CREATIVITY AND CONCEPT SELECTION IN INDUSTRY: ONLINE SURVEY QUESTIONS

Thank you for agreeing to participate in this online survey about concept selection methods in design practice. The following questions seek to obtain basic information about your educational and professional background in order to gain valuable demographic information about our participants. You may skip any questions that you do not wish to answer.

1. Can you please describe your educational background (degree(s) and areas of concentration(s)).
2. Can you please describe your professional design experience (e.g. company, position, design projects)?
3. How many years of professional design experience have you attained?
4. What would you say is your primary area of expertise (e.g., mechanical engineer, aerospace engineer, industrial designer, etc.)?
5. What is your current job title?

The following 7 questions ask about concept selection methods and techniques that are used in design practice. These questions will add to our understanding of concept selection methods in design practice and the factors that impact the adoption of formal concept selection techniques in industry. You may skip any questions that you do not wish to answer.

1. Can you describe a recent or ongoing design project that you have worked on?
2. During this project, can you describe how you (or your design team) developed concepts for the design problem (i.e. what type of idea generation methods did you use, was it in a team or individually, etc.)?
3. How many concepts were generated for this design problem?
4. During this project, can you describe how you (or your design team) selected concepts to move on in the design process (i.e. what type of concept selection methods did you use, was it in a team or individually, did you have a say in what ideas moved forward, etc.)?
5. Of these concepts, how many were selected to move on to the next stage of the design process (prototyping, detailed design)? Why were these concepts selected?
6. During this concept selection process, did you use any formal concept selection methods (e.g. Pugh's concept evaluation, voting, Analytic Hierarchy Process, or any variants)?
   - ❍ Yes, list the methods: _____
   - ❍ No, why? _____
7. Was the process used during the design project described (concept development and selection) typical for you or your company? Why or why not?

The following 5 questions ask about creative concept selection in your company. The purpose of these questions is to add to our understanding of how creative ideas are selected during the design process and the factors that impact the selection of these creative concepts to address a design goal. You may skip any questions that you do not wish to answer.

1. During a typical engineering design project, rate your preference for selecting creative or conventional ideas to address the design goal:

Very much prefer creative ideas	Prefer creative ideas	No preference for creative or conventional ideas	Prefer conventional ideas	Very much prefer conventional ideas
❍	❍	❍	❍	❍

2. Why?
3. During a typical engineering design project, rate your company's preference for selecting creative or conventional ideas to address the design goal:

Very much prefer creative ideas	Prefer creative ideas	No preference for creative or conventional ideas	Prefer conventional ideas	Very much prefer conventional ideas
❍	❍	❍	❍	❍

4. Why?

5. Do the currently practiced concept selection methods used in your company encourage or discourage the selection of creative ideas?
   - ❍ Encourage the selection of creative ideas. Why? _____
   - ❍ Discourage the selection of creative ideas. Why? _____

Below is a list of formal concept selection methods that have been developed to increase the effectiveness of the concept selection process. For each one, rate your familiarity with each method (Do you know what it is?)

	Extremely familiar 1	2	3	4	Never heard of this before 5
Pugh's Concept Evaluation Method	❍	❍	❍	❍	❍
Analytic Hierarchy Process (AHP)	❍	❍	❍	❍	❍
Quality Function Deployment (QFD)	❍	❍	❍	❍	❍
Fuzzy Set Method	❍	❍	❍	❍	❍
Utility Theory	❍	❍	❍	❍	❍
"Plus-minus" Method	❍	❍	❍	❍	❍
Multi-voting	❍	❍	❍	❍	❍
Axiomatic Design Selection Method	❍	❍	❍	❍	❍
Hypothetical Equivalents and Inequivalents Method (HEIM)	❍	❍	❍	❍	❍
Go/ No Go Screening	❍	❍	❍	❍	❍
Product Reaction Cards	❍	❍	❍	❍	❍

For each of the concept selection methods listed above, please now rate your the perceived level of utility of each method for use during the concept selection process.

	Extremely useful 1	2	3	4	Not useful at all 5
Pugh's Concept Evaluation Method	❍	❍	❍	❍	❍
Analytic Hierarchy Process (AHP)	❍	❍	❍	❍	❍
Quality Function Deployment (QFD)	❍	❍	❍	❍	❍
Fuzzy Set Method	❍	❍	❍	❍	❍
Utility Theory	❍	❍	❍	❍	❍
"Plus-minus" Method	❍	❍	❍	❍	❍
Multi-voting	❍	❍	❍	❍	❍
Axiomatic Design Selection Method	❍	❍	❍	❍	❍
Hypothetical Equivalents and Inequivalents Method (HEIM)	❍	❍	❍	❍	❍
Go/ No Go Screening	❍	❍	❍	❍	❍
Product Reaction Cards	❍	❍	❍	❍	❍