

USAGE MANUAL

IRT Online Tool Usage Manual

Version 1.1

July 2025

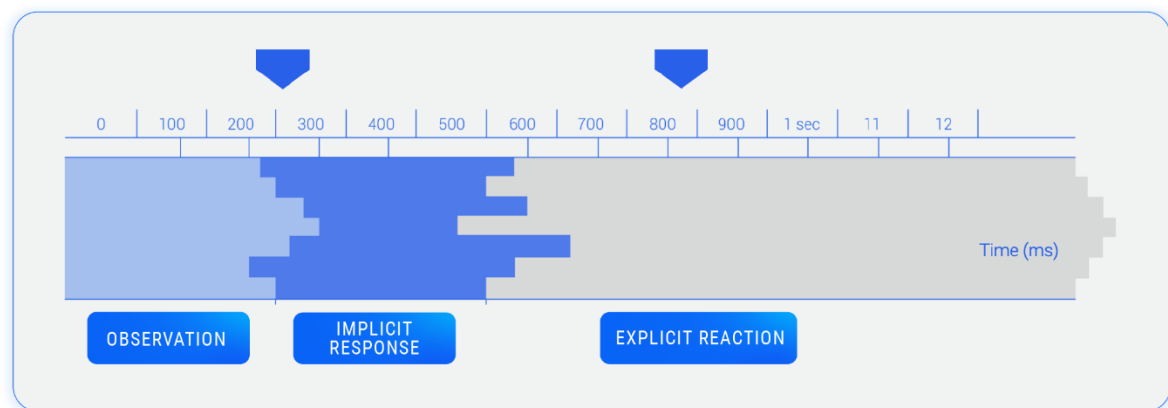
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1. Introduction

IRT Online Platform is a **web application designed to manage Implicit Response Tests** (including the management of participants, the definition of segmentation, and the monitoring and analysis of results).

These tests measure how quickly users categorize stimuli or attributes into different concepts, assessing both response times and participant errors to evaluate association strength. It identifies three phases in information processing and reaction timelines:¹.

- Observation
- Implicit Response
- Explicit Response

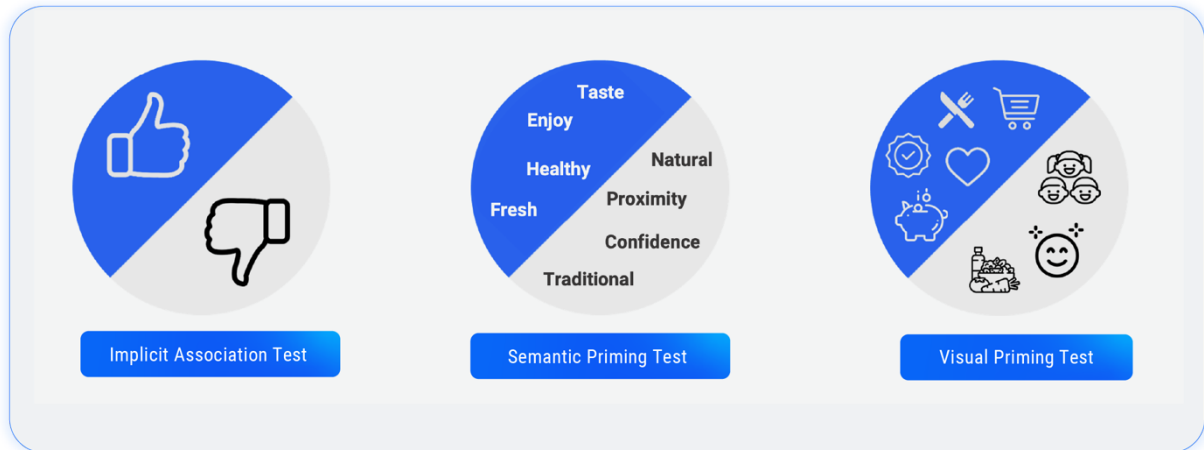


This platform allows users to create implicit response tests online. They can manage the entire process, including creation, execution, follow-up, and results. The IRT Online Platform enables users to perform three types of tests:

- Implicit Association Test
- Semantic Priming Test
- Priming Visual Test

¹ For more information about the test methodology, consult info@bitbrain.com about theoretical training.

The test is distributed through a link to the participant, who can access it via computer or mobile device. The entire tool is a web application, so only internet access is needed for management.



This document has been created to be capable of designing, executing, and interpreting the results of any type of test available on IRT Online Platform. We provide examples for better understanding.

If technical documentation of the platform is required, it is recommended to consult the [User Manual](#).

2. Implicit association test (IAT)

2.1. INTRODUCTION

The objective of the Implicit association test (IAT) is, based on a comparison of two concepts, to determine which of the two is perceived more positively (or another attribute) and to what degree of difference.

To design the test, select two concepts that need to be represented through images and/or words. During the IAT test, participants will assign positive and negative attributes to these concepts, and the algorithm will measure classification response times to determine unconscious bias toward each concept.

Following this method, studies can be conducted on brand comparisons, claims, packaging, promotions, or any other comparative concepts to determine which is perceived more positively in the consumer's mind. These tests can also be used for psychological and human behaviour studies.

To see possible applications consult [ANNEX I](#).

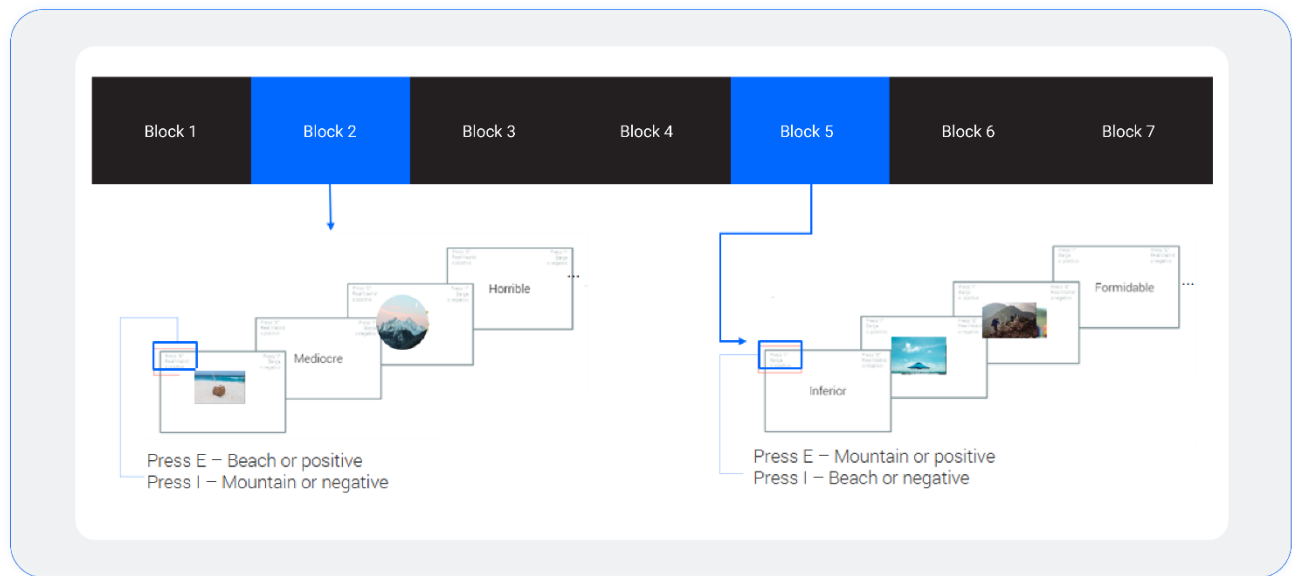
2.1.1. TEST METHODOLOGY

After understanding the basis of an IAT, we will explore how it is structured in blocks and the phases participants go through to achieve results.

The test consists of 7 blocks varying in duration based on defined stimuli. Blocks are structured as follows for an example with 20 repetitions each: | 20 | 20 | 20 | 40 | 20 | 20 | 40 |.

Classification alternates between Concept A with "Positive" and Concept B with "Negative", and Concept A with "Negative" and Concept B with "Positive", by changing the classification keyboard to mitigate bias.

Block 1 serves as a familiarization phase; response analysis is based on blocks 4 and 7. Blocks are randomized to eliminate biases from learning or key predispositions.



