Karna AI

AI Solutions for Market Research

Perceptron - AI Assistant for Observational Research

"Quant meets Qual" to give data-backed insights for real-world consumer behaviour

"95% of purchase decisions are made in the subconscious mind"

Famed author and Harvard Business School professor, Gerald Zaltman, says that 95% of our purchase decision making takes place in the subconscious mind. This makes sense to us because Nobel prize winning psychologist, Daniel Kahneman, has proved with hard data evidence that we humans are essentially lazy users of our conscious brain. The subconscious part of our brain is very very powerful. For instance, driving happens in an automatic mode for us. We can easily drive our way from home to work, all the while thinking about tasks ahead and without actually engaging our mind in the act of driving. Gerald argues that our preference for the brands that we choose and how we use these products also happens in the enigmatic layers of our deep subconscious.

"Tell me how AI can help us get implicit insights"

This is a common theme that has emerged in our conversations with clients. Today's researchers want implicit insights, they want it fast and they want it backed by data. At Karna AI, this is the key theme on which we focus and one such solution that addresses this gap is PERCEPTRON.

Companies in the digital space are extremely avid users of market research techniques. For instance, the entire industry builds websites and apps by analysing raw data of user behaviour through interaction logging services like Google Analytics. Armed with this data, product managers test multiple designs, understand the customer flow and make data-backed improvements.

But when it comes to physical world, things become different. How does a company selling shaving equipment, bicycles, cigarettes, coffee etc, get Google Analytics like user behaviour and interaction data to base decisions on? The good news is that AI is bridging the gap between physical and real world to make this happen. Read on to know more on how we address this market gap with Perceptron - The AI assistant for Observational Research.

Perceptron - AI Assistant for Observational Research

An overview of how Perceptron can deliver insights that were just not possible to derive before.

Observational Research

Observing how people interact with products can yield useful insights to understand consumers needs and motivations, why they prefer a certain product over others and how a brand can evolve its messaging to generate higher impact. It is a common research practice which is today performed with the help of ethnographers or domain-skilled researchers who spend days or weeks observing respondents, noting down data points, capturing videos, asking questions and later provide a report that address key questions in the research brief.

Humans have limitations

Observing all the consumer interactions manually is a time consuming and cumbersome process. Humans can capture high level data (like time taken to eat a subway sandwich) but find it difficult to capture minute data points (number of chews in eating a sandwich and average duration of those chews).

Presence of human keenly observing human can be unsettling for the research subject (the consumer) and can alter his behaviour. "To err is human" and researchers are no exception. Human researchers are prone to biases, fatigue, errors and judging the respondents on personal feelings.

"I want data and I want it fast"

Manual Observations are not scalable. A researcher would want her decisions to be based on a large sample of data (typically ~200 respondents) while human based observations don't scale very well (typically ~20 respondents). Manually intensive research projects have long turnaround times as it takes a lot of time to collect data, process it, finding relevant video sections etc. And of course, all these constraints result in the cost of the research exercise.

However, we acknowledge that ethnographers have a great deal of value to add. What we propose is that with a teaming up of man and machine, the entire research exercise can be improved.

**In God we trust;
all others must bring data.**

- William Edwards Deming -

Auto-Observational Research - A Case Study on trimming

YouTube Demo Link – www.tiny.cc/90i5qy

Understanding how men trim beards and why certain products work!

This is a conceptual case study of how Perceptron can help a beard trimmer brand get a better understanding of its customers. What perceptron needs is hundreds of videos where bearded using different trimmers (say 100 respondents each for three trimmer variants A, B and C). These videos can be sourced by the client in-house, through an agency or through an online panel provider where respondents can record videos from their homes.

Once the videos are collected, the client research team and Karna AI engage with each other to understand the research objectives and accordingly develop a data collection protocol. For this particular case, the objective and protocol could be something like this:

Typical Objectives:

- Understanding which of the trimmer variants (A, B and C) perform well and why.
- Understanding the typical user flow of a trimming operation for different trimming objectives - full beard trimming, french beard styling, beard shortening etc.
- Get data-backed answers for unique observations from the process.

Typical Data Collection Protocol:

1. Total time taken for the trimming operation and time spent in each area of face.
2. Number of trimmer strokes made along with intensity and length of each stroke.
3. Angle of the trimmer and face angle at each point in time.
4. Emotions and facial distortions made during trimming.
5. How the trimmer is held at each point in time.
6. Number of times the trimmer was shaken to remove excess hair.
7. Frequency of switching on/off during the trimming exercise.
8. Areas of face where the user comes closer to the mirror for delicate trimming.
9. Beard density at each point in time for every part of the face.

Quant-metric for beard density

Point of application on the face.
Used to identify count, intensity and time taken for each stroke.

Detecting angle and orientation of the trimmer.

Time spent in each area

Heat map of trimmer application
(adjusted for face movements)

Face angle, emotion, distortions and distance from mirror.

Deliverables and Output

With raw videos and data protocol as input, Perceptron performs the analysis and returns all the interaction metrics in an excel file. Once armed with the raw data that captures in-depth interaction metrics for each second in time, the researchers can run analytics and answer their key questions.

