

PLANNING RESEARCH THAT ACCOUNTS FOR BUSINESS AND STATISTICAL RISK



AGENDA



STATISTICAL RISKS – TOM CARR, CARR CONSULTING



BUSINESS RISKS – JEANNINE DZUROSKA, SYMRISE, INC.



STATISTICAL RISKS IN SENSORY RESEARCH

STATISTICAL RISKS ARISE IN HYPOTHESIS TESTING

- ❖ The NULL HYPOTHESIS establishes baseline conditions from which the pass/fail rule and the probability of a false positive are obtained.
 - ❖ The Null Hypothesis typically states that there are no differences among the samples.
- ❖ The ALTERNATIVE HYPOTHESIS is the interesting hypothesis. It captures why the research is being conducted.
 - ❖ The Prototype is better than the Current product.
 - ❖ Our Product is preferred to our Competitor.

TWO INCORRECT CONCLUSIONS CAN HAPPEN IN SENSORY RESEARCH

- ❖ Concluding that a difference exists when it does not.
- ❖ Failing to detect a difference that is present.

TRIAL BY JURY ANALOGY

	Person is Really Innocent	Person is Really Guilty
Acquit	Correct Decision	Type II Error $\Pr[\text{Type II}] = \beta$ Guilty Goes Free
Convict	Type I Error $\Pr[\text{Type I}] = \alpha$ Innocent Goes to Jail	Correct Decision

CONTROLLING STATISTICAL RISKS

- ❖ An adequately sensitive study is one that has acceptable levels of:
 - Δ : How big of a difference makes a difference?
 - β : What chance are we willing to take of missing a difference as big or bigger than Δ ?
 - α : What chance are we willing to take of claiming that there is a difference when there is not?
- ❖ Δ is difficult to specify because we typically do not know the size of the difference that impacts consumer behavior.
 - Typically set arbitrarily, e.g., 0.5 units on the 9-point liking scale or 25% discriminators in a difference test.
- ❖ Ideally, $\alpha/\beta \sim \text{Cost}_\beta/\text{Cost}_\alpha$, but we seldom know both costs.
 - Typically set by firm's historical practice, e.g., $\alpha = 0.05$, $\beta = 0.20$.



BUSINESS RISKS IN SENSORY RESEARCH

BEYOND ALPHA & BETA

THE REALITY CHECK

Launch Study
Beta

Alpha

Delta



+



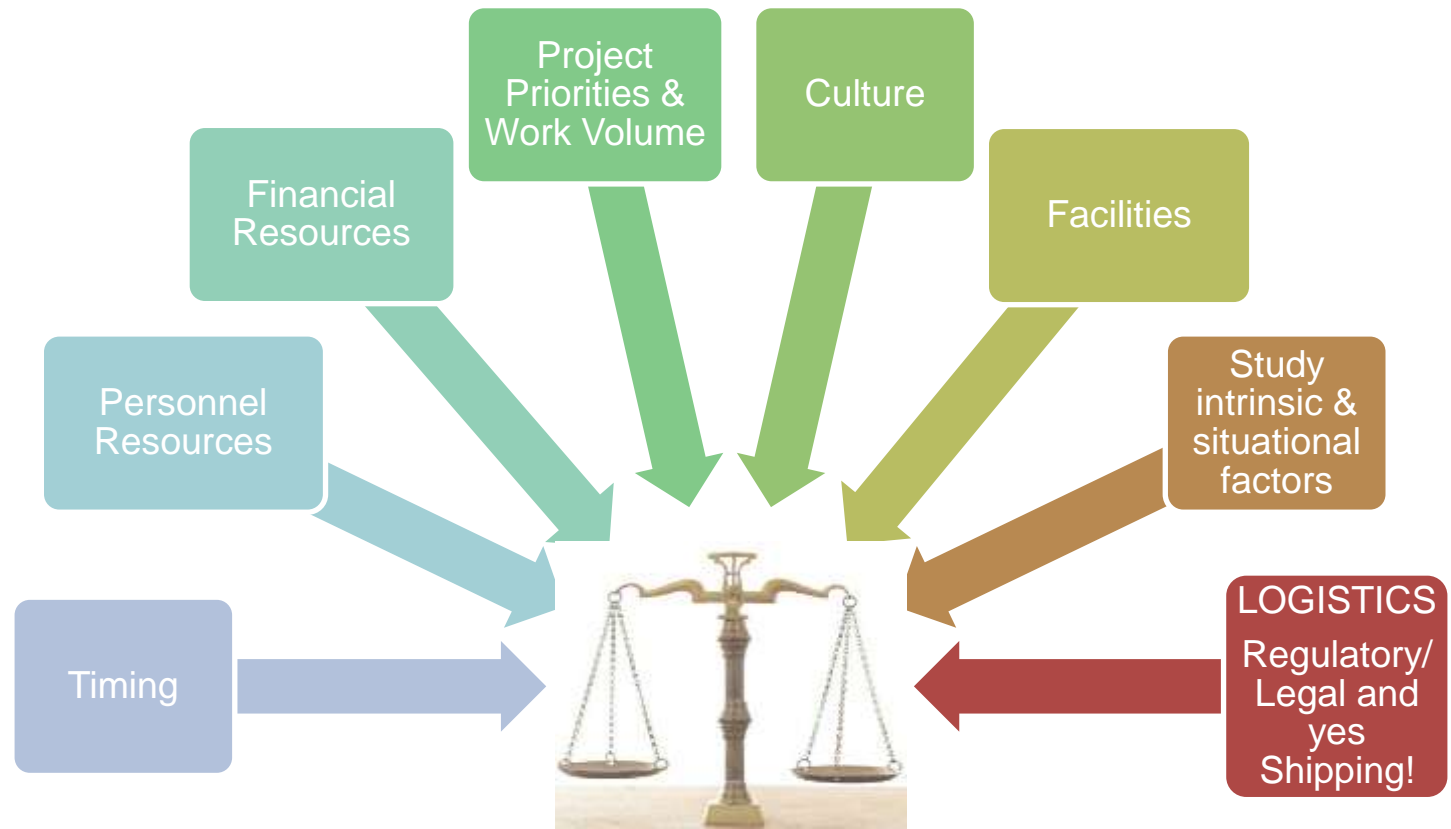
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BUSINESS RISKS

THE USUAL SUSPECTS TO THE LESS CONSPICUOUS



← IDEAL METHODOLOGY →

**AND LAST, BUT CERTAINLY
NOT LEAST IS THE RESEARCH**



A CASE STUDY

HOME CARE

“



A CASE STUDY

FINE FRAGRANCE



A CASE STUDY FRAGRANCE



**“The art of life is a constant re-adjustment
to our surroundings.”**

-Kakuzo Okakura



RESEARCH TRANSLATION.....

**“The art of research is a constant
re-adjustment with our situation.”**





THANK YOU

