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WHITEPAPER

# INSIGHTS ON AUTO-PILOT

Decoding ROI  of suing AI across the stages of MR Project

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# Summary

***Ever since the launch of ChatGPT in November 2022, there have been opinions ranging from AI resurrecting a new paradigm for market research to replacing humans in research.***

We believed that the truth lies somewhere in the pragmatic middle. As data folks, it was best to ascertain the merits of this belief by creating an experiment around this hypothesis. We decided to do an A/B test to conduct this experiment.

**Our control study was a qualitative research project conducted in the traditional format, and our test study applied AI assistance across each step of the same research to assess the impact.**

This approach helped us understand the role played by AI across every step and decode the ROI of this assistance. We wanted to understand whether the use of AI improved the efficiency & / or effectiveness of the output at each respective step of the research process?

We built custom applications on top of the ChatGPT software using APIs at the back end to perform the tasks at hand. We compared the (a) effectiveness and (b) efficiency of the tasks performed in the AI assisted test study with the historical control study.

With this method, we were able to map the ROI of the AI tool at each component of the research process. Our study came to the following conclusions:

- AI tools did improve the efficiency and effectiveness of several steps of the MR process, but also failed across a few steps and, hence, this is not a complete solution at all levels;
- AI tools perform well in generating the first draft of several market research specific documents to set the stage for their finalisation;
- AI tools are especially good at reading and analysing large amounts of data—they can perform tasks like content analysis extremely well, and assist in report writing;
- However, these tools are unable to look beyond the obvious to analyse red flags or non-linear contexts.

**What we were able to finally conclude is that these tools cannot completely replace the "human in the loop" in their current capacity, but they can be trained to be great assistants, which reduces the researchers' time from being project runners to becoming true insight owners. We were also able to map the specific efficiency and effectiveness gains that researchers can enjoy by applying the right AI tools to each stage of the Research Process.**

# Background

***AI, especially with the launch of generative AI, is rapidly transforming the way we view various industries, from healthcare to finance to logistics. With its ability to automate routine tasks, analyse large amounts of data and learn from its mistakes, generative AI is revolutionising the way we work, communicate and interact with the world around us.***

The market research industry is no different, and AI is rapidly transforming this landscape. **By automating many aspects of the research process, from data collection to analysis to interpretation, AI theoretically has the potential to enable MR to become faster, more efficient and cost-effective**.

For example, AI can quickly identify patterns and trends in large data-sets, allowing businesses to make faster and more informed decisions. AI-powered chatbots can analyse real-time feedback from customers, helping businesses to understand their needs and preferences as the interaction happens.

While the benefits seem obvious,, it is also important to understand the limitations and challenges of this technology and the areas we should be wary of being dependent on it for. For example, AI may struggle to understand the nuances of human behaviour and emotions, which can be critical in understanding consumer preferences and decision-making. In addition, there may be ethical and privacy concerns around the use of AI in market research, particularly when it comes to data collection and processing.

**As we navigate the use of AI within market research, it is important to objectively understand where AI adds value to the research process, characterise the nature of this value, map its time and cost implications as well as highlight the sharp edges that we need to look out for.**

We hope to begin the process of mapping these nuances with our paper as we seek to explore the role of AI in the field of market research, with a particular focus on establishing its ROI across the various stages of an MR project. By examining the specific role of different AI applications across each project stage from the creation of a brief, to making of the report and everything in between, we hope to provide insights into where AI is most useful, where human input is still necessary and how the two can work together to create more accurate and valuable insights for businesses.

# Hypothesis

## The Hypothesis

**"The integration of AI technologies within market research processes will significantly enhance:**

**Data collection;**
**Project management;**
**Data quality;**
**Analysis;**
**Insight generation.**

**This will lead to improved speed to insight and better decision-making, thereby improving the competitive advantages of businesses".**

Our hypothesis implied that projects that are executed with the help of the right AI tools would:

1. **Improve efficiency** by reducing the time required to execute market research projects and consequently be substantially cheaper;
2. **Increase effectiveness**, in that we could achieve an output quality similar to or better than projects that are executed the traditional way.

**Further, we believe that in most cases, the "human in the loop" is necessary in order to discern the use of the tool and apply the right context to it.**

We arrived at this hypothesis after experimenting with ChatGPT almost immediately after its launch in November 2022. We could intuitively estimate that this technology has the potential to transform the market research industry in several ways, and we used these experiments to gain real world data that would help us establish the practical applications of this technology. We started by experimenting with Open AI using its own interface, and later moved on to using APIs to develop customised applications specifically for market research.

# What is an AI-assisted research process?

In a traditional research process, humans develop inputs, process them and create outputs, while using certain tools and software.

- Data collection: Researchers manually gather data through surveys, interviews and observations, using in-person recruitment, online panels, etc. This data is then collated into tables or transcriptions based on the research methodology.

- Data cleaning: The data collected, is manually processed to remove errors, duplicates and to flag inconsistencies. This is done manually by the researchers or by using software.

- Data analysis: Statistical tools and content analysis methods are then used to gain basic understandings of the data, typically through spreadsheets or dashboards or analytical software.

- Insight generation: This is where researchers use their expertise to interpret the data and generate findings. This process is typically subjective to the researcher working on the project.

- Decision-making: The findings are then summarised through a report, a presentation deck, or dashboards to ensure that the decision-makers have access to the key learnings of the project.

**Across all these steps, the fundamental input, processing and output is managed by the "human in the loop".**

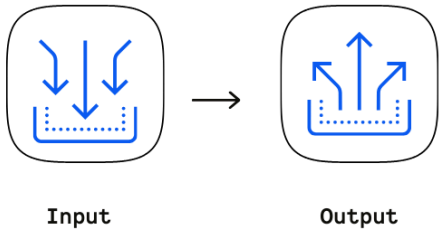


*Figure 1: The Traditional Research Process*

In the AI-assisted approach, the key difference is that the AI tool has the capability to (a) generate its own text, and (b) read large amounts of text and perform analysis on them quantitatively. To generate appropriate text, the AI needs to be fed with the right prompts by a human.

The input provided to the AI by the "human in the loop" can be far less detailed than the traditional approach, due to the AI tool's ability to generate and/or process text, images or audio. The AI tool provides an intermediary output, which is close to the final output, but not quite there yet in terms of very specific details. For instance, a user may like to change the sample size, or the centres proposed for a study from an AI tool that is designed to generate a proposal.

The "human in the loop" can modify this intermediary output to generate an output that is comparable to the traditional approach.

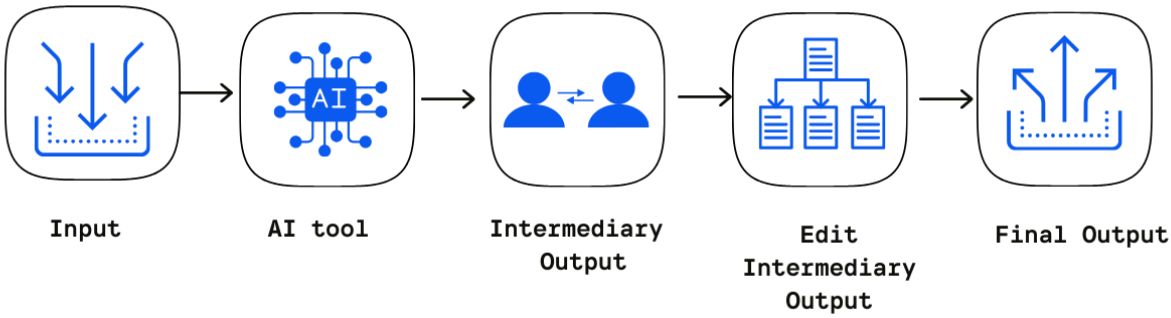


*Figure 2: The AI Assisted Research Process*

In this paper, we attempt to quantify the time, cost and effort advantages to taking using an AI assisted approach to managing market research projects.

# Research Design

To prove our hypothesis, we decided to conduct an A/B test. We compared an end-to-end research project conducted using the traditional approach as the control. We then executed the same study, using AI tools specifically developed for every stage of the project execution (test) as shown in Table 1.

| Control (A) | Test (B) |
| --- | --- |
| Traditional Approach | AI Assisted Approach |

*Table 1*

# Research Methodology

We are able to write this paper because of the launch of ChatGPT on November 30, 2022. This pathbreaking AI tool has revolutionised the business landscape since its launch. For the purpose of this paper, we have primarily used GPT-4, OpenAI's most advanced multimodal large language model. In some cases, we have also used GPT-3.5, where (a) it had certain advantages in terms of its ability to accept a higher number of inputs than GPT-4, and (b) where the task was simple enough to be done by GPT-3.5 at a lower cost, without compromising on output. Table 2 provides the AI tool/model used for each of the activities.

| Task | OpenAI model/tool used |
|---|---|
| Creating the brief (insight requirement) | GPT-4 |
| Searching for service providers | Text Embedding ADA 002 |
| Creating the proposal | GPT-4 |
| Creating a Services Procurement Contract | GPT-4 |
| Creating a Discussion Guide | GPT-4 |
| Creating Concept Cards | Dall-E<br>GPT-3.5 Turbo 16K |
| Creating a Field Briefing Note | GPT-4 |
| Transcribing recorded interviews | Whisper<br>GPT-3.5 Turbo |
| Performing content analysis | Text Embedding ADA 002<br>GPT-3.5 Turbo 16K<br>GPT-4 |
| Developing the report | Text Embedding ADA 002<br>GPT-3.5 Turbo 16K |

*Table 2*

We chose a study that was conducted using traditional methods before the launch of ChatGPT in the months of August and September 2021. We specifically chose a qualitative study for our research, due to the inherent ability of a large language model like GPT-4 to process large amounts of text efficiently, thereby producing good quality output at lower cost and time. Being a historical study, we could easily gather the necessary information. The control panel provided us with details of the time taken for each task, the cost of each task, the final output and all the intermediary documents used to achieve the final output, such as the discussion guide. It would be interesting to conduct the same experiment for a quantitative study in the future; the authors are looking to undertake phase two of this experiment in 2024 with such a study.

# The Control Study

The study was conducted by a leading building material supplier (client) in South India. The client marketed a super bright white paint formulated specifically for ceilings, and was in the process of rebranding this product. Before the rebranding exercise, the client wanted to understand the customer better through a qualitative study among its target customers. The main objectives of the study were to understand:

- The importance placed on interior ceilings in the overall paint purchase process;
- The purchase process of paints for interior ceilings;
- Colour preference for ceiling paints;
- Brand preference and decision-making for ceiling paints versus wall paints;
- Solicit their reactions to a few concepts of bright white paint.

The researcher who conducted this study— Rahul Bhardwaj (Principal Consultant at Ayvole Insights)—is one of the authors of this paper. The control study was conducted as in-depth interviews among 37 households and interior decorators, across four centres in the state of Tamil Nadu.

# The AI-Assisted Test Study

In a typical research project, the requirement for research starts with the research custodian at the business defining the problem that needs to be addressed by the research. The process then moves to the research supplier for the execution of the project and compilation of the findings, before it finally comes back to the research custodian for dissemination to the rest of the business as clear answers to the business questions. This experiment covered all of these aspects across the roles played by the research custodian, as well as the research supplier to understand the impact of AI assistance to both these roles (see Figure 3). We applied ChatGPT-based technology to each step of the market research project, except the actual fieldwork.

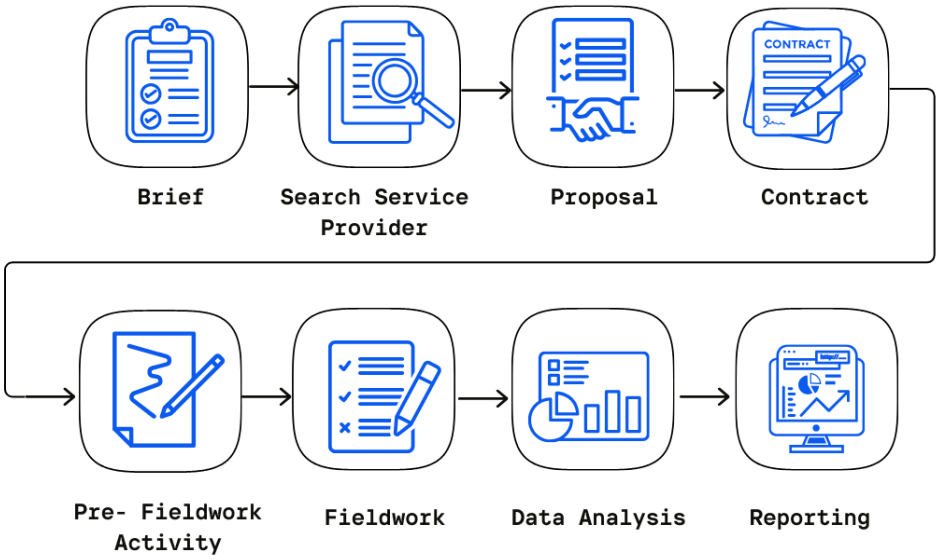


*Figure 3: Research Steps*

# Research Steps

1. Creating the brief (insight requirement)
2. Searching for service providers
3. Creating the proposal
4. Creating a services procurement contract
5. Creating pre-fieldwork documents
6. Discussion guide
7. Concept cards
8. Field briefing note
9. Performing data analysis
10. Transcribing recorded interviews
11. Performing content analysis
12. Developing the report

We developed software applications for executing each of the above tasks, using ChatGPT APIs at the back end and our own user interface at the front end. The client and the researcher who worked on the control project performed each of the above activities using the newly developed AI software. For each of these steps, we compared the traditional approach to the AI-led approach on the following three aspects, and noted their observations in a prescribed format:

1. Quality of output
2. Time taken
3. Cost

We did not replicate the actual data collection process once more for the test panel, and utilised the same raw data collected in the control panel. Therefore, our study maps the impact of AI in the research process until data collection and resumes post-data collection. The efficiencies brought about by using AI in the actual data collection process is something that this experiment does not cover. The following section discusses our findings of the A/B test in detail.