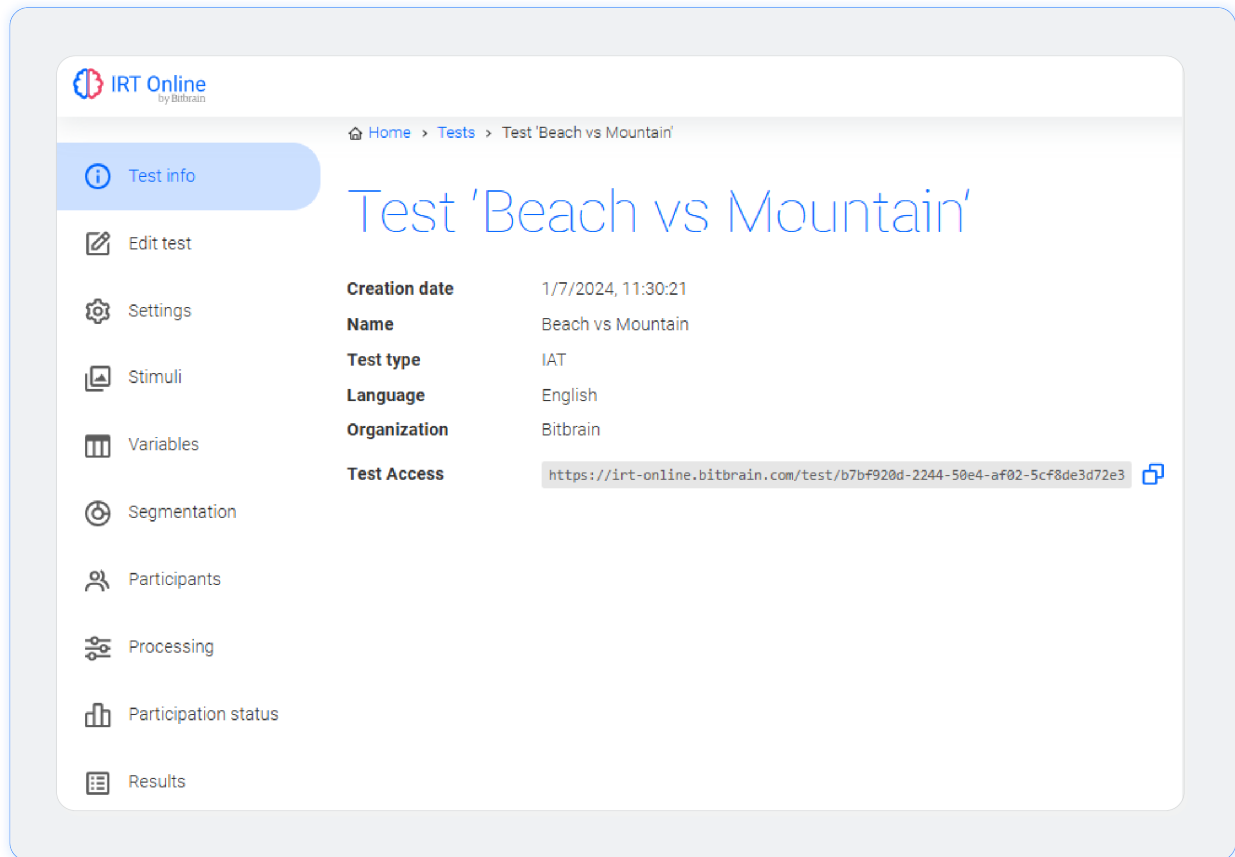
2.2. STUDY DESIGN

The study design encompasses several steps to consider before it can be sent to the participants depending on the objectives to be achieved. In this section, the procedure for carrying out each step based on these objectives is explained.

To define the steps, a series of parameters must be completed on the platform. Below is an explanation of each section along with a practical example.

Can I see an example:

To improve comprehension, we will follow each step with a test example for better understanding.

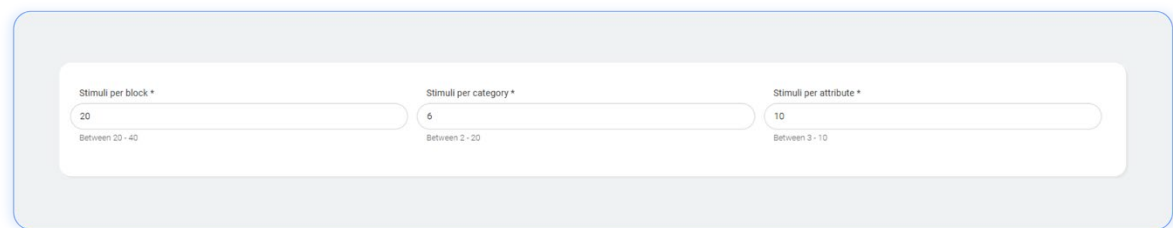


2.2.1 STIMULI

Once the procedure is understood, the next step is to know how to create the test content. This tab is used to select the number of stimuli by type and define the material to be evaluated.

Number of stimuli

The stimuli number can be selected on the header page.



The screenshot shows a header section with three input fields, each with a label, a value, and a range:

Stimuli per block *	Stimuli per category *	Stimuli per attribute *
20	6	10
Between 20 - 40	Between 2 - 20	Between 3 - 10

How many stimuli per block, category and attribute are recommended?

- **Stimuli per block:** Number of stimuli that will appear in each block. 20 stimuli per block is the minimum allowed on the platform. It is recommended to leave this parameter as the default. However, in specific cases it could be increased to reiterate the evaluation of the categories. This number will be duplicated in the test blocks.
- **Stimuli per category:** These stimuli represent the selected category. 2 stimuli per category is the minimum allowed on the platform. It is recommended to use at least 5 stimuli per category for a proper test. However, it can be increased or decreased depending on the necessary elements to represent the categories in a comparable manner. The same proportion of image or text stimuli must exist in both categories.

Example: If a category "X" has been defined with 4 image stimuli and 3 text stimuli, the "Y" category must be the same: 4 image and 3 text.

- **Stimuli per attribute:** Stimuli that will represent the attributes categories (Positive/Negative). 10 stimuli are the recommended number, while 3 stimuli per category is the minimum allowed on the platform. For a correct design, it is recommended to leave the default validated attributes, in specific cases they can be changed to adapt them to the measured categories.

Target stimuli

The second step is to choose the concepts to compare and name them (category name). Subsequently, images and/or words should be selected to represent each of the categories (category stimuli).

Content Recommendations

Once you have selected the stimuli number and categories the content to be evaluated must be chosen, it should be selected considering the following recommendations. Ignoring the following aspects during the study design may introduce biases that alter the quality of the results obtained.

How to define category name?

The two categories must be comparable and easily recognizable; it is important to differentiate between a target category (the category we want to evaluate) versus a competitor category (the category we use to compare the results).

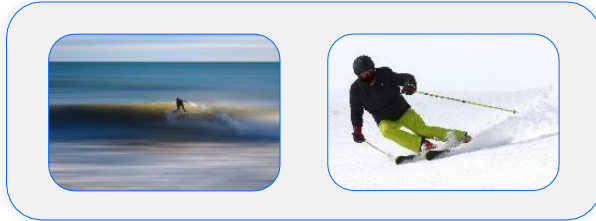
What are the category stimuli?

Stimuli are the representation of the categories through images and text; they must be exclusive and unequivocal. (That is, if a stimulus is defined for one category, it should not be possible to relate it to the other). A stimulus that is confusing or ambiguous to any of the participants will harm the quality of the results.

What formats are available?

The stimuli can be represented using either images or text. In a test design, you can choose to use only one of these formats or mix both formats, images and text.

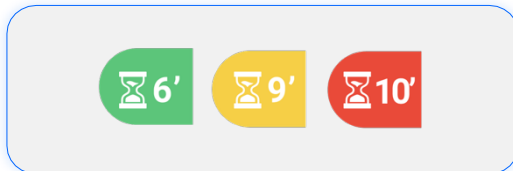
- **Images:** They should, as much as possible, be of a similar size, proportion, and quality. It is especially important that there are no differences between the stimuli of different categories, as a bias can be introduced in the quality and look of the image itself. It should also be paired in content, the images in both cases must be comparable. (Categories: Mountain vs Beach; Images: Surf vs Ski)



- **Text:** Select words related to the category in question that represent it as fully as possible. The words used must be easily recognizable by the target audience.

Can I know the test execution time?

The test duration varies based on the number of repetitions, stimuli, and attributes per block. Typically, experiments last no longer than 10 minutes. The test duration can be monitored in the top right corner as stimuli numbers change. Conducting a trial test is recommended to evaluate the actual duration.



Can I see an example?

To apply the recommendations proposed in the previous section, an example is provided that will be used to describe each section throughout the document.

Briefing: We aim to conduct an Implicit Association Test to evaluate subconscious preferences between beach and mountain destinations within the general population.

This study will utilize a standardized IAT protocol to measure implicit associations, considering age, gender, and self-reported destination preferences as key variables.

This study aims to determine consumer preference between two categories: Beach vs Mountain.

Stimulus: Select images and/or words that capture the concepts you want to compare. Ideally, the images and/or words for each concept should be comparable in each group.

Category 1: Beach

Stimuli:



Waves

Category 2: Mountain

Stimuli:



Snow

By analyzing the stimuli, we can verify that all the conditions are met:

- *There is the same number and proportion (images vs. text) of stimuli for both categories*
- *The stimuli are exclusive and unequivocal. No one will identify skiing on snow with the beach.*
- *The stimuli are paired in content. In both cases we find an image of a sport, representative article, animals ...*
- *Images have a similar size, quality and proportion.*
- *The texts are clearly related to their category.*

As for the categories, the defaults are used: Positive and Negative. The 10 default attributes are used:

- *Positive: Wonderful, excellent, surprising, pleasant, formidable, best, phenomenal, superior, beneficial, spectacular.*
- *Negative: Terrible, horrible, worse, bad, inferior, harmful, unpleasant, annoying, lousy, mediocre.*

2.2.2 SAMPLE

The sample consists of the participants who will take part in the study. The characteristics of the sample depend on the study's objectives. This section explains the possibilities and functionalities.

What is the optimal sample size?

When collecting data in an online context, and based on internal studies, we recommend a sample of 100 participants. The sample size must consist of valid participants with the right ratio of implicit responses.

