Refrigerator Q Study
Q Methodology Studies at CR

CR CONDUCTS Q STUDIES

To ensure our test protocols include issues that consumers care about

To align with consumer behavior so that scoring schemes better reflect their needs

To capture the natural context of use, consumer pain-points, questions and concerns

WHAT IS Q METHODOLOGY?

Q Methodology was a research technique invented in 1935 by William Stephenson to study the range of opinions regarding a specific topic under investigation. The goal was to find common viewpoints among participants – how and why people think the way they do.

Participants are presented with statements and asked to sort and then rank them from least important/useful to most important/useful.

The individual responses are combined and reduced to a few factors that highlight the predominant views across groups of people.

CR couples this technique with in-depth interviews on the topic being researched to get rich insights.

Example of Sorting exercise

<table>
<thead>
<tr>
<th>Most Disagree</th>
<th>Most Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>-4</td>
<td>+4</td>
</tr>
<tr>
<td>-3</td>
<td>+3</td>
</tr>
<tr>
<td>-2</td>
<td>+2</td>
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<tr>
<td>-1</td>
<td>+1</td>
</tr>
<tr>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
Refrigerators Q Study

OBJECTIVES OF Q STUDY

To explore which features in refrigerators consumers are most interested in

To probe deeper into consumers’ experiences with the features

To understand the importance of some of the refrigerator attributes CR rates

WHAT WE DID

In November 2016, we conducted live one-on-one sessions with 15 homeowners, who had purchased their main, new refrigerator between 2011 and 2016.

During each session, the participant was interviewed about his/her experiences with their refrigerator. This was coupled with a Q-Method test where 48 statements (cards) were ranked based on usefulness under the following condition: Imagine you are buying a new kitchen refrigerator, what would be useful to have?

Most participants identified themselves as CR readers and fell into our target audience. Household size ranged from 1 to 6 persons and more than half of the families had young children living at home. We had an equal representation of refrigerator types (5 French door/bottom freezer, 5 side-by-side and 5 top freezer) and a variety of brands.

Most refrigerators had external water and ice dispensers, a few were counter-depth and the claimed capacity ranged from 11 to 28 cubic feet.
Q Method Results, by Overall and by Segment
Two predominant factors emerged

Most participants fell into one of two factors. Each factor represented their varying viewpoints.

**FACTOR 1**

**THIRSTY ON A BUDGET**
Most participants had an external water and ice dispenser on their refrigerator and all noted money saved by not having to open doors (e.g., during hot weather or for getting ice) and not having to buy bottled water.

**FACTOR 2**

**SPENDERS IN SMALL SPACES**
Some had pretty significant space issues in their kitchen. They were definitely less budget conscious than Factor 1 and a few had fairly significant trouble with drawers and bins not gliding well and/or bins whose parts had broken more than once. Despite most having an external water and ice dispenser, Factor 2 participants viewed it as much less useful than Factor 1 participants.
Question: Imagine you are buying a new kitchen refrigerator, what would be useful to have?

- Reliability
- Sufficient capacity
- A fridge that fits my space
- An overall appearance I like
- Shelf heights that can adjust while loaded
- Separate temperature setting controls for refrigerator and freezer
- Big bins/drawers which accommodate large or long items
- Ice maker with external ice dispenser
- Spill proof shelves
- Smooth gliding storage drawers and bins

*listed in decreasing order of usefulness, meaning those on top were viewed as most useful

Ice maker only
Wi-Fi
Counter-depth fridge
See through the doors
Quick chill setting
Control locks for water/ice dispenser and/or temperature controls
The ability to diagnose problems via the phone
Self-closing doors
Beverage chiller on door
Soft-free zone for ice cream

*listed in increasing order of usefulness, meaning those on top were viewed as least useful
FACTOR 1: THIRSTY ON A BUDGET

FACTOR 1: Thirsty on a Budget, Top 10 Statements*

1. Reliability
2. Built-in water filter
3. Water dispenser
4. Energy efficiency
5. Sufficient capacity
6. Ice maker with external ice dispenser
7. Best refrigerator I can buy within my budget
8. A fridge that fits my space
9. An overall appearance I like
10. Separate temperature setting controls for refrigerator and freezer

FACTOR 1: Thirsty On a Budget, Bottom 10 Statements*

1. Ice maker only
2. Handles that are recessed
3. Beverage chiller on door
4. Dairy bin
5. Counter-depth fridge
6. Quick chill setting
7. Best refrigerator regardless of price
8. The ability to diagnose problems via the phone
9. Door within a door so you don’t have to open main door
10. Self-closing doors

*listed in decreasing order of usefulness, meaning those on top were viewed as most useful

*listed in increasing order of usefulness, meaning those on top were viewed as least useful
FACTOR 2: SPENDERS IN A SMALL SPACE