# Findings

The findings of the A/B test have been arranged in the order in which they were conducted. The order mimics the flow of the project executed in the traditional way.

## 1. Creating the brief

### *Control study*

Creating an unambiguous and detailed brief is a crucial first step of any research project. A typical research brief establishes the objectives, scope and expected outcome from the research. Creating a well-structured and comprehensive brief sets the foundation for a successful research project, it ensures that all parties involved are on the same page with respect to the goals and outcomes of the project. In the control study, the brief was created and shared in the MS Word format by the research custodian at the business. It was a two-page document covering:

- The business background of the requirement;
- The business objective;
- The research objectives;
- The target segment of the product (ceiling paints);
- The expected research methodology;
- Sample size;
- Deliverables from the agency.

Creating the brief took approximately four hours (0.5 work days) of time. Taking a cost of USD 30 per hour for a senior researcher in India from the ESOMAR Global Prices Study 2021 (page 56), the total cost of this exercise comes to USD 120.

### *AI-assisted test study*

We created an application specifically for creating a brief using OpenAI. The application took the following inputs from the user:

- The research requirement in a few lines (free text input);
- Any specific requirements, such as sample size, locations, research technique, etc. (free text input);
- Estimated timeline for delivery (in days, weeks or months);
- Estimated budget for the study;
- Supporting documents, e.g., a sample brief template (if available).

The AI tool was programmed to “act like a market researcher” and create an editable brief using the above inputs. The user interface of the application is depicted in Figure 4.

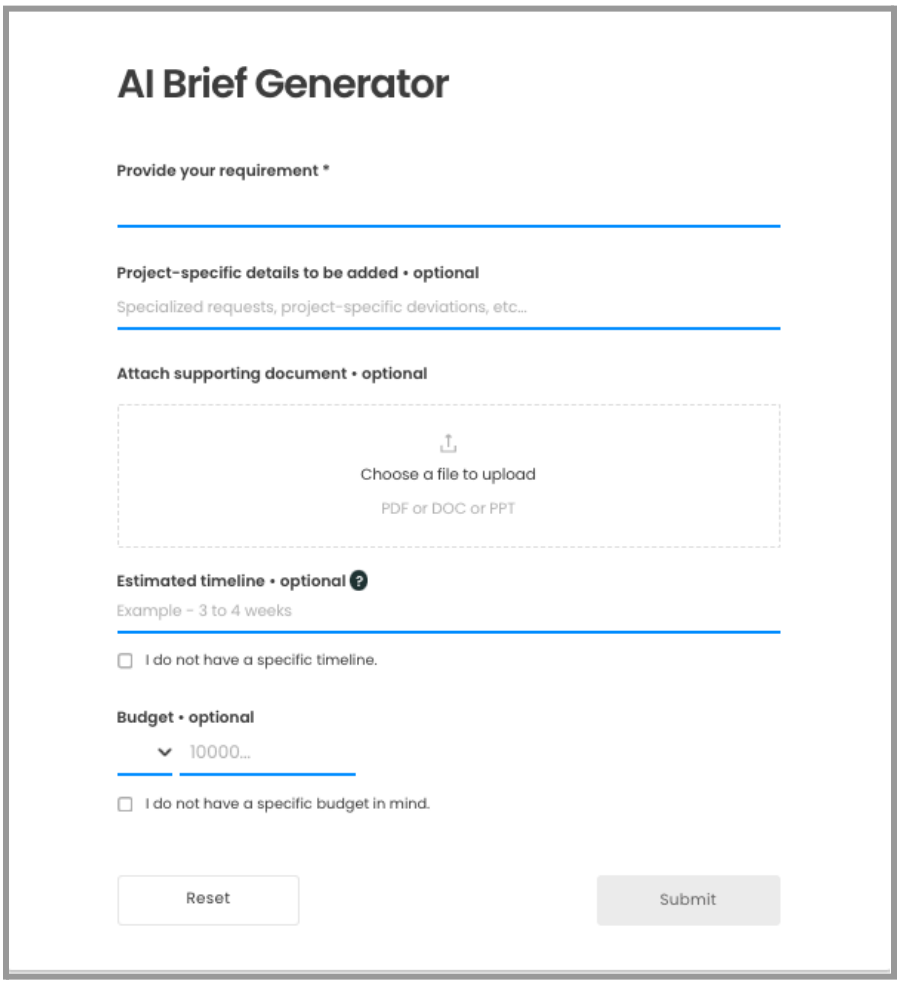


*Figure 4*

With this application, the user was able to give specific details on the brief that they required, including sample size, research centres, timeline, budget, etc. The AI tool was able to incorporate these details into the proposal, adding additional details of its own to provide a comprehensive brief. We then compared the two outputs to understand where the AI assistance was able to add value, where it lacked and what the role of the research custodian needs in order to finalise the brief.

| Heading | Control study | AI-assisted test study (first draft) |
|---|---|---|
| Research objectives | Importance placed on interior ceilings in the overall paint purchase process.<br><br>Understand the purchase process of paints for interior ceilings.<br><br>Understand colour preference for ceiling paints. Is it always white?<br><br>Understand brand preference and decision-making for ceiling paints versus wall paints.<br><br>Expose them to a few (possibly three) concepts of bright white paint. | Gain insights into the preferences and motivations of customers who have recently painted their homes, specifically targeting the market for super bright white paints.<br><br>Identify factors that influence the purchase decisions for super bright white paints, including brand awareness, pricing, quality perception and ease of application.<br><br>Explore customers' preferences for packaging, eco-friendliness and other product attributes that may impact their buying decisions.<br><br>Identify any gaps in the current market and potential opportunities for innovation in the super bright white paint segment.<br><br>Understand the perception of customers towards our current product—BESTBUILD AQUA CEILING WHITE—and identify potential areas for improvement. |
| Target segment | Households currently undertaking the interior painting of their residence or have undertaken such work within the last three months.<br><br>We can meet only those households living in their own homes, independent ones or flats. Painting of houses that are let out on rent, leased from others or company-owned accommodation will be out of scope of this study.<br><br>We need to meet Socio-economic classification (SEC) A households only, as defined by the new SEC classification by the Market Research Society of India. | The target segment for this research includes households in South India, specifically in the major cities of Tamil Nadu. We are interested in households that have recently painted their homes and belong to SEC A. This segment is typically more likely to invest in quality home improvements and is more likely to have higher purchasing power. |

| | | |
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| Research methodology | To achieve the objectives, the study would be done through qualitative in-depth interviews. We expect each interview to last between 20 to 30 minutes. | We would like to conduct qualitative interviews to gather in-depth insights from our target segment. By utilising qualitative methods, we can gain a deeper understanding of ustomers' preferences, motivations and decision-making processes. The main focus will be on conducting face-to-face interviews that allow for open-ended responses and probing questions. |

*Table 3*

The user then edited the output provided by the AI tool to suit their requirements. The key edits that were required to the brief were:

- Changes in research objectives, especially the addition of the concept test;
- The addition of a table to give an indication of the exact sample split.

**The user was able to achieve an output brief comparable to the one developed using the traditional approach by spending a total time of 30 minutes (five minutes to provide the input and 25 minutes to edit intermediary output), to create the final brief. Taking a cost of USD 30 per hour for a senior resource, the cost comes to USD 15.**

## Comparison: Control versus test

In terms of efficiency, the AI-led approach cut short the time (and consequently the cost) by over 90%. Regarding effectiveness, in this example the AI assistant was able to create a descriptive brief that broadly covers all aspects based on the input requirements; it was able to detail out the research objectives clearly as well as mention the sample sizes and detail out the methodology. However, it failed to be able to identify the constraints that the researcher needs to watch out for, and identify adjacent components of the research objective that might be important to highlight.

# 2. Finding the right service providers

## Control study

In this project, the client directly contacted the researcher due to prior experience with him; no other expert was considered. This is typical in the traditional approach since there are limited ways to approach or compare research service providers. However, when the right expert is not directly accessible, companies may need to look for and select the right experts for their project. The typical process involves:

- Identifying the experts;
- Comparing across experts;
- Finding the right expert;
- Requesting a proposal;
- Comparing proposals;
- Commissioning the project.

While this is not within the scope of this particular experiment, we have included an analysis of this module since this is a time-consuming process. Multiple experts need to be identified in many projects, followed by comparing multiple proposals before the project can be commissioned with one. While we will attempt to establish the role of AI in this part of the process, this will not be included in the overall ROI of the experiment since the specific project did not involve this requirement and, therefore, we do not have actual data from the control study to estimate the time, cost and effort for this part of the project. However, this can typically take anywhere from a few days to a few weeks based on the complexity of the requirement.

## AI-assisted test study

Since there are technology enabled marketplace platforms to identify experts, we have used such vertical specific marketplaces as our resource to shortlist the experts for this project, and identify the time and effort taken to commission a study using AI assistance.

AI-assisted marketplaces provide some support to the client searching for an expert across the following steps:

- Searchable repository of domain specific experts;
- Recommendation of similar experts based on the requirements;
- Automated comparison of experts through a software interface;
- Real-time collaboration with experts to request for a proposal.

We did not contact multiple researchers recommended by the platform for this study, and this was done only to ensure completeness of the standard research process through an AI-assisted approach.

### *Comparison: Control versus test*

The time and effort that was spent on this AI-assisted process was around 60 minutes:

- 10 minutes for signing up to the platform;
- 30 minutes for identifying two to three research service providers;
- 10 minutes for uploading the brief and filling out the relevant details;
- 10 minutes for sending the requirement to the identified experts.

What the platform did was provide a single pane of access to experts that could be used by the client to shortlist and reach out, which reduced the time required for search and interaction with the relevant research providers.

## 3. Creating the proposal

### *Control study*

For the sake of a fair comparison, we assume that the research supplier would have templates that can be adapted for specific research requirements. The effort from the researcher would be to adopt the broad proposal template to the specific use case and add the details accordingly. The detailed proposal would then involve effort from the researcher to build the specific requirements of the study around the context, objectives, research approach and design, as well as time, cost and effort needed to complete the project. In this particular case, the research proposal was in the form of an 18-page MS Word document covering aspects including background, research objectives, information areas, project tasks and timelines, deliverables, investment required, background of the research service provider, the background of the principal consultant working on the project and terms and conditions. It took four hours (0.5 work days) for the researcher to develop the original document. Assuming a time cost of USD 30 per hour, the total cost of this exercise comes to USD 120.

### *AI-assisted test study*

We developed an application that took the following inputs for generating the proposal:

- Content of the brief given by the client (free text field);
- Any project-specific details that the user requires, e.g., a specific model that they would like to use (free text field);
- The fee that the service provider would like to charge (number field);
- Payment terms (choose from the options in the list);
- Proposed start date of the project (date field);
- Proposed end date of the project (date field);
- Supporting document(s), e.g., it could be the format (with headings and subheadings) of the proposal that the user would like to have.

The user interface of the software is shown in Figure 6.