According to the literature in academic papers, the recommended sample size "n" is 39 participants² to achieve the level of replicability of results, however, a larger sample size will increase the reliability of the results. Any segment from which we want statistically significant data must have at least 39 valid participants.

What characteristics should the sample have?

The characteristics will depend on the type of study and its objectives. Depending on the sample from which responses are to be measured, a specific profile will be chosen. It is important to consider that the selected characteristics will be considered in the results.

² Reference paper: [Understanding and Using the Implicit Association Test: I. An Improved Scoring Algorithm](#)

Can I see an example?

Following our example, we aim to obtain a sample size of at least 100 participants who have completed the test correctly. To achieve this, we will share the link with 200 people. Regarding segments, these are defined by age and by preference for beach vs mountain. The goal is to evaluate a representative sample of the general adult population:

The data collection will be done using an internal database ¹.

How I want to segment my participants:

Segment	Feature	N
Gender	Men	50
	Women	50
Age	18-25	10
	25 - 35	20
	35 - 45	20
	45 - 55	20
	55 - 65	20
	Over 65	10
Preferred location	Beach	50
	Mountain	50
Total	Total	100

Prospective participants:

Segment	Feature	N
Gender	Men	100
	Women	100
Age	18-25	20
	25 - 35	40
	35 - 45	40
	45 - 55	40
	55 - 65	40
	Over 65	20
Preferred location	Beach	100
	Mountain	100
Total	Total	100

¹ For more information about integrate an external database, consult section [4.3 Settings](#) and [4.6 Participants](#) of the [User manual](#).

2.2.3 VARIABLES

Variables are the collection of information from participants to achieve the necessary sample characteristics.

What are variables?

After choosing the sample, variables are an optional step depending on the study goals. Variables are used to gather information from the sample that can be useful, and for filtering test results.

What are they used for?

The primary function of variables is to combine them to create segments. It is necessary to predefine the sample characteristics to reach the desired profiles; think about the segments that are intended to be analyzed in order to create the proper variables.

Where are they displayed during execution?

The variables appear as a questionnaire to the participant at the beginning of the test, to capture their characteristics. Based on their questionnaire answers, people will access the test if they fit the selected segment.

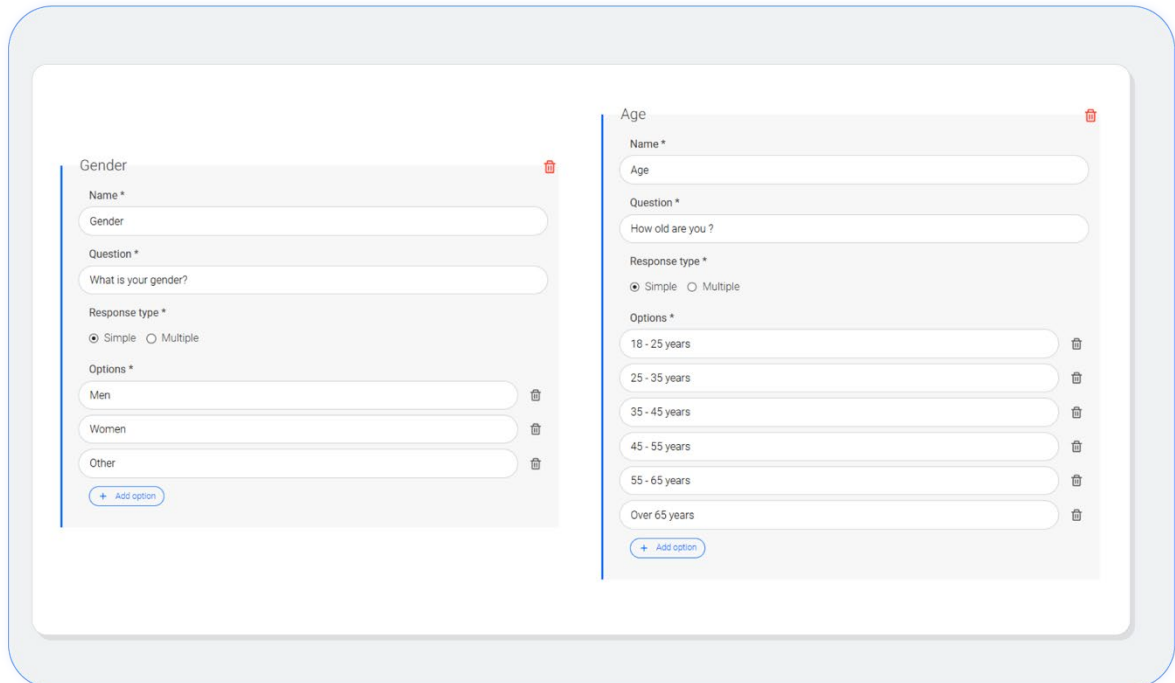
What types are there?

The questions of the questionnaire can be simple (single response), the participant can only select one option, and multiple response, the participant can select more than one option.

The options are the choices that the participant can select.

Can I see an example?

Returning to our example, the following variables are defined in the interface:



The screenshot displays the configuration interface for two questions in the IRT Online tool. The interface is divided into two panels, each with a title and a trash icon in the top right corner.

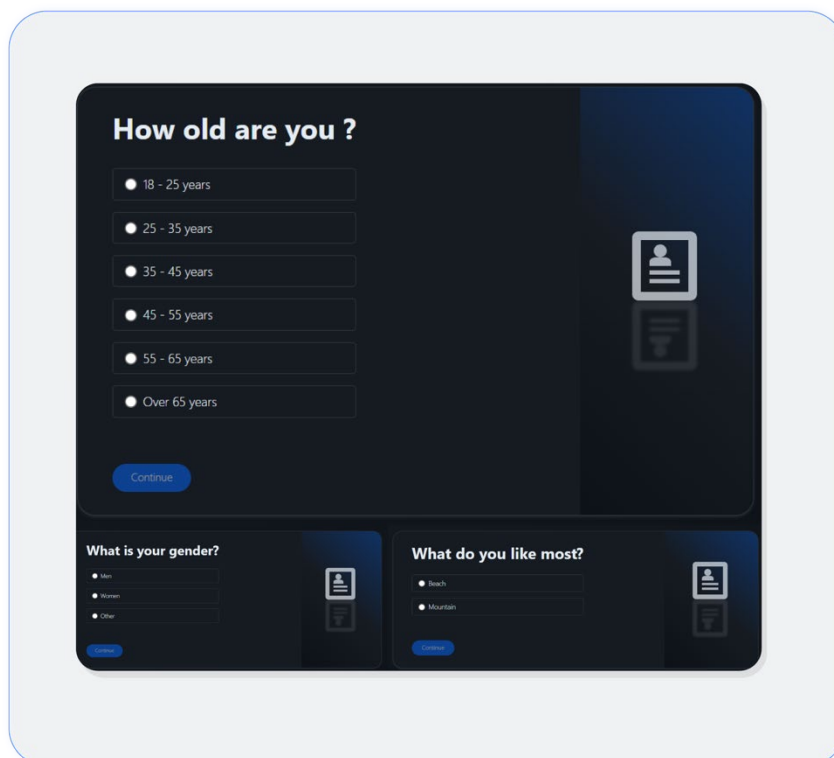
Gender Panel:

- Name ***: Gender
- Question ***: What is your gender?
- Response type ***: Simple (selected), Multiple
- Options ***: Men, Women, Other. There is an "+ Add option" button at the bottom.

Age Panel:

- Name ***: Age
- Question ***: How old are you ?
- Response type ***: Simple (selected), Multiple
- Options ***: 18 - 25 years, 25 - 35 years, 35 - 45 years, 45 - 55 years, 55 - 65 years, Over 65 years. There is an "+ Add option" button at the bottom.

During the text execution, the participants will see the following questionnaire:



The screenshot shows the participant questionnaire during text execution. The interface is dark-themed and displays three questions in a grid layout. Each question has a title, a list of options with radio buttons, and a "Continue" button.

How old are you ?

- ☐ 18 - 25 years
- ☐ 25 - 35 years
- ☐ 35 - 45 years
- ☐ 45 - 55 years
- ☐ 55 - 65 years
- ☐ Over 65 years

What is your gender?

- ☐ Men
- ☐ Women
- ☐ Other

What do you like most?

- ☐ Beach
- ☐ Mountain

2.2.4 SEGMENTATION

The chosen variables will be used to group the sample based on questionnaire responses. Segmentation allows for the creation of groups of individuals that are then analyzed separately to identify differences in results.

What is segmentation?

A segment consists of a group of people who share a series of characteristics. Segmentation is achieved by combining variables to create a profile of a sample group for measurement.

What are they used for?

The segments are the criteria used to control the sample, and the segment size is controlled by quota. The quota defines the size for each segment.

How to create a segment?

As many variables and responses as you deem necessary can be selected to create the segments. The size of the segment can be selected in the quota

How do segments act?

Depending on the participant's responses in the variable's questionnaire, they will belong to one segment or another. If the answers of the participant belong to a full quota segment or to an exclusion condition segment, they will also be removed from the test screen.

