

Kano Model

Because the majority of our complaints about the umbrella were strong, we constructed a Kano survey that included 43 questions – 21 positive/negative questions pairs, plus one general question that was not used in the construction of the Kano model (How do you feel about the appearance of the umbrella?)

Here is an example of a completed, evaluated survey:

Age	42
Gender	F
# of Umbrellas owned	5

Questions	Like	Normal	Don't Care	Don't Like	Function Classification
How do you feel about the possible pinch points in an umbrella				1	normal
How do you feel about eliminating pinch points in an umbrella	1				
How do you feel about the durability umbrella that may flipping inside out				1	normal
How do you feel about a more durable umbrella, greatly reducing possibility of flipping inside out	1				
How do you feel about the umbrella spokes bending				1	normal
How do you feel about elimination umbrella spokes from bending	1				
How do you feel about having no assistance in remembering an umbrella				1	normal
How do you feel about having assistance in remembering an umbrella	1				
How do you feel about closing a wet umbrella after use				1	normal
How do you feel about closing a drier umbrella after use	1				
How do you feel about leaving an umbrella open to dry			1		delighted
How do you feel about not having leave an umbrella open to dry	1				
How do you feel about the pointed ends of the spokes of an umbrella			1		function unneeded
How do you feel about softening the ends of the spokes of an umbrella			1		
How do you feel about not being able to center the umbrella above you				1	normal
How do you feel about being able to center the umbrella above you	1				
How do you feel about the difficulty in storing an umbrella			1		function unneeded
How do you feel about having an easier to store an umbrella			1		
How do you feel about an umbrella that is not capable of standing on its own			1		function unneeded
How do you feel about an umbrella that is capable of standing on its own			1		
How do you feel about the appearance of an umbrella		1			
How do you feel about the opening of an umbrella		1			delighted
How do you feel about reducing the awkwardness of opening an umbrella	1				
How do you feel about an umbrella that is easy to forget				1	expected
How do you feel about an umbrella that is difficult to forget			1		
How do you feel about the threads coming loose around the fabric of the umbrella				1	normal
How do you feel about the threads not coming loose around the fabric of the umbrella	1				
How do you feel about the space to share under an umbrella				1	normal
How do you feel about having increased space to share under an umbrella	1				
How do you feel about the weight of an umbrella			1		delighted
How do you feel about decreasing the weight umbrella	1				
How do you feel about carrying an umbrella around with you				1	normal
How do you feel about making an umbrella easier to carry	1				
How do you feel about the amount of coverage of an umbrella		1			function unneeded
How do you feel about increasing the amount of coverage of an umbrella			1		
How do you feel about the water dripping on you around the edges of the umbrella				1	normal
How do you feel about the water not dripping on you around the edges of the umbrella	1				
How do you feel about the lack of transparency in an umbrella			1		function unneeded
How do you feel about having transparency in an umbrella			1		
How do you feel about the length of the handle for an umbrella			1		function unneeded
How do you feel about a longer length handle for an umbrella			1		
How do you feel about having a separate storage sleeve for the umbrella				1	normal
How do you feel about having an integrated storage sleeve for the umbrella	1				

The Kano Matrix:

		Negative Response Question (as is product)			
		Like	Normal	Don't Care	Don't Like
Positive Response Question (new feature)	Like		<i>Delighted</i>	<i>Delighted</i>	<i>Normal</i>
	Normal				<i>Expected</i>
	Don't Care				<i>Expected</i>
	Don't Like				

The survey was given to labmates, friends, family, and mall shoppers at Coach and Marshall Fields stores. Twenty-two people, in total, took the survey. Some people commented that they found the pairing of the positive and negative questions to be leading. In future use of this survey technique, our team believes it would be better to separate the positive/negative questions from each other in the survey.

The results of the survey were used to classify functions as “delighted,” “normal,” “expected,” or “unnneeded.” These classifications were then tallied over all surveys in order to determine the general classification of each function. Functions that were classified with a majority rating of normal or delighting are highlighted in the table below.

Feature	Number of people					Majority Rating
	Delighted	Normal	Expected	No feature change		
Eliminate pinch points	2	8	1	11		No feature change
Unflippable, more durable canopy	1	17	2	2		Normal
Eliminate spokes bending	1	17	0	4		Normal
Help remembering umbrella	4	4	1	13		No feature change
Closing a drier umbrella	5	13	1	3		Normal
Not have to leave umbrella open to dry	8	7	1	6		Delighted
Eliminate pointed ends on spokes	4	9	1	8		Normal
Ability to center umbrella above you	2	9	1	10		No feature change
Easier to store	4	4	0	14		No feature change
Ability to stand on its own	1	5	0	16		No feature change
Reduce awkwardness to open	8	4	1	9		No feature change
Prevent loose threads (Canopy won't detach from frame)	3	16	1	2		Normal
Increased space to share (increased coverage)	1	13	1	7		Normal
Lightweight	11	5	0	6		Delighted
Easy to carry	5	9	1	7		Normal
Increased Coverage	7	6	3	6		Delighted
Eliminate water dripping off edges of umbrella	0	17	1	4		Normal
Transparency	1	1	0	20		No feature change
Increase handle length	3	5	0	14		No feature change
Integrated storage sleeve	4	8	0	10		No feature change

The results of the survey were then used to select our delighting functions and normal functions for the product design mission statement. For delighting functions, we decided to focus on “Increased Coverage” and “Lightweight.” We did note that these two functions may be in direct conflict with each other – increasing coverage alone will increase the weight of the umbrella. We hope to address both of these features through a combination of changes to the design.

From the functions categorized as normal, we selected “Unflippable,” “Eliminate bending spokes,” “Eliminate pointed ends on spokes,” “Prevent loose threads,” and “Eliminate water dripping off edges” as constraints for our product design mission statement. We further specified “Eliminate water dripping off edges” to “Eliminate water dripping onto back or backpack,” to reflect the majority of comments we heard about this particular survey question. We believe that the normal function of “Increased space to share” will be covered by the delighting function of “Increased Coverage.” We choose not to address “Closing a drier umbrella,” and “Easy to carry.” However, our product design specifications include making the umbrella ergonomically easy to hold as well as size constraints on both the open and closed configurations of the umbrella. The intent of these specifications is to ensure that the redesigned umbrella is at least as easy to carry as the current umbrella design. We found it interesting that most of the functions classified as “Normal” under the Kano classification system are not functions of the majority of umbrellas, and that no function received a majority rating of “expected.”