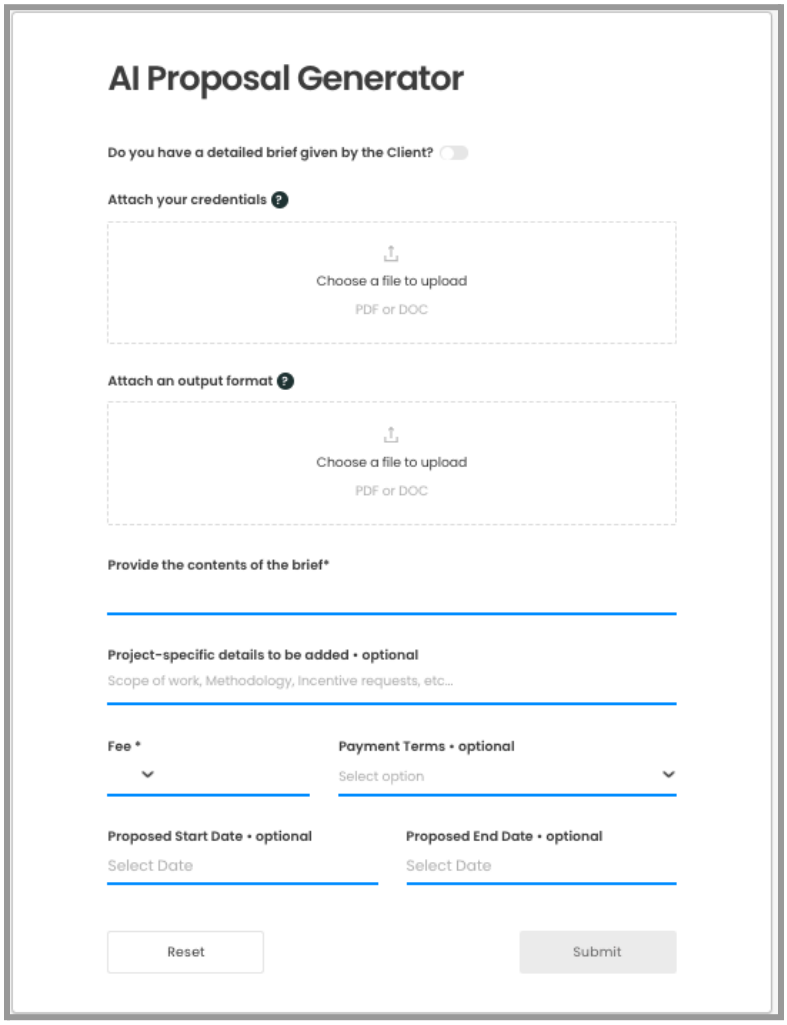



*Figure 6*

The researcher provided the relevant inputs to generate the draft proposal, which he further edited to develop a proposal similar to the traditional approach and bring it to a comparable quality. It took 15 minutes to generate the first draft of the proposal in MS Word, which was mainly the time taken to enter the inputs on the AI tool. The run time of the application was between one and two minutes. Since the tool took an attachment as an input, we were able to attach the format in which we needed the final output, or attach the brief itself, which the AI tool incorporated into the first draft of the proposal.

| Heading | Control study | AI-assisted test study (first draft) |
|---|---|---|
| Research objectives | To understand the purchase practices for interior paints, especially ceiling paints, among residential customers.<br>a. What is the frequency, in years, of getting the interiors of the house painted? Are there any specific seasons (e.g., festival season) when they get the interiors painted?<br>b. Typically, what is the budget for getting the interiors of the house painted? What portion of that budget is allotted to ceiling paints?<br>c. What is the typical process of getting the interior walls and ceilings painted?<br>d. What is the level of importance placed on paints for interior ceilings as compared to interior walls?<br>e. How do they choose colours for wall and ceiling paints?<br>f. What colour(s) are preferred for ceiling paints?<br>g. Who is involved in decision-making? Whose decision is considered final?<br>h. Do they consult professionals such as architects, interior designers, contractors, paint/hardware dealers, etc.? What is the level of their influence?<br>i. What are the various factors considered while choosing a paint brand?<br><br>To test the concept of bright white ceiling paints, we looked into:<br>• Likes<br>• Benefits<br>• Dislikes<br>• Likelihood of purchase | Understand the importance placed on interior ceilings in the overall paint purchase process.<br><br>Understand the purchase process of paints for interior ceilings and its relation to wall paints.<br><br>Identify colour preferences for ceiling paints in particular shades of white.<br><br>Understand brand preference and decision-making process for ceiling paints versus wall paints.<br><br>Gauge customer reactions to features of bright white ceiling paint. |

| | | |
|---|---|---|
| Research approach | The objectives of the research would be wholly met through primary research methods. Qualitative research methods, i.e., through in-depth interviews and/or expert interviews would be conducted.<br><br>Following this would be the target segments for the primary research.<br><br>Households: This segment would comprise of households who are currently undertaking interior painting of their residence or have undertaken such work within the last three months (from the date of commencement of the study).<br><br>Architects/interior designers: While paint selection decision-making largely involves households, stakeholders such as architects/interior designers and contractors play an important role as influencers. Therefore, this segment would consist of architects who primarily advise individual households primarily around architecture/plan but also, to some extent, interior designing. | This research will be conducted through qualitative in-depth interviews, each lasting approximately 20 to 30 minutes. A sample of 30 households and 10 interior decorators across Chennai, Trichy, Tirunelveli, Karur and Pollachi will be interviewed.<br><br>The primary target segment for this research includes households currently undertaking interior painting or those that have done so in the past three months.<br><br>● Households residing in owned homes: independent houses or flats.<br>● Households belonging to the SEC A category.<br>● Households with a "paintable" ceiling.<br><br>Note: Households with rented, leased or company-owned accommodations, or those with false ceilings will be excluded from this study. |
| Deliverables | Key tasks for Ayvole in this project would be:<br><br>● Development and translation (into Tamil) of research instruments (discussion guides) to meet the defined research objectives.<br>● Identification and recruitment of target segments (as defined above); VNC Group will support in recruitment of respondents. | The agency will be responsible for the following:<br><br>● Development of research instruments to meet objectives;<br>● Recruitment of target segments (with support from VNC Group);<br>● Conducting interviews, preferably F2F. If not possible due to current circumstances, interviews will be conducted over Zoom;<br>● Delivery of raw data from the interviews (interview transcripts); |

| | | |
|---|---|---|
| | • Conducting interviews with selected respondents. Given the COVID-19 scenario, the interviews would be done over Zoom.<br>• Analysis (content analysis) of the interviews.<br>• Preparation of report summarising the findings of the study and providing broad<br>recommendations.<br>• Project management including quality checks, etc.<br><br>The following would be delivered at the end of the study.<br>• Interview transcripts in English in MS Word format after masking respondent identity;<br>• Content analysis sheet in MS Excel format;<br>• Report in the form of MS PowerPoint; around 20 to 25 (max. 30) slides. | • Content analysis of the interviews;<br>• PPT report and one presentation of the findings;<br>• Project management for the above tasks. |

*Table 4*

It took another 60 minutes to edit the first cut in order to generate the final proposal. The AI tool gave a good structure to the proposal and populated it with the necessary information provided by the user. It also did a good job of using succinct language to describe each section of the proposal, without being verbose. Wherever the AI tool took specific details as inputs, such as the start date of project, end date of project, the cost and the payment terms, it was incorporated into the proposal at the right locations. The key edits required were:

- Incorporating specific details, e.g., explaining certain research objectives with sub-objectives, adding a table with sample sizes by centre, etc.;
- Adding any table or image, e.g., the control research proposal had a Gantt chart with the activities depicted as an image. The AI tool was not capable of generating such images;
- Adding standard introduction about the research agency. This was beyond the scope of the AI tool and had to be added manually by the user.

**Overall, a comparable proposal was ready in less than 90 minutes. With the same time cost, this works out as USD 45. However, the AI tool was not designed to estimate the cost of the project. This task had to be done separately by the user manually, similar to the control study. This activity required another 60 minutes, with the time cost being USD 30. The total time cost was USD 75.**

### *Comparison: Control versus test*

For a comparable output, The AI-assisted approach was faster by over 40%; consequently, it was also cheaper by that amount. With the right inputs, the AI-assisted approach took away the requirement for the user to write a detailed document from scratch, which is common in the traditional approach. However, the AI tool did not perform well in adding specific nuances to the proposal, such as detailed sub-objectives or breakdown of cost by activity. Since such tasks are highly specialised, specific additional tools are required to assist the user further.

Moreover, the AI-assisted approach is likely to save the most time and cost in cases where the researcher has not done very similar studies in the past. Its ability to generate text based on inputs, and organise content automatically reduces the effort needed from the researcher to create a fresh document. In cases where the researcher has experience in similar studies, the AI-assisted approach is likely to be beneficial, but the extent of time savings is likely to be lower.

## 4. Creating a services procurement contract

### *Control study*

Typical research projects require some form of contracting between the research custodian and supplier to sign off on the finalised project terms. This can be as simple as an NDA and a simple one-page contract or a detailed SOW depending on the requirements at the client and supplier.

This is typically crafted by Legal or procurement teams at either end using pre-existing templates and is reviewed and signed by the concerned Research teams.

## *AI-assisted test study*

The idea of including AI assistance to this aspect of the experiment was to understand if the time spent on such essential but non-core work around a project can be reduced for the researchers. The document took the following inputs from the user:

- Type of contract required, such as an NDA (open text field);
- Any key information specifically required in the contract, e.g., data confidentiality clauses (open text field);
- Start date of the project/contract (date field);
- End date of the project/contract (date field);
- Number of parties/signatories (number field);
- Supporting documents, e.g., attaching the final proposal;
- Signature fields to include, such as signature, name, designation, etc. (optional).

The application's interface is depicted in Figure 7.

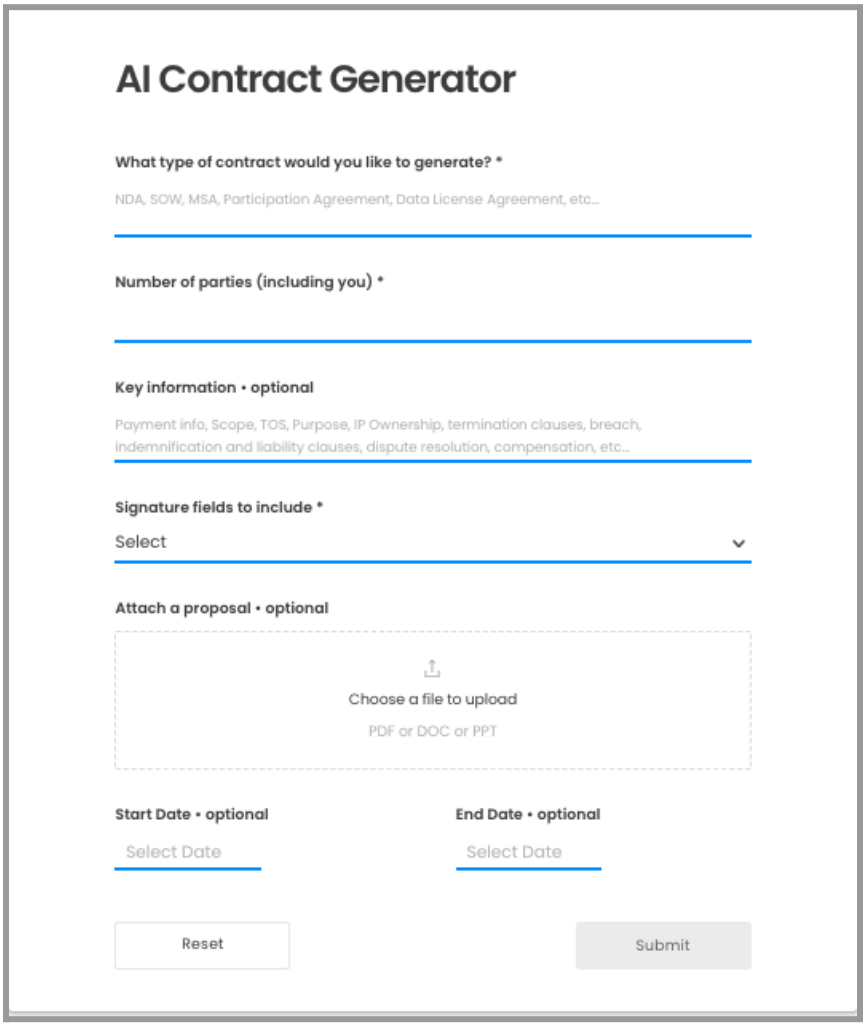
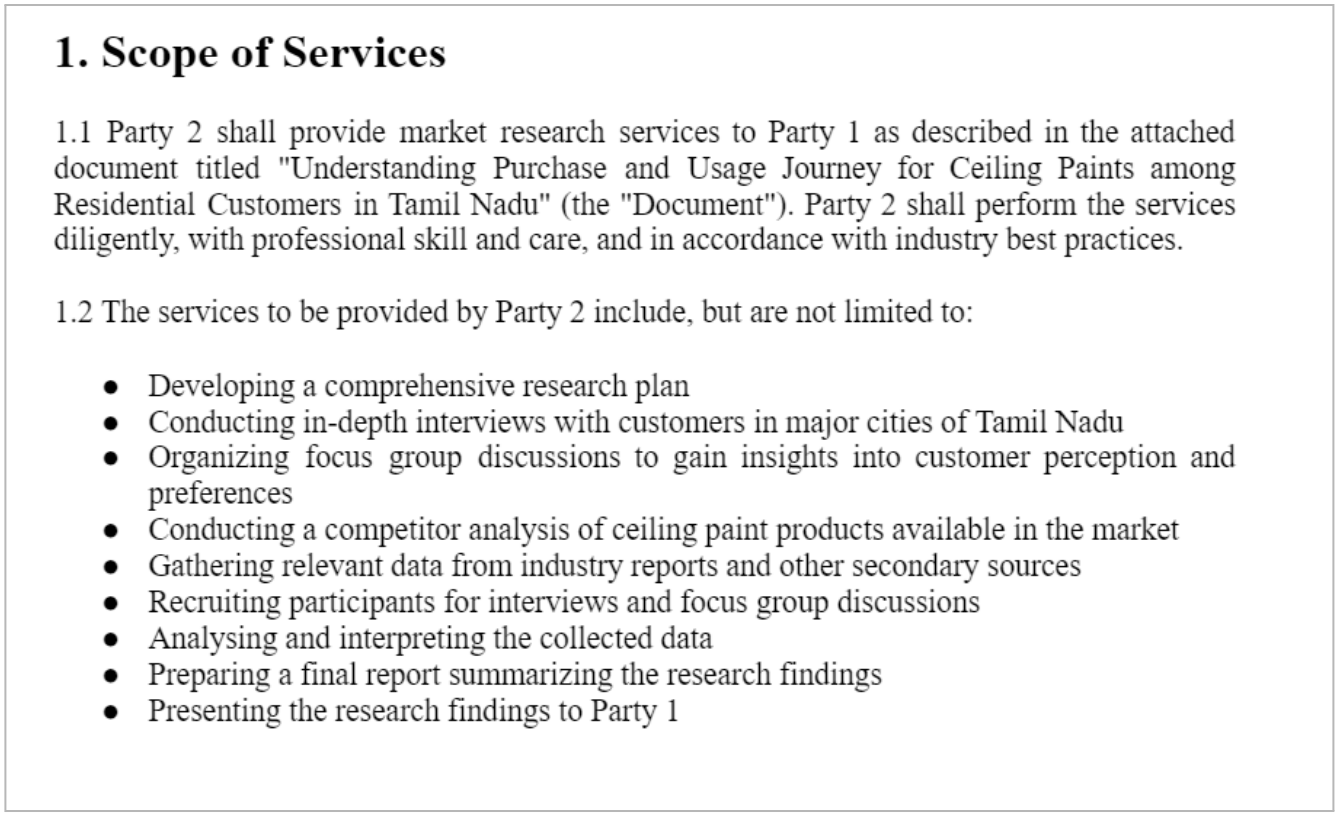