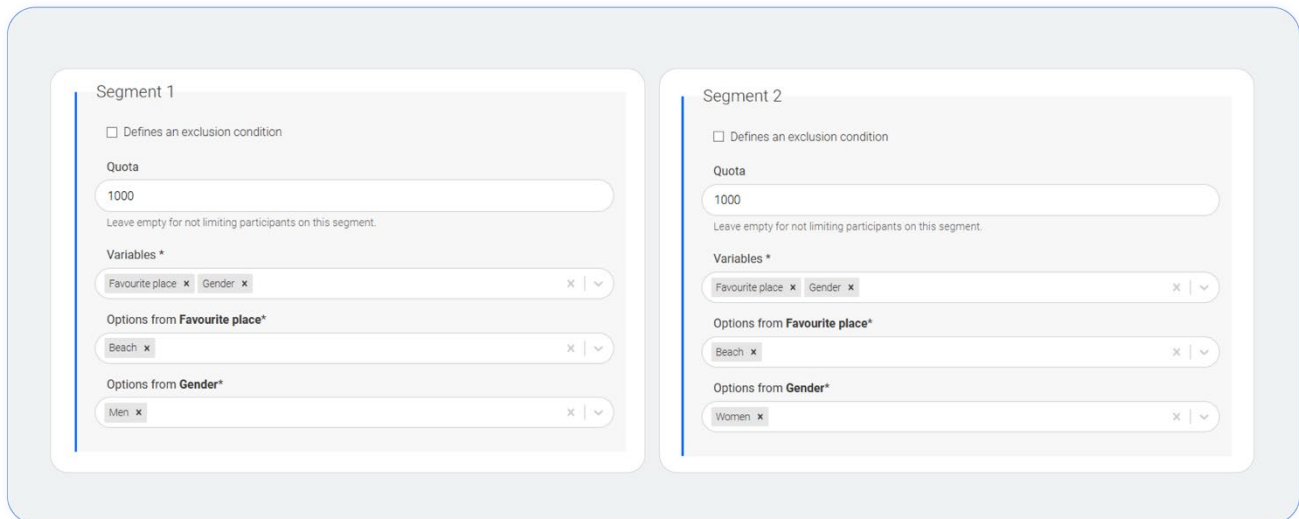
What is the appropriate segment size?

For meaningful and replicable data, it is recommended to have a sample size of N=39 per segment. A minimum of 10 participants is needed to ensure that the results are trend-representative and useful for generating insights.

Define an exclusion condition: In Quota textbox, the segment size is set by specifying the number of participants, with an exclusion condition by typing 0 participants or clicking the Defines an exclusion condition checkbox.

Can I see an example?

Following our example, we created these segments to analyze the differences between them:



The screenshot displays two side-by-side configuration panels for creating segments in the Bitbrain tool. Both panels are titled 'Segment 1' and 'Segment 2' respectively.

Segment 1 Configuration:

- ☐ Defines an exclusion condition
- Quota:** 1000
Leave empty for not limiting participants on this segment.
- Variables ***: Favourite place x Gender x
- Options from Favourite place***: Beach x
- Options from Gender***: Men x

Segment 2 Configuration:

- ☐ Defines an exclusion condition
- Quota:** 1000
Leave empty for not limiting participants on this segment.
- Variables ***: Favourite place x Gender x
- Options from Favourite place***: Beach x
- Options from Gender***: Women x

2.2.5 PROCESSING

This tab is for those with deep knowledge of IRT tests and want to make changes to the result calculation methodology. Processing is useful for selecting what is considered for result calculation; test rules can be changed based on the objective; it is used in exceptional cases.

If you want to apply the standard test algorithm, [here](#), Bitbrain recommends keeping the default settings.

For more information on the parameters to edit, refer to section [4.7 PROCESSING](#) of the [User manual](#).

2.2.6 PILOT STUDY

Once all necessary parameters have been defined in the design, it is recommended to run at least one session on each platform (desktop and mobile) to ensure that stimuli are displayed correctly. To perform a test, simply execute the URL.

As can be seen in the [Participants section](#), responses can be excluded from the results. After conducting the pilot study, we should remove the session.

Can I see an example?

In our example, we validate that the images are displayed correctly, in the same size and with a good quality.

2.3 EXECUTION

2.3.1 TEST INFORMATION

Once the pilot test has been conducted and the test is ready to be shared with the sample, the URL should be shared.

Where can I find the link?

The link can be found in Test Information. Copy the Test Access URL, the test begins when the link is accessed. The link can be accessed through mobile, desktop, and any browser.

Can I see an

Test 'Beach vs Mountain'

Creation date	1/7/2024, 11:30:21
Name	Beach vs Mountain
Test type	IAT
Language	English
Organization	Bitbrain
Test Access	https://irt-online.bitbrain.com/test/b7bf920d-2244-50e4-af02-5cf8de3d72e3 

How to reach the participants?

Participants can be recruited using an internal database, sharing it online, or through a recruitment agency.

To integrate an external database with the test for correct participant flow, refer to section 4.3 Settings and 4.6 Participants of the User manual.

What does a test session consist of?

Once the participants enter the link, they will see:

- Preliminary information: Brief test explanation.
- Questionnaire: In case there are defined variables.
- Instructions: Stimuli presentation and guidelines on the tasks and dynamics of the test.
- Familiarization block: Practice block where the participant becomes familiar with the stimuli and test dynamics.

Test: To access an example session, click [here](#).

2.3.2 PARTICIPANTS

After creating and validating the test, it is time to begin its distribution to the sample, we can monitor the sample through tabs, where we will view participant information in real time.

What is the participant's tab?

The participants tab serves to keep track of participants individually in real-time. It can be seen how many have completed the test and up to which phase they have progressed.

It also shows those who have been discarded due to the Discard rule based on their responses. At the bottom, we can see how many participants have accessed the test.

How to access participants information?

In the overview, we can see the ID as well as the start date of the test. Clicking the question mark we can have access to each participant's information individually, to delete the responses from a test, click the eraser, and for deleting a participant use the trash bin.

How to interpret the information displayed?

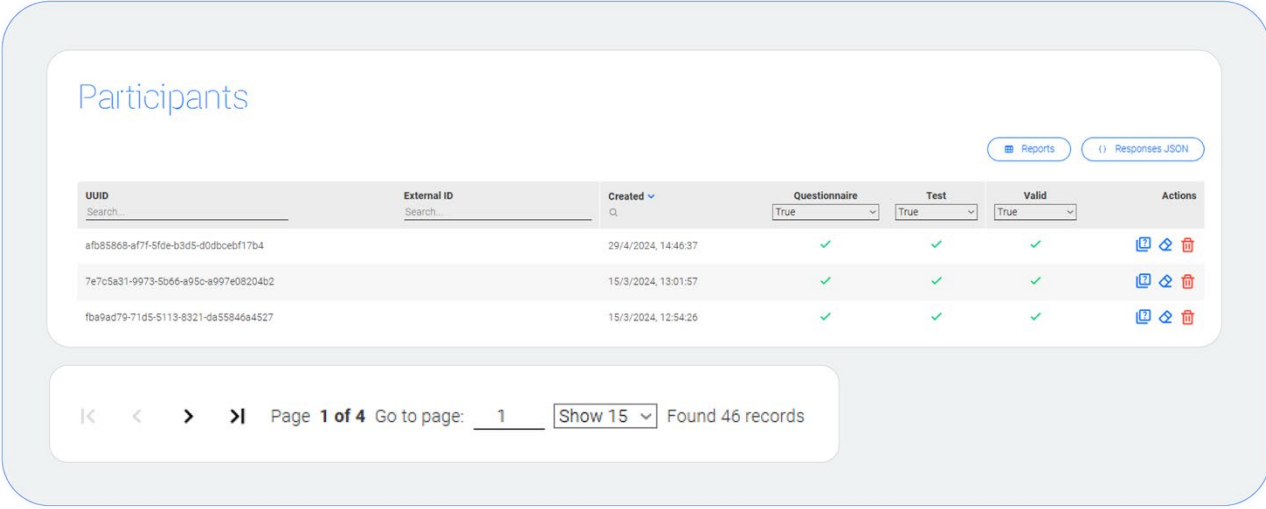
Represented by true (check mark) or false (cross), we can see which phases the participant has completed:

- Variables Questionnaire:
True: They have completed the questionnaire.
False: They abandoned it without completing the questionnaire.
- Test:
True: They have completed the test.
False: They abandoned without completing the test.
- Valid:
True: Good test execution, valid according to the discard rule.
False: Poor test execution, invalid according to the discard rule.

Can I see an example?

In our example, we see that our questionnaire has been completed by 86 UUIDs. When filtered by test, only 52 participants have taken the test.

46 participants have been valid and are considered in the results.



The screenshot displays the 'Participants' interface. At the top, there are buttons for 'Reports' and 'Responses JSON'. Below this is a table with columns: UUID, External ID, Created, Questionnaire, Test, Valid, and Actions. The table contains three rows of data, all with 'True' status in the Questionnaire, Test, and Valid columns. The bottom of the interface shows a pagination bar with navigation arrows, 'Page 1 of 4', 'Go to page: 1', 'Show 15', and 'Found 46 records'.

