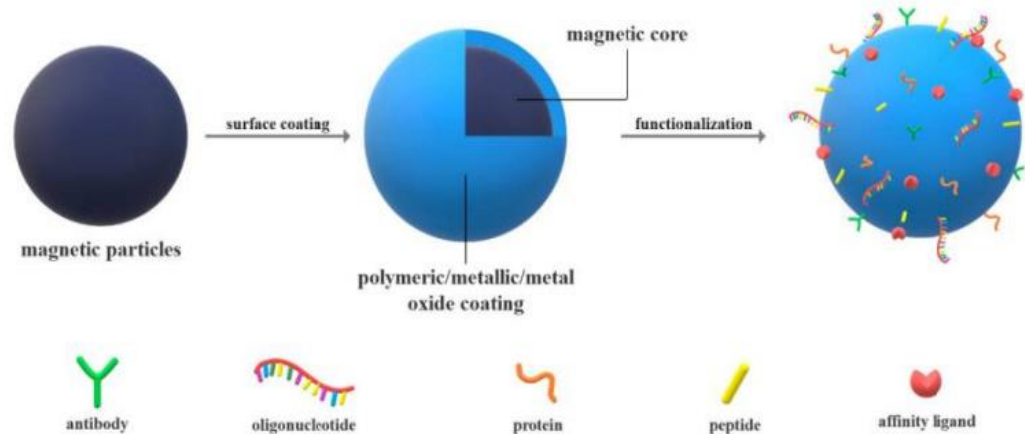


Fig. The procedure of synthesizing magnetic beads for molecular diagnosis.



Applications on Magnetic Beads

The ease-of-use of magnetic beads due to their versatility and surface properties make them responsive to automation as well as well-suited for a variety of applications such as:

- ▶ Magnetic activated cell sorting (MACS)
- ▶ Protein isolation and purification
- ▶ Sample preparation for Next Generation Sequencing and Polymerase Chain Reaction
- ▶ Cell labelling
- ▶ Bioimaging systems
- ▶ Hyperthermia for cancer therapy
- ▶ Blood screening
- ▶ Drug targeting



Advantages

- ▶ Magnetic beads manufacturing doesn't produce any byproducts which can be unsafe for the environment or for human health.
- ▶ They can also be utilized repeatedly for multiple analyses as most of the biological materials are unsusceptible to magnetic fields and the magnetic beads can be effortlessly segregated from the reaction mixture and re-dispersed after the magnetic field is removed, which makes them highly superior in terms of



As a result, magnetic particles provide a safe and adaptable platform for otherwise time-consuming bioassays.

Objective



The objective of this project is to **'profile, select and recruit potential respondents'** for the client to conduct a study on global magnetic market awareness, so as to understand the market landscape and gain insights about



The estimated market potential of Magnetic Bead-based Molecular and Immunodiagnosics analytical techniques/tests.



The future growth rate for the next 5 years of the market.



Identifying the leading market players in the market.



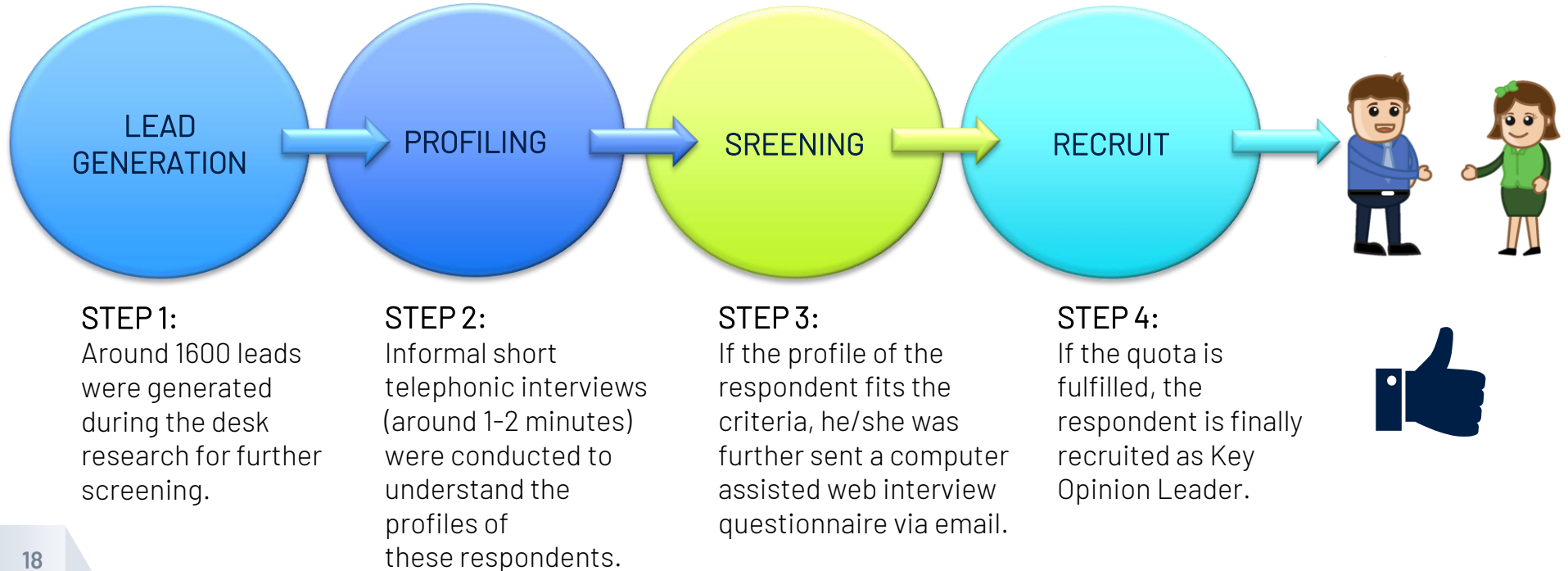
Understanding impact of COVID-19 on the market for Magnetic Bead- based Molecular and Immunodiagnosics analytical techniques/test