*Figure 7*

The application then generated a services procurement contract, which included all standard clauses in typical legal language. Further, by attaching the final proposal as an input, we were able to incorporate key information like delivery dates into the contract automatically. A few samples of the output document are depicted in Figure 8.



## 1. Scope of Services

1.1 Party 2 shall provide market research services to Party 1 as described in the attached document titled "Understanding Purchase and Usage Journey for Ceiling Paints among Residential Customers in Tamil Nadu" (the "Document"). Party 2 shall perform the services diligently, with professional skill and care, and in accordance with industry best practices.

1.2 The services to be provided by Party 2 include, but are not limited to:

- Developing a comprehensive research plan
- Conducting in-depth interviews with customers in major cities of Tamil Nadu
- Organizing focus group discussions to gain insights into customer perception and preferences
- Conducting a competitor analysis of ceiling paint products available in the market
- Gathering relevant data from industry reports and other secondary sources
- Recruiting participants for interviews and focus group discussions
- Analysing and interpreting the collected data
- Preparing a final report summarizing the research findings
- Presenting the research findings to Party 1

*Figure 8*

## 2. Terms and Conditions

2.1 The term of this Agreement shall be from August 1, 2021, to September 30, 2021, unless terminated earlier by either Party in accordance with the provisions of this Agreement.

2.2 Party 2 shall retain the right to use subcontractors or other third parties to assist in the provision of the services, provided that Party 2 shall remain fully responsible for the performance of such subcontractors or third parties.

2.3 Party 2 shall maintain the confidentiality of all data and insights collected during the research and shall not disclose such information to any third party without the prior written consent of Party 1.

2.4 Party 1 shall pay Party 2 for the services provided in accordance with the pricing set forth in the Document. Payment shall be made in two instalments: 50% due immediately upon accepting the proposal, and the remaining 50% upon completion of the project.

2.5 Any additional expenses incurred during the research project shall be mutually agreed upon by both Parties before implementation.

2.6 This Agreement may not be assigned by either Party without the prior written consent of the other Party.

2.7 This Agreement shall be governed by and construed in accordance with the laws of India. Any disputes arising out of or in connection with this Agreement shall be submitted to the exclusive jurisdiction of the courts of Chennai, India.

*Figure 9*

The exercise of creating the legal document took the following times:

- Three minutes to input the requirements into the AI tool;
- 15 minutes to edit the generated document with specific details like:
    - Exact legal name and identification number of signatory companies;
    - Name, designation and address of the signatories;
- 15 minutes to read the output of the AI tool to ensure there were no inconsistencies.

While there was almost no need to edit the body of the agreement in this particular case, adequate caution is necessary. Since this is a legally binding document, it is important to assess the accuracy of the document finally reproduced by the AI assistant.

### *Comparison: Control versus test*

This particular AI tool is likely to be useful for small to medium companies or individuals who do not have readymade contracts for procuring research services. In less than an hour, they can generate the required legal document for a signature from scratch with just a few inputs, including proofreading.

**For large firms, where draft contracts already exist, these tools help in moving the process online for faster processing.**

## 5. Creating the discussion guide

### *Control study*

The creation of research instruments is an iterative process. The first draft is typically prepared by the research service provider, keeping in mind the research objectives and specific techniques indicated as part of the proposal or subsequently discussed with the client. The discussion guide typically would go through two to five iterations before it is finally approved by the client for use.

In this project, the first draft of the discussion guide was ready in three days and finalised in approximately a week. It took the researcher roughly one work day (eight hours) to complete the first draft of the documents i.e., two discussion guides. There was one revision of the documents based on feedback, which was minor and did not take significant time, so we are counting the time taken for the proposal as one work day. Again, taking the cost as USD 30 per hour, the total cost of this task comes to USD 240.

### *AI-assisted test study*

The AI assistant took the following inputs to generate a discussion guide:

- Business or research objective (free text input);
- Target segment for the study (free text input);
- Topic areas that need to be covered in the discussion guide (free text input);
- Type of interview (in-depth interview or focus group discussion);
- Interview length (range of minutes);
- Any additional instructions, such as the use of a particular technique (free text inputs).

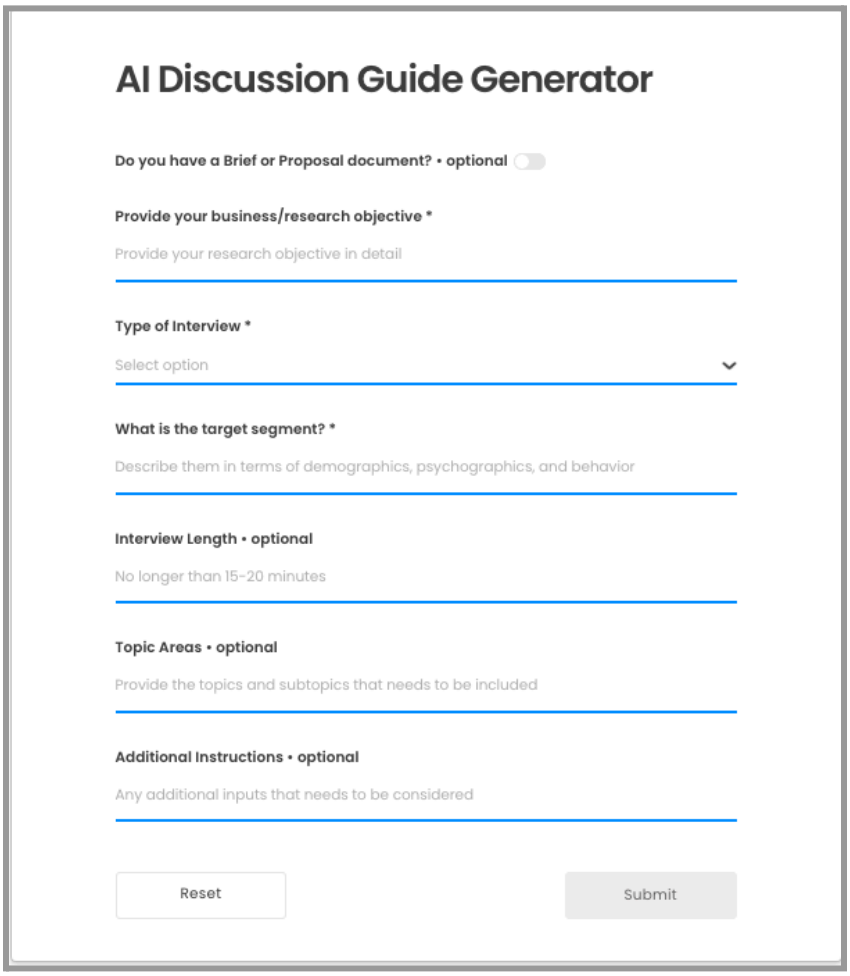



*Figure 10*

With this approach, the researcher was able to generate a discussion guide with the right structure of questions within three minutes, including the time to give the inputs (around two minutes) and the time to generate the output (around a minute).

| Section | Control study | AI-assisted test study (first draft) |
|---|---|---|
| Painting practices | Is there any set frequency or duration after which you get the interiors of the house painted?<br>[IF YES] Typically, after how many years do you get the interior of the house painted? Is there any specific season or month(s) which you prefer for getting the interior painting done? E.g., post-rainy season, before festival season [ASK WHICH FESTIVAL] etc.?<br>[IF NO] How did you decide that the interiors of the house now require painting? What was the triggering factor this time? | Probe into the participants' practices related to house painting, decision-making process, budgets and sources of information.<br>Example questions:<br>How often do you paint the interior of your house?<br>Do you tend to paint in specific seasons/months? If so, why?<br>How do you decide when to start your painting project? Are there any specific triggers?<br>What was your budget for your most recent painting project?<br>What proportion of this was allocated for internal painting?<br>Could you walk me through the entire process of getting your house painted? |
| Painting ceilings | Does the interior ceiling get painted every time the interiors are painted?<br>[IF NOT] What is/are the reason(s) that the ceilings do not get painted at the same time as interior walls?<br>How important is the painting of ceilings as compared to the walls in various aspects.<br>How do you choose colours for wall and ceiling paints?<br>Can you describe the process? Who is involved?<br>Do you visit multiple shops to finalise the colours and textures?<br>Which colour(s) do you prefer for ceiling paints?<br>Why do you prefer this colour?<br>Does the colour for ceiling paint depend on what paint and/or texture is being used for wall paints? How?<br>Are you aware that white itself may come in various shades? | Dive into the specifics of ceiling painting, participants' preferences regarding colour and texture, decision-making and the process of selecting items.<br>Example questions:<br>Do you paint your interior ceilings every time you paint your house? Why or why not?<br>How do you choose the colours for your walls and ceilings?<br>Could you walk me through the process?<br>Which colour do you prefer for ceilings? Why?<br>Are you aware that there are various shades of white?<br>Which factors do you consider when selecting a paint brand for your ceilings? |

| | | |
|---|---|---|
| | [IF YES] Which shade(s) of white, do you prefer for ceiling paint?<br>Why do you prefer this shade?<br>How did you know about various shades of white?<br>What are the various factors which you consider while choosing a paint brand? [DO NOT PROMPT INITIALLY; THEN PROBE FROM BELOW LIST]<br>Brand 1<br>Brand 2<br>Brand 3<br>....<br>Which are the various brands of ceiling paints you are aware of? | |

*Table 5*

The first draft of the output generated by the AI tool could be edited in 120 minutes to a level close to the final approved discussion guide from the traditional approach. Together, two discussion guides took four hours in total. **The tool was able to save over 50% of the time when compared to the traditional approach. With a total of 240 minutes for two discussion guides, the cost with this approach was USD 120, assuming the same per hour cost.**

### *Comparison: Control versus test*

**The AI-assisted approach was able to generate an output with a structure very close to the final approved discussion guide of the traditional approach. This allowed the researcher to start off with a document which had the basic structure and questions covering all the research objectives and information areas ready to go. This accounted for almost all the time saved by the AI tool.**

Where the AI tool lagged was in the detailing of the questions and follow-up questions, as well as specific instructions on probing, termination or specific instructions to look out for and mention, such as a brand name, and following it up with certain specific questions. These had to be added by the researcher manually.