UUID	External ID	Created	Questionnaire	Test	Valid	Actions
afb85868-af7f-5fde-b3d5-d0dbcebf17b4		29/4/2024, 14:46:37	True	True	True	[Icons]
7e7c5a81-9973-5b66-a95c-a997e08204b2		15/3/2024, 13:01:57	True	True	True	[Icons]
fb99ad79-71d5-5113-8321-da55846a4527		15/3/2024, 12:54:26	True	True	True	[Icons]

Page 1 of 4 Go to page: 1 Show 15 Found 46 records

2.3.3 PARTICIPATION STATUS

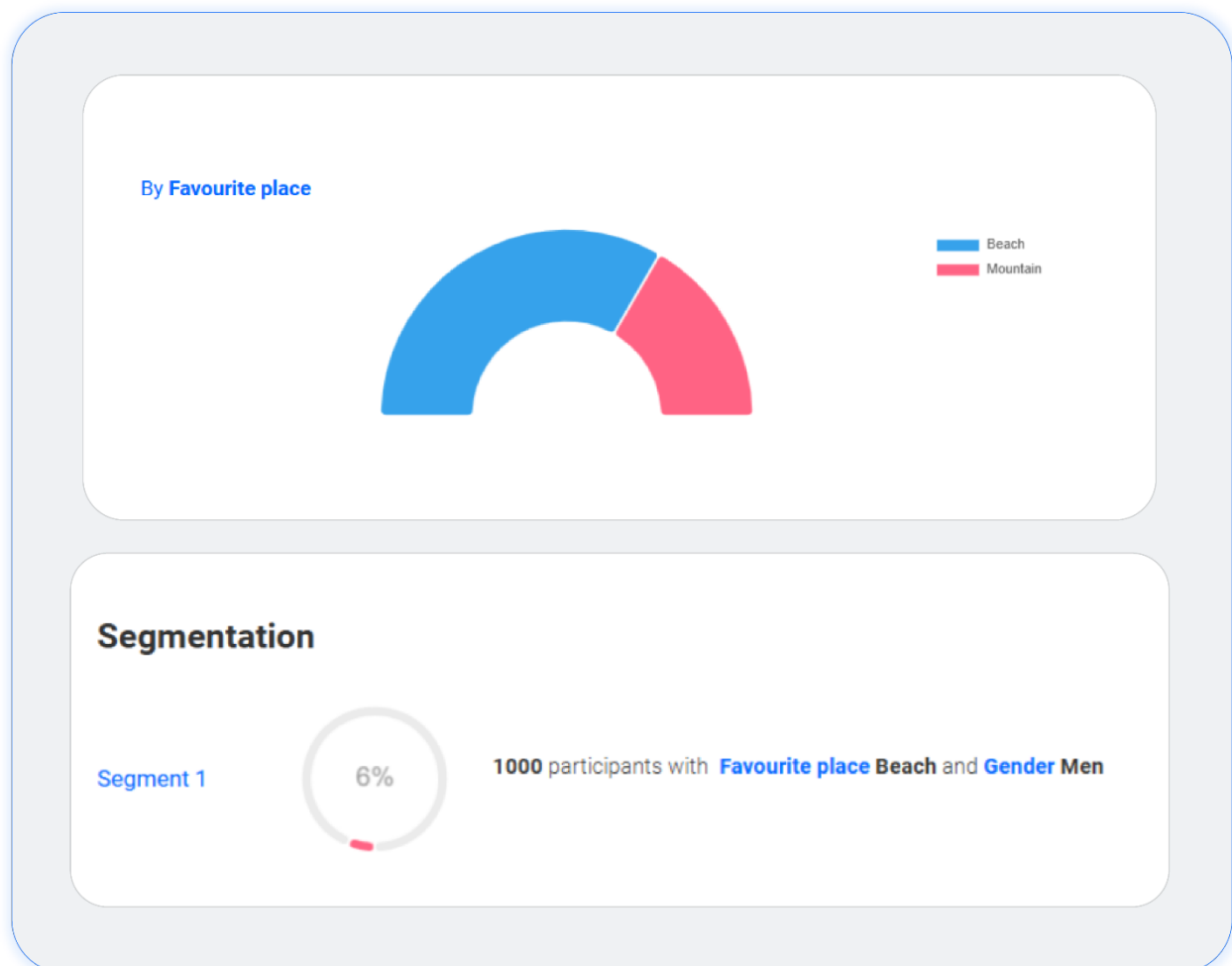
To visually monitor the characteristics of the sample and determine how to proceed with the test distribution, we have this dashboard.

What is participation status?

This dashboard provides a broader perspective compared to the previous window, as it tracks the entire sample, variables, and segments according to what is established in the study design section.

Can I see an example?

In our example, we see that 86% of participants who like the mountains have completed the test, and 6% of participants who like the beach and are male have completed it.



2.4 RESULTS

Once it is confirmed from the participation status that the sample has been completed, it is time to analyze the results obtained.

How to interpret results?

Using Cohen's D, the strength of the association between each concept and the overall text or image attributes is represented. This is categorized into four types of association based on the p-value:

- No preference: < 0.2
- Light association: $0.2 < 0.5$
- Moderate association: $0.5 < 0.8$
- Strong association: > 0.8

How are results calculated?

Only valid participants are considered. Results are presented by comparing response times and classification errors between categories and positive attributes. Average response times and standard deviation are analyzed, with the statistical T - test used to obtain these results.

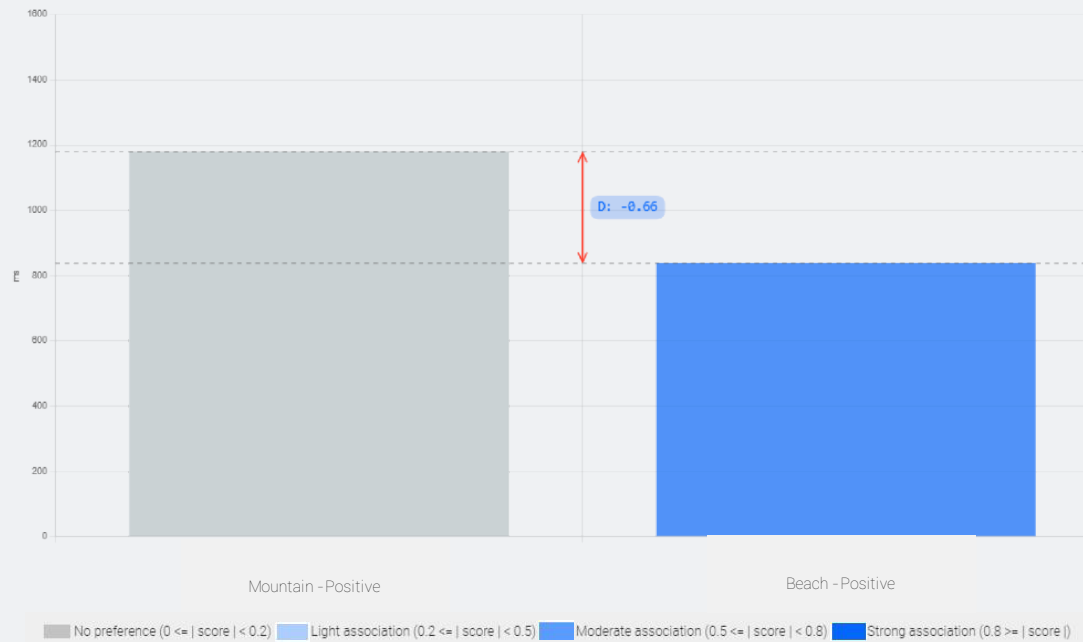
How are results shown?

The chart displays the average response times in both categories represented in bars. The association and its level are indicated by colours: a grey bar indicates no preference, while the other associations are represented in shades of blue.

The chart can be saved as an image for inclusion in a report. The data from the chart can be downloaded to verify its source and to create your own graph by clicking on the "Download chart" button.

Can I see an example?

Following our example, we can observe the differences in the time responses of each category, Beach is perceived more positively with moderate association as they have a difference of 0,66 responses time according to p-value.



3. Semantic and visual priming tests

3.1. INTRODUCTION

The priming template is used to measure the strength of the relative association between two categories and a series of text or image attributes that are used to "prime" the choice. The objective of the test is, based on two concepts to compare and a list of attributes/images (between 5 and 8), to determine for each of the attributes, if it is more associated with one concept or the other.

During a priming test, the participant will be asked to assign one of two images to two defined categories after viewing an attribute displayed as a priming text or image. The algorithm will look at the response time as a way of determining unconscious association between that text attribute and the category/brand/etc.

- The semantic priming test measures the association between categories and text attributes.
- The visual priming test measures the association between two categories and image attributes. It is used when attributes are better represented with an image than with words, for example, to represent celebrities, countries, or logos.

To see possible applications, consult [ANNEX I](#).