Research Methodology

- Exploratory research was done to find the potential leads for sample planning for conducting Magnetic Beads Market Awareness in India, Europe and Middle East. This was conducted through rigorous desk research with the initial step being exhaustive data mining.
- Secondary research was done focusing on the available literature, while informal qualitative techniques were also incorporated, such as discussions with lab technicians, lab managers, executives, department heads, etc.

Research Design

Lead Generation and Selection/Recruitment of Target Respondents

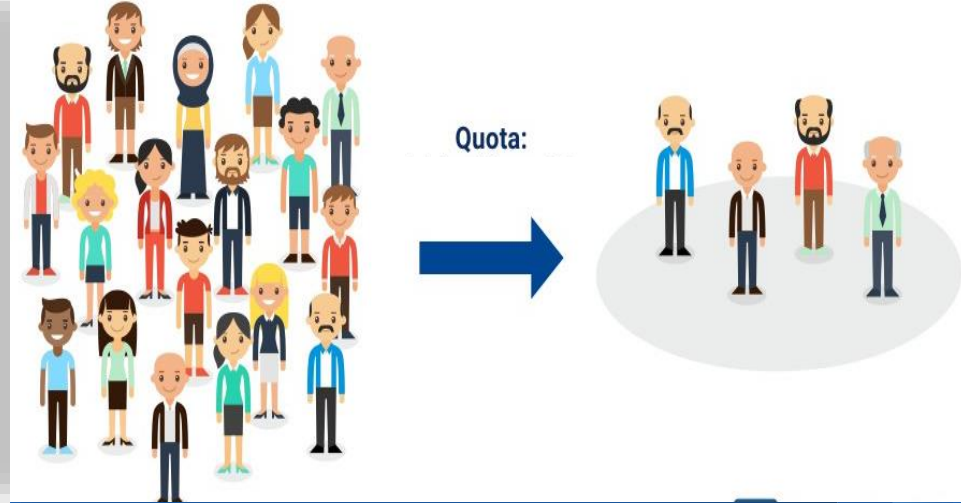


Sampling Technique

Quota sampling technique was used throughout the recruitment process.

It is a two-stage sampling technique.

The first stage was to develop quotas of population elements on the basis of control characteristics relevant for the research.



Sampling Technique (2/3)

QUOTA TABLE A

Code	Field of Work	No. of Respondents
1	Research	20
2	Diagnostics	20

QUOTA TABLE B

Code	Types of Diagnostics
1	Molecular Diagnostics
2	Immunodiagnostics

QUOTA TABLE C

Code	Field of work in Research
1	Academia (Academic Institute/ University)
2	Industry (Biotech/ Pharma/ Biopharma company)

QUOTA TABLE D

Code	Field of work in Diagnostics
1	Industry (Biotech/ Biopharma/ Diagnostics company (manufacturer / contractor))
2	Commercial Testing Lab

Sampling Technique (3/3)

In the second stage, the sample elements were selected on the basis of judgement. The potential respondent should satisfy at least one characteristic in each category.

1. Primary Organization Type

- Academic/University
- Small or start-up biotech company
- Mid/Large pharma/biopharma company
- Medical Device Company
- Contract development and manufacturing organizations (CDMOs)
- Contract Research Organizations (CROs)
- Pharmaceutical Company
- Research Foundation/Institute
- Hospitals/University Medical Centre
- Commercial Testing Lab/Diagnostic Lab
- Molecular Diagnostics/Immunodiagnostics Company

2. Job Title

- Bioengineer
- Department Head
- Executives (CEO, VP, etc.)
- Lab Manager/ Director/ Supervisor/ Coordinator
- Laboratory Technician
- Principal Investigator
- R&D Director
- Staff Scientists
- Scientists QA/QC
- Translational Scientist
- Clinical Trial Scientist
- R&D Manager

3. Area of Focus

Recruit as Code 1, Quota Table A

- Basic Research
- Translational Research
- Drug Discovery
- Drug Product Characterization, release testing, or process development
- Preclinical Research
- Clinical Research

Recruit as Code 2, Quota Table B

- Clinical Diagnostics
- Diagnostic Assay/Kit Development and/or manufacturing

Data Collection Methods and Tools Used

Primary as well as secondary data was gathered during this research.

- ▶ The primary data for sample planning was collected from the potential respondents by computer assisted web interview (CAWI) through coded programmed questionnaire.
- ▶ The secondary research was conducted for preliminary data mining and lead generation using already published reputed databases such as news articles, blogs, government databases, etc.

Result

Out of a global population of 1600, 40 respondents were successfully recruited as the key opinion leaders for the region of India that will act as the sample size for the study to be conducted by the client.

The next step is to render assisting services to the client by intermediating in-depth interviews through a software.

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THANKS!