## 6. Creating concept cards

### *Control study*

The control study used websites like Shutterstock to create the stimulus required for the project: the concept cards. The text for the concept cards was written by the researcher in consultation with the client. The final concept cards highlighted the benefits of bright white ceiling paints. Two of the concept cards are depicted below by Figures 11 and 12.

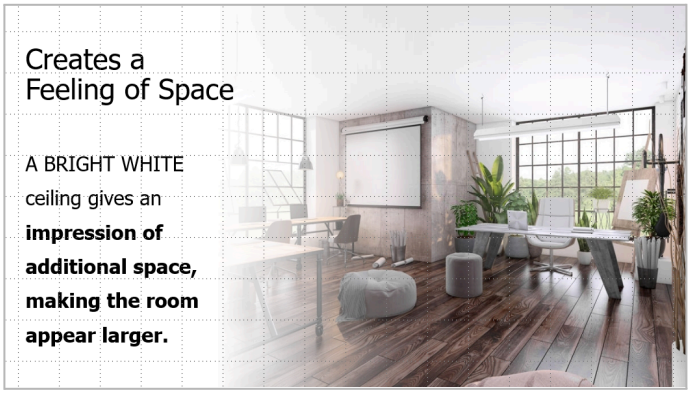



*Figure 11*


*Figure 12*

The development process of the concept cards took approximately eight hours, with both the client and the researcher spending an equal amount of time of four hours. With a time cost of USD 30 per hour for both the client and the researcher (both being senior resources), the time cost works out to USD 120 each for the client and the researcher.

## *AI-assisted test study*

An AI assistant was developed to create the stimulus, with the following inputs:

- The project objective (free text input);
- The description of the concept (free text input);
- The variation in the concept, in the case of multiple concept cards (free text input);
- Type of survey such as quantitative survey, discussion guide or focus group discussion (list box);
- Number of cards to generate (number);
- Target audience for the study (free text input).

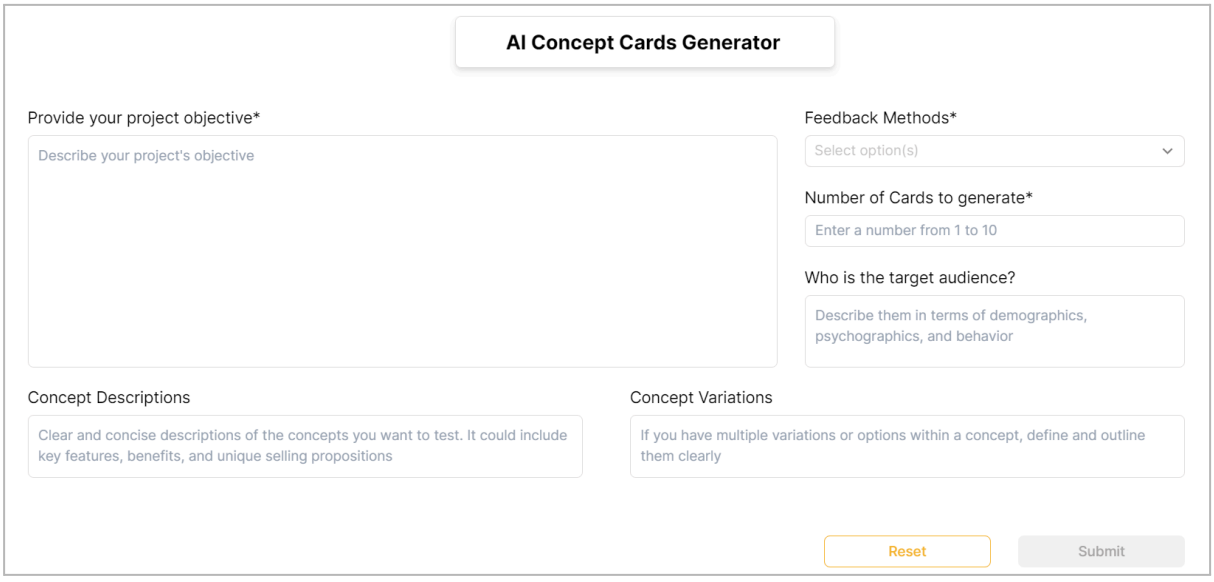



*Figure 13*

The AI tool was not able to generate concept cards matching the control study. The images were not as rich, but tended to be minimalistic. Two examples have been provided below in Figures 14 and 15. In Figure 14, the AI tool automatically assumed an example of a low ceiling height use case for illustrating the benefit of a bright white ceiling paint. However, the client wanted to highlight the roominess for all types of ceiling height. In Figure 15, the image is minimalistic compared to the one used in the control study. It does not do a very good job of highlighting contrasts of a bright white ceiling paint with other colours in the room, and were not something likely to be approved by the client for use in the study. However, the AI tool did save a lot of time. Since AI creates the images based on the prompt, there is no need to go through an extensive library of images or creation of new images from scratch. The entire process of generating the concept cards took less than 15 minutes: 10 minutes going in providing the inputs, and five minutes for generating the output. For each iteration, the inputs can be tweaked a little to get another output until a satisfactory output can be achieved. This works out to a very small cost of USD 7.5 for the images. Furthermore, the cost of the AI software running each iteration is negligible.

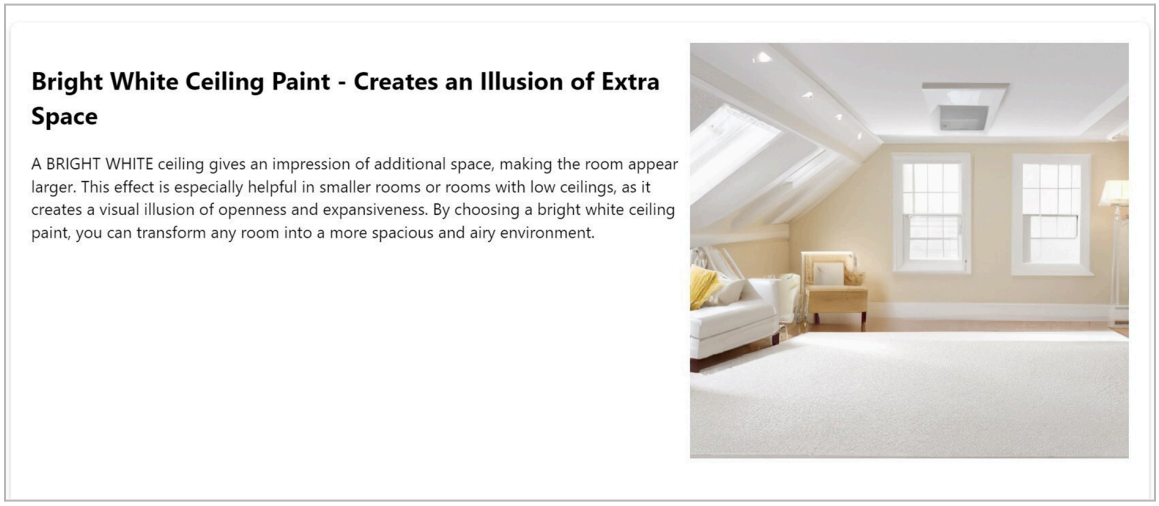



*Figure 14*

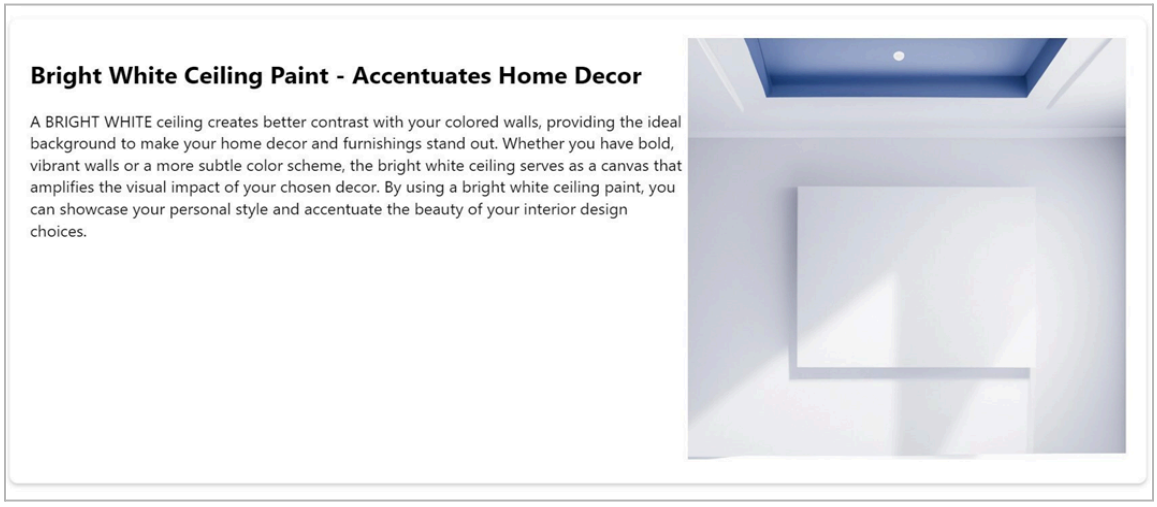



*Figure 15*

### *Comparison: Control versus test*

In this case, the AI tool was found to be inferior to the traditional method. The generated images were not as good as the ones used in the control study. Further, there is a sense of randomness about the images created by the AI tool. With every run, the images are different, making the final output difficult to control. This was not the case in the control study, where one could choose from a vast library of images and tweak the preferred ones slightly to suit the use case. In terms of time and custom, there was not much difference between the control and the test study. The AI tool required several runs to get an image that could be used. Even then, it was not possible to generate images that could finally be selected for the study.

## 7. Developing a field briefing note

### *Control study*

A field briefing note is a document created by the researcher to explain the project and all aspects of the fieldwork to the team who would execute it. The document provides the study background, the research objective, the research methodology, fieldwork centres, sample sizes, type of interviews, etc. In this case, an independent fieldwork agency was engaged by the researcher. The document took approximately two hours to develop. Considering a time cost of USD 30 per day), the cost was USD 60.

### *AI-assisted test study*

We developed an AI tool that took the following inputs from the user to create a field briefing note.

- Project proposal as a file attachment;
- The possibility to add additional instructions, if any (we did not use this input for this study).

The tool also had a provision to indicate if a certain detail required for the field briefing note was missing in the proposal, for instance regarding length of interview. In such cases, the input could be given manually.

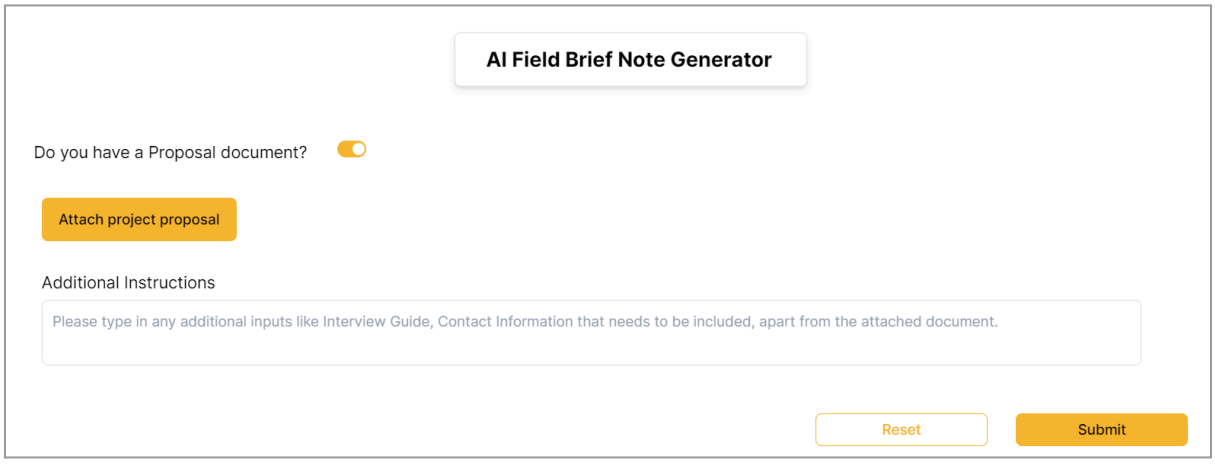



*Figure 16*

Table 6 compares the output of the AI tool with the field briefing note from the control study.

| Heading | Control study | AI-assisted test study (first draft) |
|---|---|---|
| Background | The client is a manufacturer of super white ceiling paint and is planning a rebranding exercise for its product. For this purpose, it wants to conduct an exercise to understand its customers better. | The client is one of the key distributors of Tata Steel in South India. They also manufacture and market products such as general-purpose electrodes, binding wires, fencing material, waterproofing solutions, paints, primers, putty, adhesives, grouts and sealants, as well as sleeve wires. Among their product range is BESTBUILD, which includes wall putty, wall primers, wall paints, tile adhesives and tile grouts. One of their products, BESTBUILD Aqua Ceiling White, is a super bright white paint formulated specifically for ceilings. VNC Group is rebranding this product and would like to understand their customers better by mapping their purchase and usage journey for wall and ceiling paints. |
| | The research would be done through qualitative research methods (in-depth interviews) in Tamil Nadu. The following would be the target segments.<br><br>Households: Households who are currently undertaking interior painting of their residence or have undertaken such work within the last three months.<br>• We can meet only those households living in their own homes, independent ones or flats.<br>• Painting of houses that are let out on rent, leased from others or company-owned accommodation will be out of the scope of this study.<br>• We need to meet SEC A households only. | The research objectives will be met through qualitative research methods, specifically in-depth interviews or expert interviews. The target segments for the primary research will include households and architects/interior designers.<br><br>For households, the following criteria will be considered:<br>• SEC A households;<br>• Currently undertaking interior painting or have done so within the last three months;<br>• Owner-residents of their houses;<br>• Paintable ceilings (no false ceilings).<br><br>Architects/interior designers will be included as they play an important role as influencers in paint selection decision-making. |

| | | |
|---|---|---|
| | • We need to meet only those households who have a "paintable" ceiling. If there is a false ceiling installed in the house, such households can't be interviewed.<br>• Target respondent would be chief wage earner and spouse (husband and wife/heads of household and therefore making decisions regarding materials used for interior painting work such as paint, putty, primer, etc.). Both of them to be interviewed together.<br><br>Architects/interior designers: This segment would comprise of architects who primarily advise individual households around architecture/plan but also, to some extent, interior designing. | |

*Table 6*

In some headings, the AI output also gave an error. It failed to understand the context of the document and included details that were not necessary for a field briefing. For instance, it gave an overall timeline for the project in the first draft, whereas the requirement was to give a timeline specific to the fieldwork component of the study. The draft output of this section by the AI tool is depicted in Figure 17.