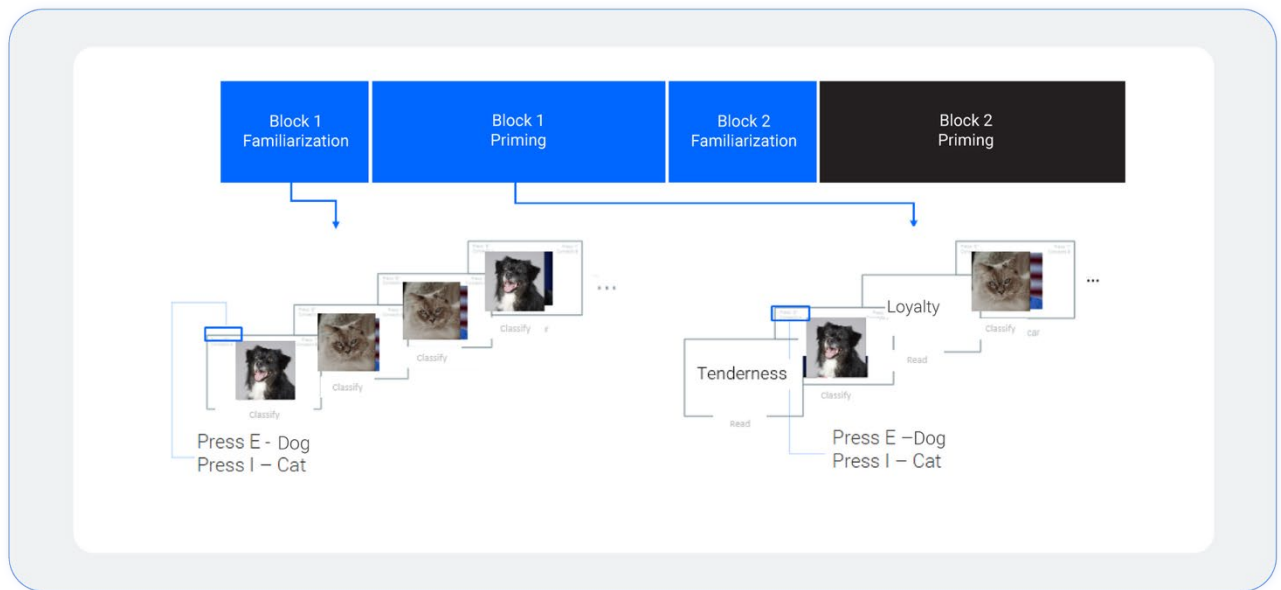
3.1.1. TEST METHODOLOGY

After introducing the two priming tests, we can see their methodology, the blocks they follow for evaluation, which are the same in both tests.

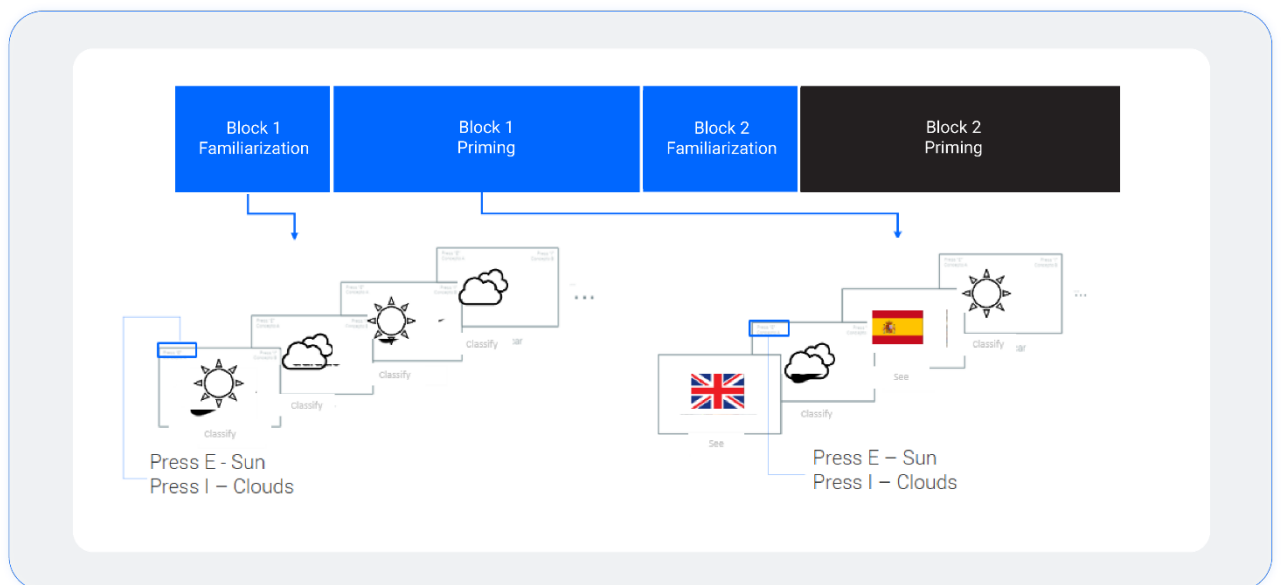
The priming test measures the response time it takes for the user to classify two images into categories after an attribute is presented as a priming stimulus via text or image. The quicker and more accurate images are classified into a category after a text or image attribute, the stronger the association between the attribute and the category.

The priming test includes four blocks: two for familiarization and two for priming, with category evaluation keys changing positions in each block. In the familiarization blocks, the attributes will not appear before classification, whereas they will appear in the priming blocks.

Semantic



Priming



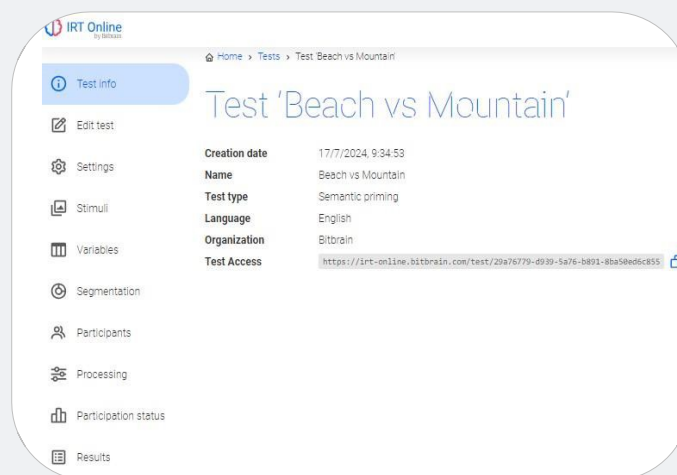
3.2. STUDY DESIGN

In all three types of tests, there is a procedure for their creation. Although it depends on the objectives pursued, they must be carried out in a specific manner for proper experimental design. Below is an explanation of each section along with a practical example.

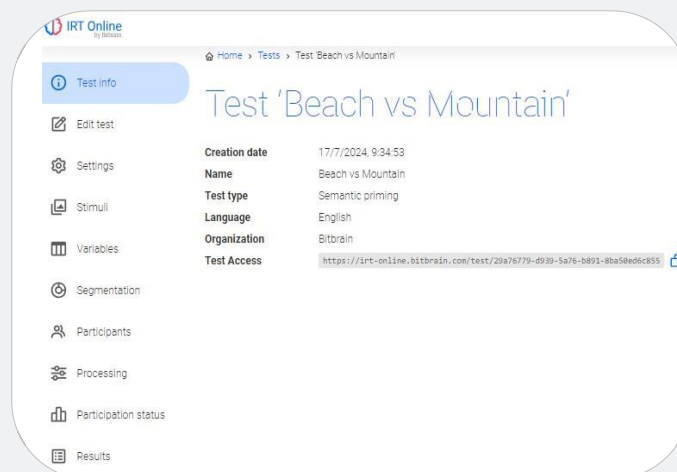
Can I see an example?

To improve comprehension, we will follow each step with a test example for better understanding.

Semantic



Visual



3.2.1. SETTINGS

All participants will see predetermined instructions before taking the test in order to understand how it works and avoid misunderstandings during the process.

In the Settings tab of the priming tests, you can choose between Classic Instructions or Simplified Instructions.

- Classic Instructions: These are detailed instructions explaining the test process. As stated in the literature the familiarization phase is different from the regular test.
- Simplified Instructions: These are improved instructions where participants are only told what they need to do, for better understanding. After internal testing, the familiarization process follows the same procedure as the test.

Both options are valid, and we recommend conducting a pilot test to decide which one to use before sending out the test.

3.2.2. STIMULI

This tab is used to select the number of stimuli by type and define the material to be evaluated.

Number of stimuli

The stimuli number can be selected on the header page.



The screenshot shows a settings panel with four input fields arranged in a 2x2 grid. Each field has a label, a value, and a range indicator below it.

Stimuli in familiarization blocks *	Priming stimuli repetitions *
20	10
Between 2 - 100	Between 1 - 100

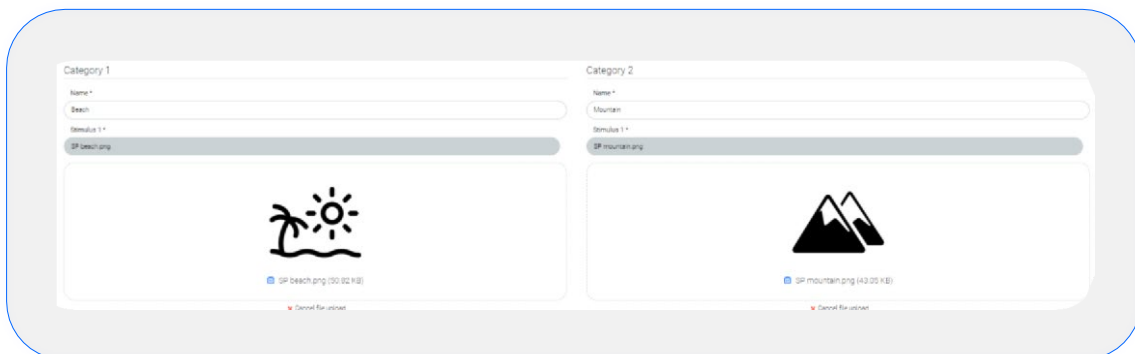
Priming stimuli time *	Priming stimuli count *
250	5
Between 250 - 3000	Between 2 - 10

How many stimuli per block, category and attribute are recommended?