The output data includes options like:

- Report that captures key findings from the research exercise.
- Heat-maps (averaged across hundreds of users) of typical user behaviour.
- A behaviour flow map/funnel with quantified metrics at each stage.
- Filtered video snippets from hundreds of hours of raw video (for instance, snippets that club all the areas where users exhibit negative emotion for more than 2 seconds).
- Data backed answers to any potential research questions.
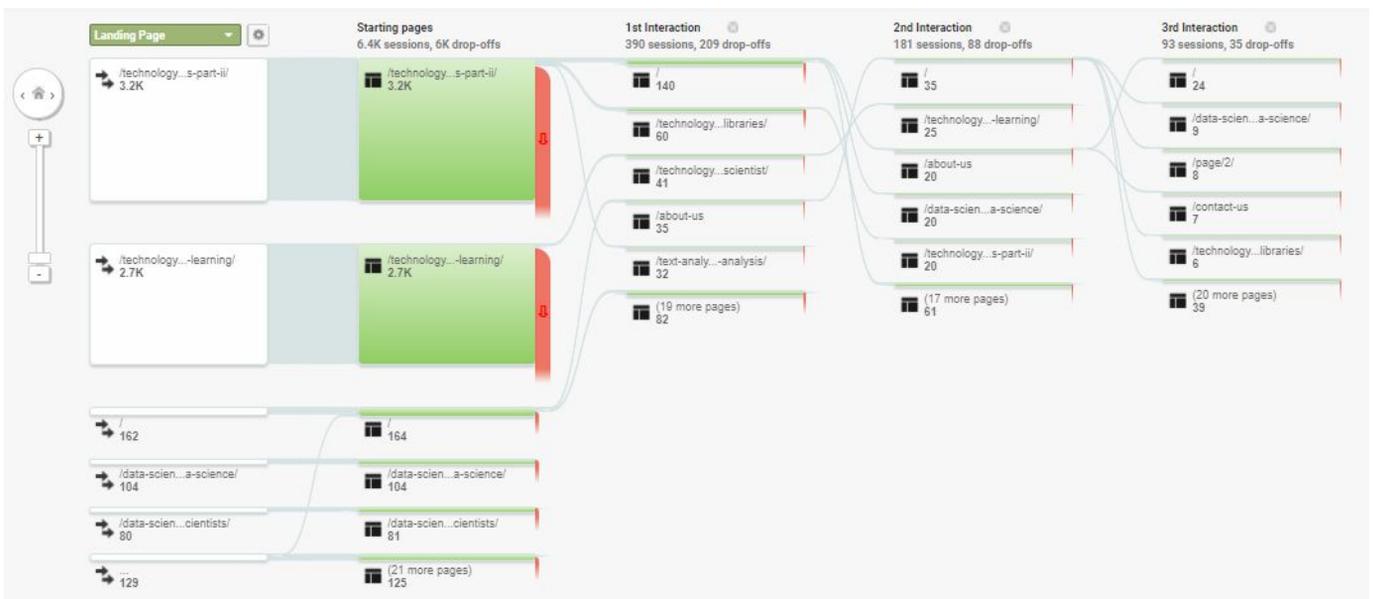
The above graphic is a snapshot of user behaviour on ParallelDots' website. This is a critical tool used by our digital marketing team to improve the user experience and drive higher conversion. With Perceptron, we are bringing such in-depth analysis to the domain of physical products.

Take your research game to the next level with Perceptron

By bringing Quant-like rigour into the largely Qualitative practice of observational research, Karna AI is pushing the boundaries of how researchers can tease out implicit insights.

Differentiated insights   Highly scalable   Quick turnaround time   No human bias & error

Frequently Asked Questions

Has Perceptron been tested in the market?
Perceptron is used by one of the largest ($100bn+ valued) consumer products company in the world and trusted by some of the top-10 global market research agencies.

What kind of use cases can Perceptron work on?
Perceptron can potentially handle any observational research focused use case. This includes drinking coffee, applying face wash, smoking cigarettes, eating burgers, testing mobile phones, testing lawn mowers and much more.

Does it work only on "face" related products?
Not at all, it works on any potential use case. It can be used for understanding consumer behaviour while drinking coffee at starbucks, going through airport security, shaving body hair, applying nail paint on toes and any potential use case.

How does an engagement typically work?
The client shares a brief with the research objectives. Data is collected either by the client or through Karna AI's agency partners. For the first study, Karna AI takes a few weeks to customise its AI technology to the client's use case and post that, turnaround time for analysis becomes very fast (less than 3 days).

A new engagement starts with a pilot to test the efficacy of the system on client use-case and research objectives.

Tell us a bit more about Karna AI?
Karna AI provides AI solutions for market research that help researchers make sense of unstructured data. The USP of the company is innovation - in terms of AI technology and applications in market research. Perceptron is one of the many products offered by the company.

What makes Karna AI so good at Artificial Intelligence?
Karna AI is a division of ParallelDots - which is focused on automating radiology related tasks. ParallelDots has one of the best applied AI research groups in the world. Its original work in deep learning has been accepted in leading peer reviewed technical conferences. Some of its achievements include detecting brain hemorrhage and dental cavities from X-ray radiographs with radiologist level accuracy.

AI Solutions for Market Research

We believe AI will be at the core of successful market research undertakings of the future. Our vision is to help drive this shift.

Karna-AI is the Market Research AI solutions division of ParallelDots, a premier applied AI research group. ParallelDots provide AI solutions and consulting to some of the largest enterprises in the world. Our APIs are used by 1,000+ developers across the globe.

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