*The total time required for conducting the study will be 6 weeks. The major activities and timelines associated with each task are as follows:*
*Study kick-off and discussion guide preparation: Week 1*
*Recruitment and conducting interviews: Weeks 2-4*
*Content analysis: Weeks 4-5*
*Preparation of report: Week 6*

*Figure 17*

## *Comparison: Control versus test*

The AI tool performed favourably in some sections of the field briefing note, such as background, research objectives and methodology. However, it could not adequately detail out the requirement in several other sections, such as the deliverables from the team conducting fieldwork, and the timelines for the fieldwork.

The editing required to change these sections was as much as creating a fresh document manually. Further, the AI tool included unnecessary information, such as the overall cost of the study since it takes the proposal document as an input. Due to these deviations, the edits took almost the same time as creating the document in the control study. Consequently, there are no savings in time with the AI tool, when compared to the control study. The AI tool needs further improvement to be of assistance to the researcher in this step.

## 8. Transcribing recorded interviews

### *Control study*

In the control study, transcriptions were done manually where a transcriber listens to the recording of the in-depth interviews and notes the content, which is a time-consuming process. The 37 in-depth interviews for this study were conducted mainly in Tamil, followed by English. An external agency was used for transcription, who charged USD 4 per transcript. The total cost of transcription was USD 148. A sample of the output is available for comparison in the next section.

### *AI-assisted test study*

The AI assistant was an automated transcription software, which accepts audio files and provides a transcription. The user could also provide an input for any special instructions that the user may want to give, such as certain words that may be difficult to understand. In this study, no special instructions were required. The interface of the application is depicted in Figure 18.

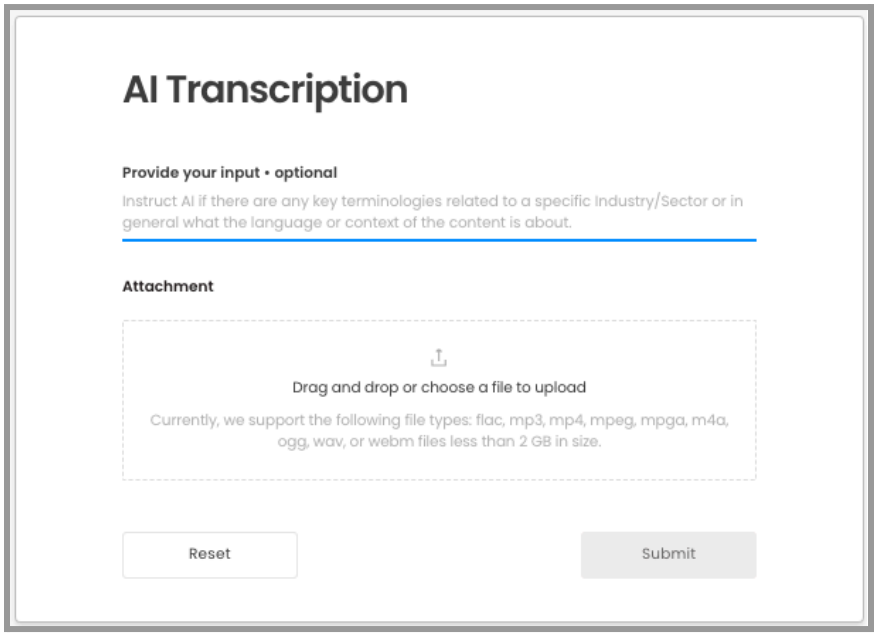



*Figure 18*

**The AI-assisted transcription for this exercise took seven to 10 minutes per transcript per audio file, depending on their length. The transcriptions could be done as interviews were completed. In all, the transcription process would take just under five hours for all 37 interviews**.

The output of the transcription from the control study is compared with the one generated through AI (the first draft). The AI tool was able to capture a lot more detail, without missing anything spoken by the respondent. However, it does make some minor errors, such as assuming that the house area is in square metre (respondent did not clearly specify this).

| Control study | AI-assisted test study (first draft) |
|---|---|
| My name is Aishwarya. My husband's name is Anbarasan. He is an accountant and I am working in IT.<br>*Anbarasan is he available?*<br>Yes, I am Anbarasan I am working as an accountant [h]<br>*Anyone else is working in your family?*<br>No. my parents are there [h]<br>*The house where you are living now, how long since it got constructed?*<br>Five years before I constructed and painting alone I have recently done fully.<br>*Total built up area of your house?*<br>750 sq ft<br>*Living space carpet area only how much?*<br>580<br>*How many rooms are there?*<br>One hall, one bedroom and one kitchen [h]<br>*Apart from these is there any drawing room or living room and dining room?*<br>Yes, living room is there and one store room. One bathroom is outside while one is attached bathroom. Bedroom is batch attached. There is veranda also [h] | Okay. Please introduce yourself. My name is Aishwarya. My husband's name is Anbarasan. He is working as an accountant. I work for an IT company. Is Mr. Anbarasan here? Yes, he is here. Please introduce yourself. What have you studied? I am studying engineering. I am an accountant. That's all. Okay. Do you have any other family members? No. I have no parents. Okay. How long have you been living here? About...20 years? No. I came here five years ago. Okay. I started painting recently. Okay. What is the total area of your house? It is 750 sqm. Okay. How much is the carpet area? 580 sqm. Okay. How many rooms do you have? One hall, one kitchen and one bedroom. Okay. Do you have drawing rooms, living rooms, dining rooms? Yes, we have living rooms. We have living rooms and storage rooms. Okay. How many bedrooms, bathrooms, kitchens and storage rooms do you have? We have two bathrooms. We have two bathrooms, one kitchen and one storage room. Bedroom? Yes, we have two bedrooms and one storage room. Okay. Do you have any other rooms? We don't have any other rooms. We have only one room. |

*Table 7*

The output of the AI tool now needed to be formatted by the researcher in order to classify it across specific questions, similar to a manual transcription exercise. We estimate that each file would take 30 minutes to format, and one could use a resource at USD 7.5 per hour. This works out to USD 3.75 per transcript and USD 139 in total. By modifying the AI tool to

send the transcript over email, the time taken to upload each of the 37 audio files would be negligible. The cost of OpenAI software to do the transcription is also minor in this case—i.e., likely to be less than USD 2 for all the transcripts.

### *Comparison: Control versus test*

The cost of manual transcription in the control study was USD 4 per audio file. The advantage of the manual method is that the output is formatted by the transcription service provider in a Q&A format to make it easier for the researcher to understand. In the case of AI-assisted transcription, the cost of the AI programme itself is minimal (i.e., in the decimals of a dollar). The cost for manually formatting the output of the AI tool works out as USD 3.75 per transcript. Hence, the cost is quite similar between the two approaches. However, in terms of time saved there are significant advantages. Finally, formatting the final output may not even be required if the content analysis is done by the AI; we will see how that can be done in the next step. Automated transcription is already quite popular in market research. With the addition of multilingual capabilities, automation is likely to become the norm. Over time, these tools will also be able to format the output in such a way that they can be easily used by other tools for analysis.

## 9. Performing content analysis

### *Control study*

Content analysis is the key step that aligns customer verbatims with discernible patterns, revealing the key insights from the conversations. Typically, someone would read through each transcript of a study and neatly arrange the findings on a 2X2 matrix, usually on a spreadsheet. The rows would be each respondent, and the columns would be each question that the respondent answered, or vice versa. By laying out the findings in this manner, a researcher can identify patterns much more easily, thereby getting ideas on telling the story in the final report. A sample of the content analysis from the control study is depicted in Figure 19.

| File Name | Analyst | Location | | Q8: Decision Making Process | |
|---|---|---|---|---|---|
| | | | Advice Regarding Ceiling Paint? What Advice? | Major Decision Makers & Final Decision Maker | Decision Making of Walls versus Ceiling |
| Column 01 | Col 01A | Column 02 | Column 16 | Column 17 | Column 18 |
| Transcript-Project Ceiling-HH-Chennai-Aishwarya and Anbarasan | Pranjul | Chennai | Ceiling alone for this nothing he told [w].....They have their own designs textures but choice is ours only. We did not think too much into the designs except the leaves on the wall. We were particular that on painting it should be bright to look at. It should not lead to repeat painting in short duration. We were conscious about it. They told a few paints but he declined [w].....No. this is an old house so he suggested for emulsion or double coat but they did not advise too much [w] | My husband and my father in law both discussed about these and father in law advised which paint would be good [w].....Always the elders only [w] decision considered | There should be contrast color compared to wall colors [w] |

*Figure 19*

The manual approach in this case was no different. Rahul did the content analysis manually for all the 37 qualitative interviews. It took him 30 minutes to complete each transcript: a total time of 18.5 hours. Considering a time cost of USD 30 per hour, this works out to USD 555!

## *AI-assisted test study*

In the AI-assisted approach, all the user had to do was upload all the transcripts and the discussion guide and the rest of the process for generating the content analysis was automatic, with the output being emailed to the user! The user interface for the application is depicted in Figure 20.

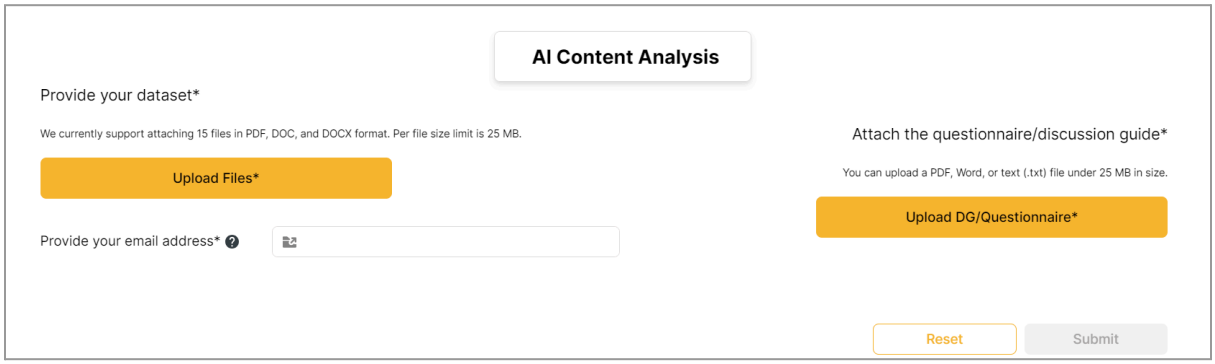



*Figure 20*

With this approach, **we were able to obtain the content analysis within 24 hours. For the user, the time taken is only for uploading the content analysis and the discussion guide. The processing was done at the back end, without utilising the time of the user.** Figure 21 offers a sample of the output generated by the AI tool.

| File Name | How did you get the last/current interior painting work done? | Who is involved in the decision-making process for interior painting? | What are the major sources of information you used to collect information regarding ceiling paints and other materials? |
|---|---|---|---|
| Transcript-Project Ceiling-HH-Chennai-Aishwarya and Anbarasan.docx | The last/current interior painting work was done by approaching contractors. The workers with the contractor inspected the area, provided an approximate rate, and purchased the paints. The homeowners specified the materials to be used and received a quotation for both labor and materials. The contractor was responsible for completing the total painting job as per the agreement. The homeowners chose the colors and textures with the help of the contractor's suggestions. They did not consult with architects or interior designers to avoid additional costs. The focus was on bright, long-lasting paint that would not require frequent repainting. The elders in the family provided advice on the paint selection process. The ceiling was painted with a contrast color compared to the wall colors, preferably a light shade like cream white. The source of information for paints included commercial ads, online search, and information from neighbors. The importance of ceiling painting was considered on par with wall painting, and factors such as cost, quality, and durability were crucial in choosing the paint brand. | The decision-making process for interior painting involves the husband, wife, and father-in-law. They discuss and decide on the brand and color options for the paint. They do not consult architects or interior designers as they believe it would increase the cost. The elders' opinions are considered significant in the decision-making process. | The major sources of information they used to collect information regarding ceiling paints and other materials include commercial ads, Google search for rates, information from houses in the local area, TV ads, YouTube ads, Instagram, Facebook ads, suggestions from elders, and color cards provided by the painting contractor. They rarely checked with dealers and relied more on the contractor for color options and textures. |

*Figure 21*

We found the cost to be approximately USD 5. Exact cost is indeterminable due to the way the service is billed by OpenAI in terms of tokens.