- **Stimuli in familiarization blocks:** Repetitions to become familiar with the stimuli. It is recommended to leave this parameter at the default of 20 stimuli. However, in specific cases, it could be increased or decreased for the evaluation of the categories. This number will be divided, with half belonging to one category (10) and half to the other (10).
- **Priming stimuli repetitions:** Number of trials presented in the priming blocks; it is recommended to leave this parameter at the default of 10 stimuli. However, it could be increased or decreased depending on the necessary elements to represent the categories in a comparable manner.
- **Priming stimuli time:** Time the stimuli is shown before presenting the category image. It is recommended to leave at the default value of 250 ms. However, if any of the chosen attributes are costly to read (text) or difficult to interpret (image), the time can be increased. It is recommended to conduct a pilot study to evaluate this.

Target stimuli

The second step is to choose the concepts to compare and name them (Category name). Subsequently, word (Semantic priming) or image attributes (Visual priming) should be selected to represent each of the categories (Category stimuli).



The screenshot shows the 'Target stimuli' interface with two categories:

- Category 1:**
 - Name: Beach
 - Stimulus 1: (empty)
 - Stimulus 2: (empty)
 - Image: A beach scene with a sun and palm trees.
 - File: SP beach.png (50.02 KB)
 - Buttons: Cancel for upload
- Category 2:**
 - Name: Mountain
 - Stimulus 1: (empty)
 - Stimulus 2: (empty)
 - Image: A mountain scene.
 - File: SP mountain.png (43.02 KB)
 - Buttons: Cancel for upload

Content Recommendations

Once you have selected the stimuli number and categories the content to be evaluated must be chosen, it should be selected considering the following recommendations. Ignoring the following aspects during the study design may introduce biases that alter the quality of the results obtained.

How to define category?

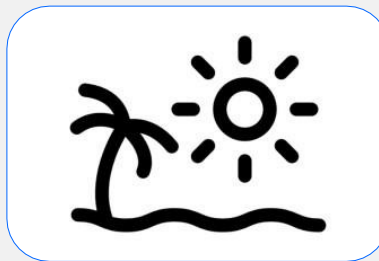
The two categories must be comparable and easily recognizable; it is important to differentiate between a target category (the category we want to evaluate) versus a competitor category (the category we use to compare the results).

Representing Beach as a category:

Ambiguous:



Clear:



What are the priming stimuli?

Priming stimuli are the text or image attributes selected to assess their associative strength with predefined categories. They are chosen based on the study's objectives; they appear just before the image to be classified.

How to define attributes?

- **Semantic Priming:** Attributes should be adjectives or names that contain some property that you want to evaluate for the brands, products or category. The meaning should be simple and easy to identify. If a person does not understand the meaning, or if there is some ambiguity in the word used, the test will not be valid.

The attributes cannot have similar meanings; each one must represent a distinct idea.

Can I see an example?

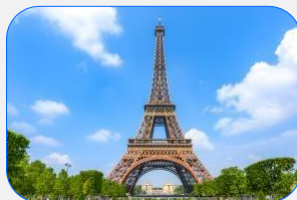
According to the example of beach and mountain environments, to evaluate which environment is more polluted, the attribute used could be 'Pollution.' It would not be appropriate to add synonyms such as 'Contamination,' 'Degradation,' or 'Sullied,' as they would convey the same idea. An attribute that represents a single characteristic or property is sufficient for that purpose.

- **Visual Priming:** The image should be clear and sharp. The meaning should be simple and easy to identify. If a person does not understand the meaning, the test will not be valid. The images must all have an appropriate resolution and the same size to avoid introducing biases in the evaluation. Images cannot represent similar concepts; they must also clearly represent the attribute.

Can I see an example?

The attribute images we chose in this example are countries, as they are easy to represent. Additionally, we represent them all using flags, which are an easy logo to distinguish between them

Ambiguous:



Clear:



How many priming stimuli per category are recommended?

Each attribute is evaluated separately, so the total number used depends on the objective of the study. All attributes used must be clear, unambiguous, and have nonredundant meaning.

Can I know the test execution time?

The test duration varies based on the number of repetitions, stimuli, and attributes per block. Typically, experiments last no longer than 10 minutes. The test duration can be monitored in the top right corner as stimuli numbers change. Conducting a trial test is recommended to evaluate the actual duration.



Can I see an example?

Semantic Priming test

To apply the recommendations proposed in the previous section, an example is provided to describe each section throughout the document.

Briefing: We aim to conduct a Semantic priming test to evaluate subconscious preferences between beach and mountain landscapes, as well as some attributes related to environment's landscape, within the general population. This study will utilize a standardized SP protocol to measure priming stimuli, considering age, gender, and self-reported destination preferences as key variables.

This study aims to determine consumer strength associations between two categories: beach and mountain and five attributes: natural, pollution, fauna, tourism and relax.

Two categories: Beach vs Mountain

Category 1: Beach

Category 2: Mountain

Stimulus:



Stimulus:



Priming stimuli: Natural, pollution, fauna, tourism and relax.

Can I see an example?

Visual priming test

To apply the recommendations proposed in the previous section, an example is provided to describe each section throughout the document.

We aim to conduct a Visual priming test to evaluate subconscious preferences between beach and mountain environments, and to determine which country is more associated with each concept within the general population. This study will utilize a standardized VP protocol to measure priming stimuli, considering age, gender, and self-reported destination preferences as key variables.

This study aims to determine consumer strength associations between two categories: beach and mountain and 5 image attributes: Spain, England, Germany, Italy and France

Two categories: Beach vs Mountain

Category 1: Beach

Stimulus:



Category 2: Mountain

Stimulus:



Priming stimuli:



3.2.2. SAMPLE

The sample consists of the participants who will take part in the study. The characteristics of the sample depend on the study's objectives. This section explains the possibilities and functionalities.

What is the optimal sample size?

Based on internal studies, we have determined that a sample size of 100 participants is optimal to achieve adequate statistical power and produce significant results. Reaching this sample size is essential to ensure the replicability of the findings and maintain the validity of the analyses.

By adhering to this sample size, we enhance the credibility of the findings, contributing to more robust and reliable outcomes that align with rigorous research standards and strengthen the impact of the study.

What characteristics should the sample have?

The characteristics will depend on the type of study and its objectives. Depending on the sample from which responses are to be measured, a specific profile will be chosen. It is important to consider that the selected characteristics will be considered in the results.

Can I see an example?

Following our example, we aim to obtain a sample size of 100 valid participants. To achieve this, we will share the link with 200 people. Regarding segments, it is defined by age and by preference for beach vs mountain. It is intended to evaluate a representative sample of the general adult population:

The data collection will be done using an internal database 1.

How I want to segment my participants:

Segment	Feature	N
Gender	Men	50
	Women	50
Age	18-25	10
	25 - 35	20
	35 - 45	20
	45 - 55	20
	55 - 65	20
	Over 65	10
Preferred location	Beach	50
	Mountain	50
Total	Total	100

Prospective participants:

Segment	Feature	N
Gender	Men	100
	Women	100
Age	18-25	20
	25 - 35	40
	35 - 45	40
	45 - 55	40
	55 - 65	40
	Over 65	20
Preferred location	Beach	100
	Mountain	100
Total	Total	100

¹ For more information about integrate an external database, consult section [4.3 Settings](#) and [4.6 Participants](#) of the [User manual](#).

3.2.4. VARIABLES

The variables are common to all three types of tests. To learn how to design them effectively, refer to section [2.2.3 Variables](#).

3.2.5. SEGMENTATION

Segmentation is common to all three types of tests. To learn how to design the segments effectively, refer to section [2.2.4. Segmentation](#).

3.2.5. PROCESSING

Tab processing is common to all three types of tests. To learn how to manage it effectively, refer to section [2.2.5. Processing](#)

3.2.6. PILOT STUDY

Pilot study is common to all three types of tests. To learn how to conduct it effectively, refer to section [3.2.6. Pilot study](#)

3.3. EXECUTION

The execution of the test is common to all three types of tests. To learn how to conduct it effectively, refer to section [2.3. Execution](#).

Example tests can be accessed:

- **Semantic Priming test:** To access an example, click [here](#).
- **Visual Priming test:** To access an example, click [here](#).

3.3.1 TEST INFORMATION

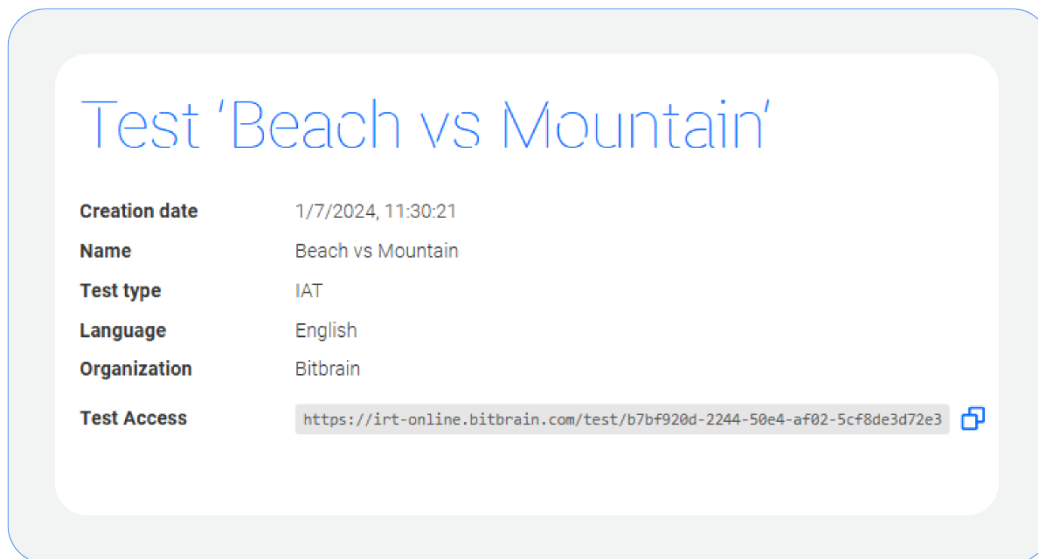
The execution of the test is common to all three types of tests. To learn how to conduct it effectively, refer to section [2.3.1 Test Information](#)

Once the pilot test has been conducted and the test is ready to be shared with the sample, the URL should be shared.

Where can I find the link?

The link can be found in Test Information. Copy the Test Access URL, the test begins when the link is accessed. The link can be accessed through mobile, desktop, and any browser.

Can I see an example



How to reach the participants?

Participants can be recruited using an internal database, sharing it online, or through a recruitment agency.

To integrate an external database with the test for correct participant flow, refer to section 4.3 Settings and 4.6 Participants of the User manual.

What does a test session consist of?

Once the participants enter the link, they will see:

- Preliminary information: Brief test explanation.
- Questionnaire: In case there are defined variables.
- Instructions: Stimuli presentation and guidelines on the tasks and dynamics of the test.
- Familiarization block: Practice block where the participant becomes familiar with the stimuli and test dynamics.

Test: To access an example session, click [here](#).

3.3.2. PARTICIPANTS

The execution of the test is common to all three types of tests. To learn how to conduct it effectively, refer to section [2.3.2 Participants](#)

3.3.3. PARTICIPANTS STATUS

The execution of the test is common to all three types of tests. To learn how to conduct it effectively, refer to section [2.3.3 Participants status](#)

3.3.4. RESULTS

Once the participation status confirms that the sample is complete, it is time to analyze the results.

How to interpretate results?

Using Cohen's D, the strength of the association between each concept and the overall text or image attributes is represented. This is categorized into four types of association based on the p-value:

- No preference: p-value > 0.05
 - Light association: p-value < 0.05
 - Moderate association: p-value < 0.01
 - Strong association: p-value < 0.001
- How are results calculated?

Only valid participants are considered. Results are presented by comparing response times and classification errors between categories and attributes. Average response times and standard deviation are analyzed, with the statistical T-Student test used to obtain these results.

How are results shown?

The chart displays average response times for each attribute using bars. The association level is shown in milliseconds and indicated by colours: a grey bar signifies no preference, while varying shades of blue represent different levels of association.

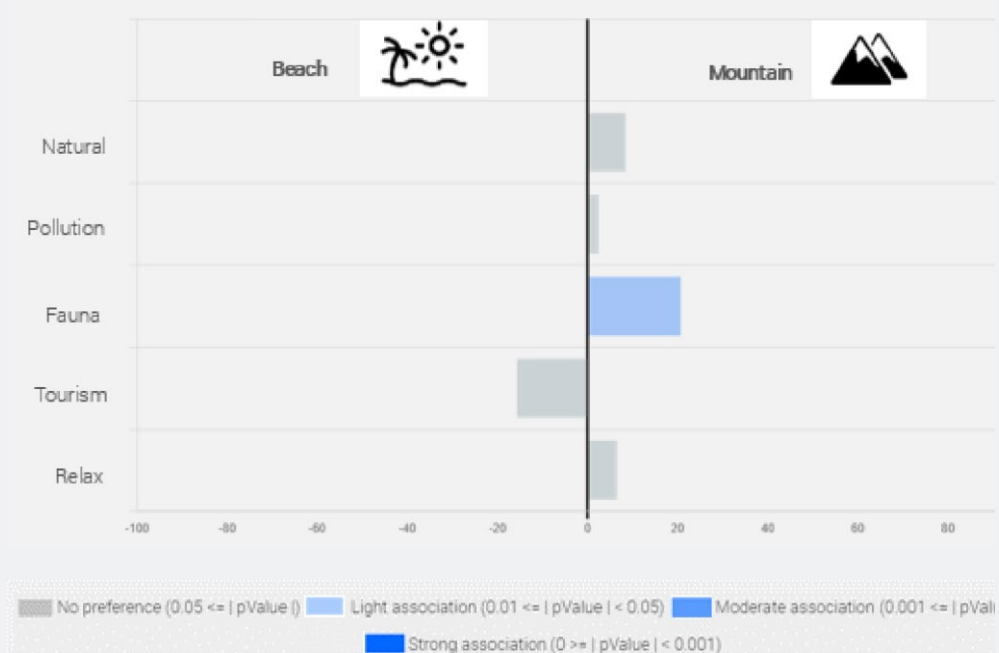
The chart can be saved as an image for inclusion in a report. The data from the chart can be downloaded to verify its source and to create your own graph by clicking on the "Download chart" button.

Can I see an example?

Semantic Priming Test

Results

Following our example, we can observe the differences in the time responses of each category. Fauna is moderately associated with Mountain, as it has the quickest response time, with a difference of 20 milliseconds.

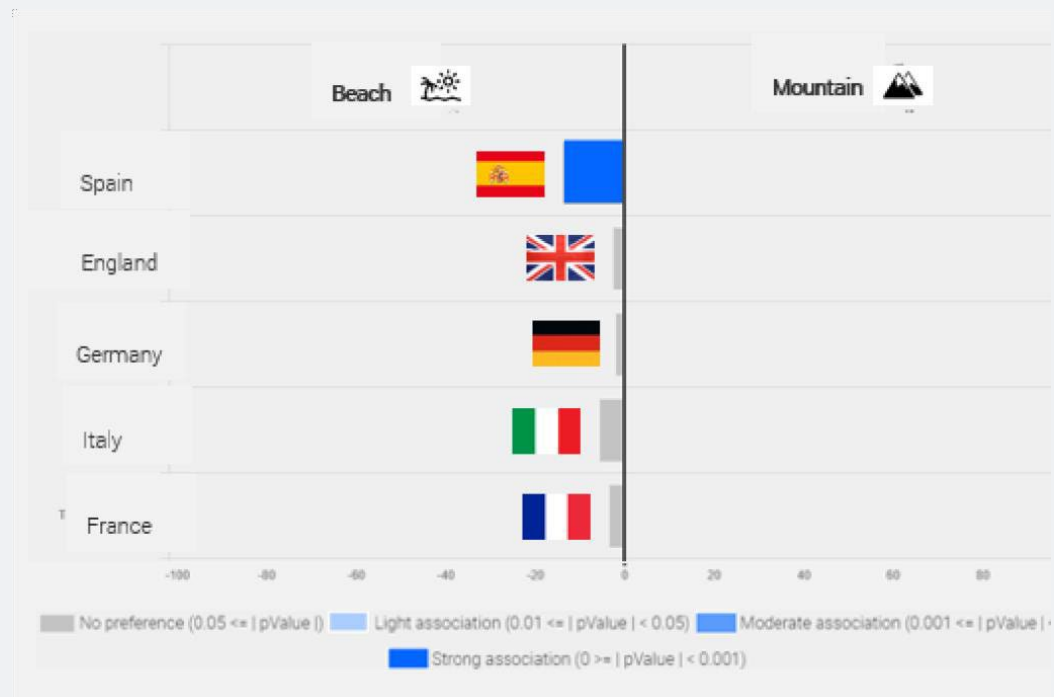


Can I see an example?

Visual Priming Test

Results

Following our example, we can observe the differences in the time responses of each category. Spain is strongly associated with Beach, as it has the quickest response time, with a difference of 14 milliseconds.



ANNEX

ANNEX I - Potential applications

For implicit response tests, there is a wide range of possibilities. Anything that can be compared to measure involuntary preference or the strength of association can be tested. In this appendix, we outline the types of protocols that exist as well as examples of possible applications.¹

They can be distinguished two protocols:

Standard protocol: One protocol in which we conduct a test on participants to obtain results and draw conclusions. This straightforward protocol allows for any comparative analysis between two concepts to be performed.

Possible applications

Comparative analysis of:

- Brands/ brand images
- Claims
- Distinctive assets
- Packaging
- Print advertising
- Promotions
- Design guidelines
- Product categories

Pre/post protocol: This protocol involves conducting a test to observe how the perception or association of a concept changes after stimulation. Initially, a test is administered, followed by exposure to an advertisement, experience, product tasting, or similar stimulus. The same test is then repeated to determine if there are any changes. This protocol aims to test the stimulation, specifically how brand creativity or experience impacts participants.

Implicit response
test

(PRE)

Brand related
stimulation

(STIMULUS)

Implicit response
test

(POST)

Possible applications

Association change analysis of:

- Spot viewing
- Communication campaigns
- Social media interaction
- Web browsing
- In-store experience campaign
- Sponsorship
- Events
- Other types of experience