## *Comparison: Control versus test*

The output of the AI tool was found to be rich and detailed. For example, Table 8 provides the responses by three respondents on a single question: "Who in the entire household is involved in decision-making regarding the interior painting process?"

| Respondent | Control study | AI-assisted test study (first draft) |
|---|---|---|
| 1 | My husband and my father-in-law both discussed these and my father-in-law advised which paint would be good [w]...Always the elders' only [w] decision considered. | The decision-making process for interior painting involves the husband, wife and father-in-law. They discuss and decide on the brand and colour options for the paint. They do not consult architects or interior designers as they believe it would increase the cost. The elders' opinions are considered significant in the decision-making process. |
| 2 | Me, my wife. Even the kids choose the colour. My husband's decision is final. | The decision-making process for interior painting involves multiple members of the family. The husband and wife play a significant role in making decisions regarding the paint colours and designs for the walls and ceilings. The children also have a say in choosing the colours for their rooms. Ultimately, the husband's suggestion is the one that is finalised. Additionally, the family seeks the advice of interior designers or architects who assess the condition of the house and provide advice on suitable products and options. The contractors hired for the painting job also provide suggestions on colours, designs and even the type of paint suitable for ceilings. |
| 3 | Me and my husband. Actually we have called an interior designer and he asked around one and one and half lacks so we said no as our budget is not that much...final decision—it's mine only that is in choosing of colours, contacting contractor, at the time of work, payment terms. | The decision-making process for interior painting involves Lavanya and her husband. The last interior painting work was done by contacting and hiring a contractor. The respondent and her husband personally chose the colours and arranged for the painting materials. |

*Table 8*

As can be seen from the output in Table 8, the ability of AI to read and analyse large amounts of text is outstanding. Specifically, the AI tool was programmed in such a way that it was able to pick out answers for the question from the entire transcript, wherever the question or an associated question had been answered. In the manual approach, it is challenging for the person doing content analysis when a certain question is answered out of context elsewhere in the discussion.

Further, the AI tool is not affected whatsoever by fatigue or information overload. While this study had 37 interviews, the output of the AI tool is unlikely to drop in the case of 100 or more qualitative interviews as well. As the number of interviews increases, the output of the manual approach is likely to take exponentially longer and be prone to errors.

## 10. Developing the report

### *Control study*

Report writing is the most important task for the researcher, the effort undertaken across all the previous steps is to provide the best possible opportunity to get compelling insights around the business questions. The greater the time and support available to generate insights, the greater the opportunity for better insights. In this case, the researcher had a specific mandate to keep the report short and actionable. The final MS PowerPoint report was around 30 slides, with each slide being developed manually by the researcher, by detailed analysis of the data. Rahul did the report writing in a week. Considering a time cost of USD 30 per hour, with each day consisting of eight hours, this works out to USD 1,200.

### *AI-assisted test study*

For this task, we developed an AI tool that generates ideas from the automatically generated content analysis document. After uploading the document, the user can start querying it for specific answers that they would like to have answers for.

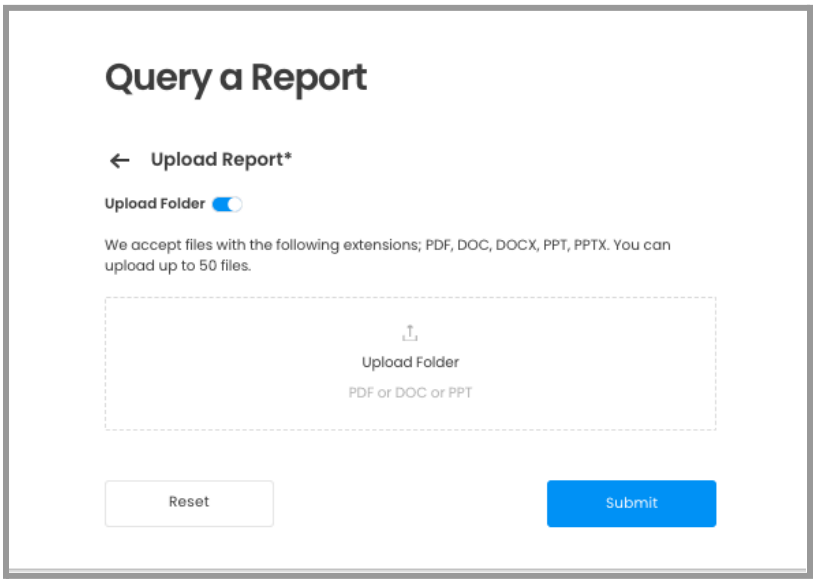



*Figure 22*

For instance, one question was, "Is there any typical frequency that people opt for painting their houses?" When such a query is made, the AI tool provides a respondent-wise answer to the question and a summarised analysis of the information as depicted in Figure 23.

Based on the above analysis:

- Approximately 50% of the respondents mentioned a typical frequency of painting their houses once every 2-3 years.
- Around 30% of the respondents mentioned a typical frequency of painting their houses once every 4-5 years.
- The remaining respondents mentioned frequencies ranging from once every 5 years to once a year.

Therefore, based on the responses, there is no single standard frequency that people opt for when painting their houses. The frequency seems to vary depending on individual preferences, budget, and the need for a fresh look or special occasions.

*Figure 23*

Using this information, the researcher could start developing ideas on the structure and story of the final report. This assistance from the AI tool could enable the researcher to reach insights faster. For instance, the AI tool correctly indicated that most of the respondents painted their house every two to three years, which was the finding reported in the control group as well (relevant slide depicted by Figure 24). The frequency of painting was also identified by the AI tool, which eliminates the need to count manually, as was done by the researcher in the control study.

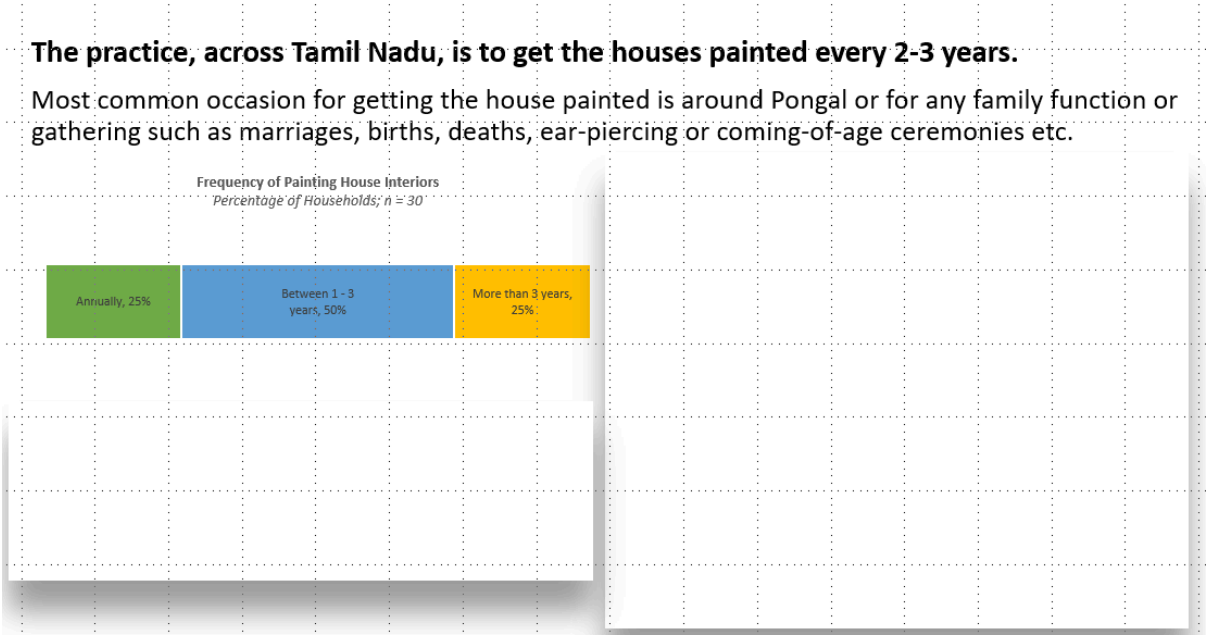



*Figure 24. Note: Only relevant portions of the slide shown for the purpose of this paper.*

Similarly, we used other questions to generate ideas from the content analysis output. A few samples are given in Figure 25, which depicts the output for the following query to the AI tool, "What is the practice with regard to consulting architects or interior designers on home painting?"

Based on the above responses, it can be observed that not all respondents consulted architects or interior designers for advice on home painting. Some respondents did not consider their advice as important or necessary, while others sought their advice for various aspects of the painting process, such as designs, colors, textures, brands, contractors, and laborers. The extent to which architects or interior designers were consulted and the importance given to their advice varied among the respondents.

*Figure 25*

The AI tool was able to correctly identify that architects and interior designers are not as involved or considered necessary when painting the house. Figure 26 is the relevant slide made by the researcher from the control study for comparison.

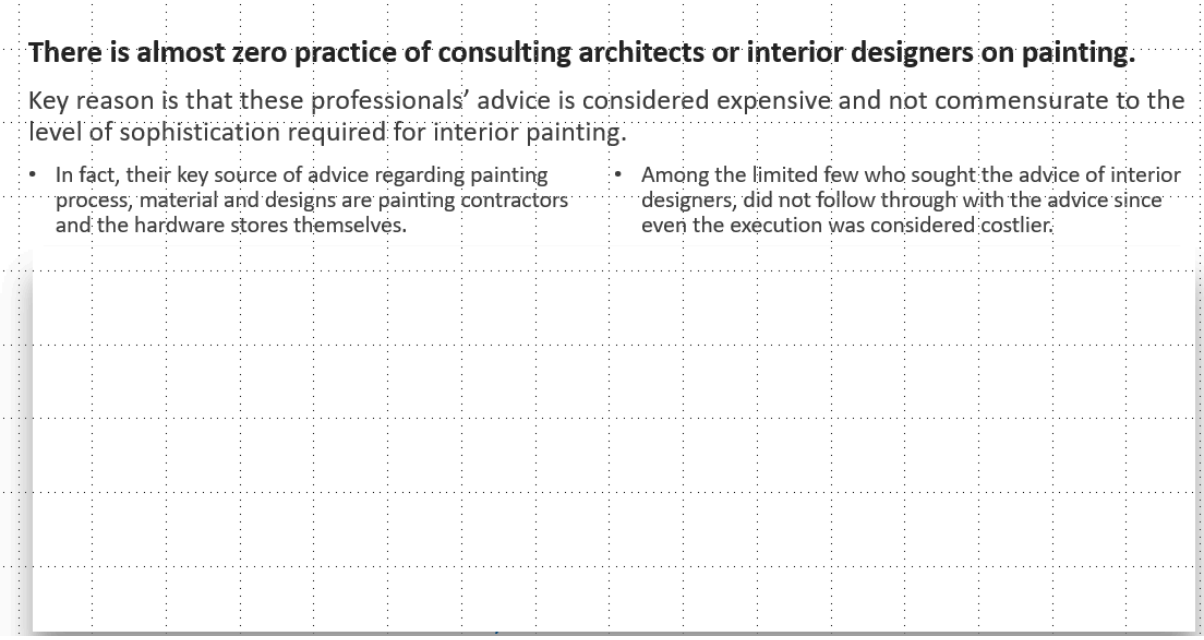



*Figure 26. Note: Only relevant portions of the slide shown for purpose of this paper.*

Figure 27 depicts the output for the following query to the AI tool, "Which members of the family are involved in deciding the paint brands and colour? Who has the final say?"

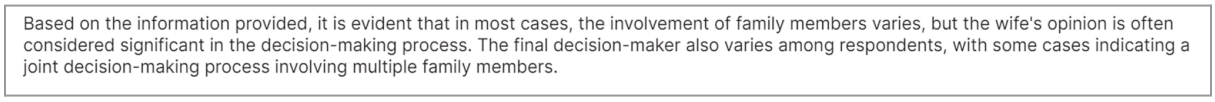



*Figure 27*

The AI tool correctly identified the important role of the wife in the decision-making process and the involvement of multiple family members. The corresponding slide made by the researcher in the control study is shown by Figure 28, which provides a similar finding. Some of the additional insights available on the slide could also be generated by the AI tool if queried specifically on it, e.g., the role of children.

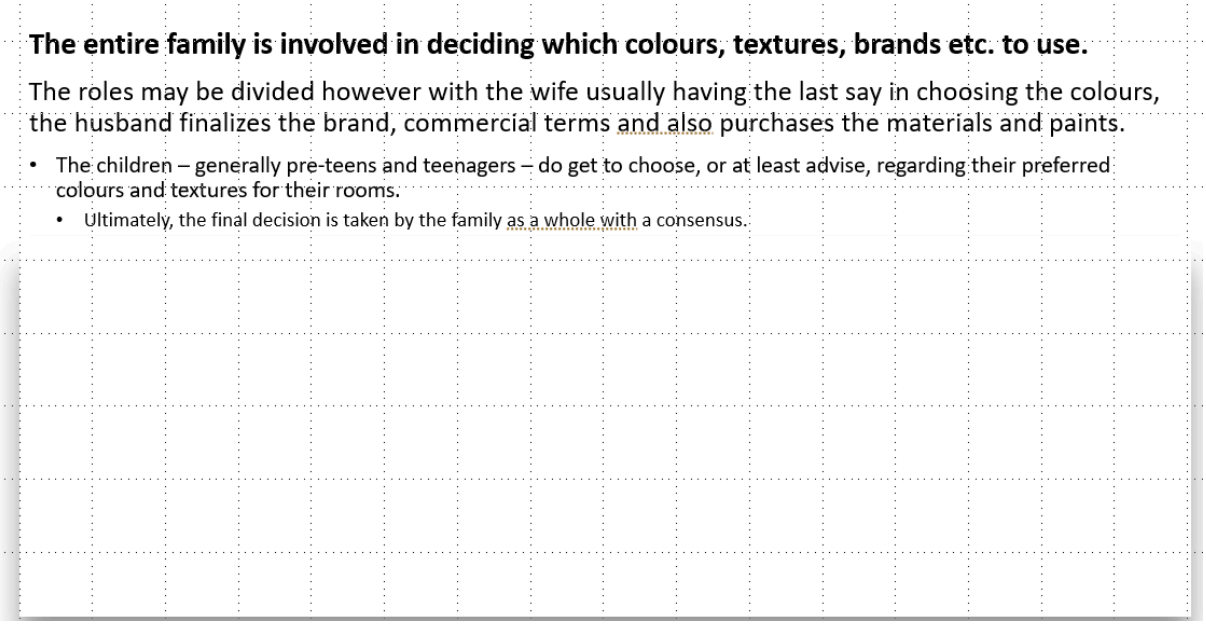



*Figure 28. Note: Only relevant portions of the slide shown for purpose of this paper.*

Figure 29 depicts the output for the following query to the AI tool, "What are the top factors which households consider for choosing paint brands?"

Based on the analysis of the respondents' answers, the top factors considered by households for choosing paint brands are as follows:

1. Quality and durability of the paint - mentioned by multiple respondents
2. Recommendations from friends, relatives, and retailers - mentioned by multiple respondents
3. Availability in nearby shops - mentioned by multiple respondents
4. Personal preference - mentioned by multiple respondents
5. Reputation and years of experience in the market - mentioned by multiple respondents
6. Cost - mentioned by multiple respondents
7. Range of colors and design options - mentioned by multiple respondents
8. Trustworthiness and professionalism of the brand - mentioned by multiple respondents
9. Compatibility with other interior elements
10. Recommendations from contractors or interior designers
11. Familiarity and recognition in the market
12. Positive advertisement and reviews

It is important to note that not all respondents mentioned specific factors, and some factors may have been implied rather than explicitly stated by the respondents.

*Figure 29*

The AI tool correctly identified that quality and durability is the most important factor followed by several others. The corresponding slide (see Figure 30) made by the researcher in the control study came to a similar conclusion.


*Figure 30. Note: Only relevant portions of the slide shown for purpose of this paper.*

Figure 31 depicts the output for the following query to the AI tool, "Which brand is considered to be the best brand for paints?"

Based on the above analysis, it can be concluded that Asian Paints is considered the best brand for paints according to the majority of respondents. Approximately 73% (11 out of 15) of the respondents specifically mentioned Asian Paints as the best brand for paints, while the remaining respondents did not mention any specific brand. Therefore, Asian Paints is the most commonly recommended brand and can be considered the best brand for paints based on the provided information.

Please note that the analysis is based solely on the information provided and the branding perceptions of the respondents. Other factors such as market share, sales data, and customer reviews were not available in the provided context.

*Figure 31*

The AI tool indicated that Asian Paints was considered to be the best brand by majority of the respondents. The corresponding slide (see Figure 32) prepared by the researcher in the control study is depicted below; it came to a similar conclusion.

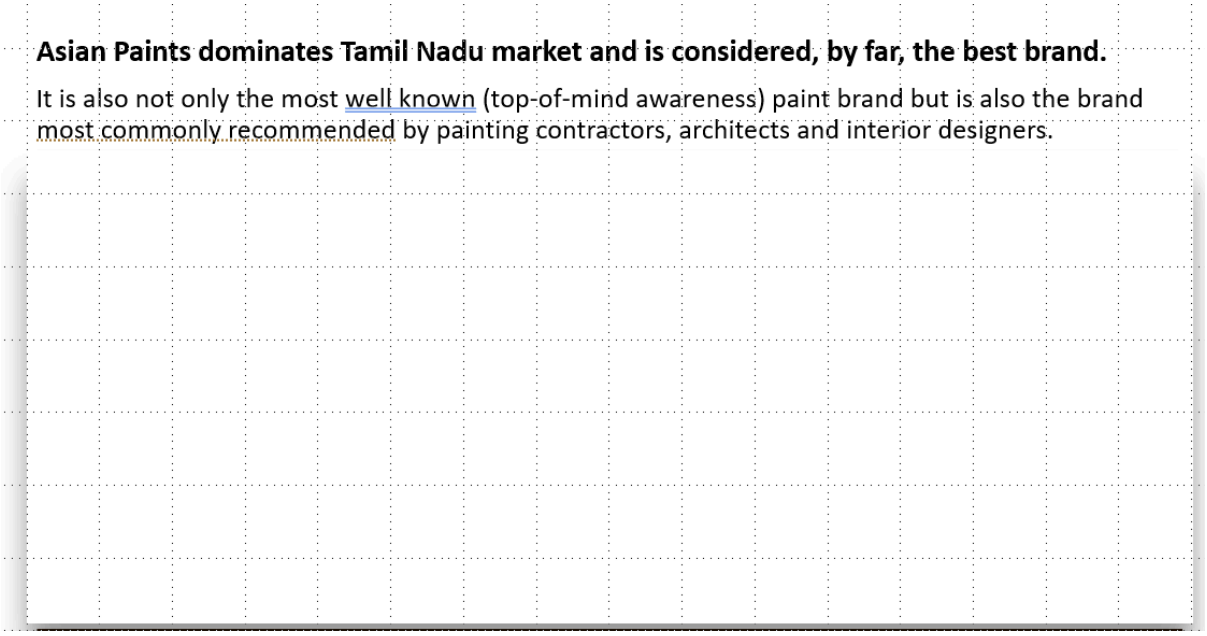



*Figure 32. Note: Only relevant portions of the slide shown for the purpose of this paper.*

### *Comparison: Control versus test*

The researcher who developed the report in the control study felt that such an AI tool could potentially cut the time taken for report writing by 20 to 40%, by experimenting with the question-answer format to gain key insights. Rahul estimated that he could cut the time of report making from the five days taken in the control study down to three days. The corresponding cost of developing the report with the help of the AI tool would be USD 720 to 960, assuming the same time cost. The AI tool acts like a knowledgeable assistant that has "read" the content analysis in advance, and which can be queried infinitely on the information it has "read". After using it a few times, the researcher felt confident that the AI tool was delivering findings correctly, without adding information beyond what is available in the transcript, which was a key consideration for him. Once the basic insight was given by the AI tool, the researcher would do the following to develop a slide with insight:

- Ask adjacent questions relevant to the topic to gather additional slides;
- Being a qualitative study, find specific quotations that support the finding;
- Develop the slide manually based on the available information, while adding his inputs.

Specifically, the researcher would have to look at the bigger picture and story in the report, since the AI tool is designed to answer specific questions to the point.

# Conclusion

Executing virtually every research step through an AI tool was a great learning experience. Through this A/B test, we were able to ascertain the value of AI through the lifecycle of a project. Therefore, does it improve effectiveness and efficiency as we hypothesised? Let's take a look at each of the steps and understand how the AI-assisted test study did when compared to the test study.

| Task | Effectiveness* (quality) | | Efficiency (time & cost) |
|---|---|---|---|
| | First draft | Final draft | |
| Creating the brief (insight requirement) | Lower | Similar | + 210 minutes<br>+ USD 105 |
| Searching for service providers | Higher | Higher | NA |
| Creating the proposal | Lower | Similar | + 90 minutes<br>+ USD 45 |
| Creating a services procurement contract | Higher | Higher | NA |
| Creating a discussion guide | Lower | Similar | + 210 minutes<br>+ USD 105 |
| Creating concept cards | Lower | Lower | + 465 minutes<br>+ USD 233 |
| Creating a field briefing note | Lower | Lower | No savings |
| Transcribing recorded interviews | Higher | Higher | + USD 146* |
| Performing content analysis | Higher | Higher | + 1,110 minutes<br>+ USD 550 |
| Developing the report | NA | NA | + 720 minutes<br>+ USD 360 |

*Table 9. Note: The cost of the AI software (OpenAI) itself is often negligible when compared to the savings. Through our entire development process with AI in the months of July and August, we have spent less than USD 20. For comparison, just an hour saved from a senior researcher's time is worth USD 30 in India!*

* If transcribed output directly used for content analysis without formatting.

**From the above analysis, we can conclude the following:**

- AI tools are good at generating the first draft of documents. While they may not be ready to go at the first draft stage, a user can edit the output and reach a document quality similar to a traditionally prepared document at a much lower time and cost. This was evident to a high extent when creating briefs, and to a lesser albeit still significant extent in proposals and discussion guides. In cases where the AI tool was not able to create the document well, such as a field briefing note, it should be possible to further develop these AI tools to get similar benefits.

- AI tools are outstanding at reading and analysing large amounts of qualitative text quantitatively. They are far more efficient in process-oriented tasks like content analysis, and do a near perfect job without any fatigue. This ability can be expected to have a significant impact on the way qualitative data is analysed in the future. Even in creative tasks like report generation, AI tools can read analysed content and generate potentially insightful information or reporting ideas quickly; thereby enabling the researcher to focus on the bigger picture and story.

- The audio processing capability of AI is far superior to manual transcription. They can generate near perfect transcripts in minutes and have native multilingual capability. While the output is not formatted, it should be either possible to add formatting capabilities or process the output automatically using other AI tools, forgoing the requirement to do formatting altogether.

- Image generation capabilities of AI tools are not quite there yet. The quality of generated images is not as good as those available in image libraries. However, AI tools are able to generate these images much faster than a manual search. Once their capabilities improve, it is not inconceivable that tasks like concept card generation can be done using AI tools effectively.

- AI tools allow companies to do what they otherwise could not. For instance, generate a services procurement contract or an NDA. They can also allow companies to find similar experts through platforms having AI capabilities.

Overall, we believe that there is sufficient evidence to prove our hypothesis to be correct. AI tools can increase the effectiveness and efficiency of several market research tasks already. The quantum of increase can vary by task significantly, but the overall benefits are evident. As these tools develop further, they are likely to impact almost every aspect of the market research process.

What we also learnt is that these tools, however, cannot replace the “human in the loop”—at least in their current capacity. The ability to make non-linear connections, create ring fences on what not to do to maintain the research rigour, ask the right questions of the data and take the leap of faith to generate insights, is something that firmly continues to stay in the human realm.

# About InsightGig

**InsightGig is a Global Marketplace built for Insights by #InsightFolks,** to help you augment your Insight Team and improve your research productivity,

Our AI Tools are designed to improve the productivity of Insight Teams by over 50% while our Talent Marketplace provides you with on-demand expert resources for all your research requirements.

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