**FACTOR 2: Spenders in a Small Space, Top 10 Statements** *

- Sufficient capacity
- Reliability
- A fridge that fits my space
- Smooth gliding storage drawers and bins
- An overall appearance I like
- Shelf heights that can adjust while loaded
- A quiet operation
- Big bins/drawers which accommodate large or long items
- Drawers and bins that extend fully
- Spillproof shelves

*listed in decreasing order of usefulness, meaning those on top were viewed as most useful

**FACTOR 2: Spenders in a Small Space, Bottom 10 Statements** *

- Wi-Fi
- Control locks for water/ice dispenser and/or temperature controls
- Ice maker only
- See through doors
- Built-in water filter
- Water dispenser
- Best refrigerator I can buy within my budget
- Freezer light
- Counter-depth fridge
- Audible alarm when doors are left open

*listed in increasing order of usefulness, meaning those on top were viewed as least useful
Purchase Experience and Reasons for Choosing
Research techniques varied among those purchasing refrigerators

**Visiting larger retailers** (e.g., Best Buy, Home Depot, Lowes, Sears, Walmart) and **local stores** were frequently mentioned.

**Going online** was another common research tool. When online, price, features and warranty comparisons were conducted. Some searched online and then went to a store.

Online research included websites from:
- Manufacturers (a few complained that manufacturer websites were not user friendly)
- Larger retailers (see above) and local stores
- Amazon
- Consumer Reports
- Google
- CNET

Looking at user reviews (from retailers and manufacturers):
- Customer reviews were stated as important for big purchases
- A few were concerned about the authenticity of user reviews

A few did **no research** at all, as they were in a rush, particularly if their current refrigerator had just broken.

- Ordering online or going to a store and buying what was in stock was how they purchased the new one

**Other approaches mentioned included:**
- Just going with a brand that was familiar to them
- Seeking out recommendations from friends and family
- Posting on social media for advice
- Some participants considered buying a used refrigerator on eBay or Craig’s list but decided against it because of concerns about repairs
Reasons for choosing refrigerator: Participants have varied reasons for picking their refrigerator; specific features and home/space requirements were often stated

- Had size/space restrictions
- Was moving into a new home or doing a kitchen renovation
- Wanted to be able to access refrigerated foods at eye level (French door)

- Wanted a nice looking/updated model, e.g., stainless finish
- Wanted larger capacity (overall and individual bins)
- Wanted easier access for kids (French door, top freezer)
- Wanted certain features, e.g., external ice and water dispenser, internal ice storage, door-in-door, adjustable shelves
- Wanted separate refrigerator and freezer temperature settings

- Previous refrigerator broke
- Wanted to make sure that it didn’t have certain features, e.g., ice makers/dispensers can break
- Had good customer reviews

- Wanted to stay with the same brand
- Just wanted a basic one for now, would get dream refrigerator in the future
- Wanted one that would accept magnets
- Had good pricing/warranty
- Had to be in stock and have quick delivery (for those whose refrigerator broke)
- I simply replaced or upgraded my refrigerator
Reasons why many participants changed their refrigerator type

Reasons for Changing Refrigerator Type

- Didn’t want to bend down anymore to access food (from top freezer to side-by-side, from French door to top freezer)
- Wanted to be able to look at refrigerated foods at eye level (from top freezer to French door)
- Didn’t like the set-up, e.g., hard to get food out of the freezer because food piles up (from French door to side-by-side)
- Doors weren’t easy or convenient to open (from French door to side-by-side, from side-by-side to French door, from top freezer to side-by-side)
- Wanted to upgrade or moved into a new home
- To save money (from side-by-side to top freezer)
Features and Satisfaction
Participant comments on special features

**Adjustable shelves**, including those with half shelves
- Made it easier to store food
- Made it easier to clean
- Spill-proof shelves also made it easier to clean

**Flex zone** (also referred to as a drink drawer)
- Were a great height for kids
- Complaint was that it didn’t convert to a freezer

**External water dispenser**
- Liked that it dispensed hot and cold water
- Liked that it had a night light

**Water filter** that lets you know when it needs to be changed
- Some commented that filter cartridges were expensive
- Better location and therefore easier to change than in previous refrigerator

**External ice dispenser**
- Liked it to get crushed or cubed ice
- A few noted that their ice or water dispenser was currently not working or dripped

**Door-in-door**
- Convenient for gallons of milk, bottled drinks, condiments, helps keep the refrigerator organized
Comments on features and other likes

- Multiple freezer doors so items don’t get lost
- Easily accessible refrigerator compartments
  - So kids can have easy entry
  - Foods at eye level
- An alarm to alert you when a door was left open
  - Complaints about the alarm included that the alarm would not go off if there was just a tiny gap in the doors and, the alarm goes off prematurely when putting away groceries
- A water filter warning that alerts you when the filter needs to be changed (prior to no longer dispensing water)
- Bright lights inside the unit
- Ability to put hot food in the refrigerator and temperature of surrounding food won’t change
- Ice maker/dispenser (also a dislike, see next slide)
  - One commented that the dispenser accommodated large bottles and was easy to clean
  - Another was a fan of the auto-fill feature as she drank a lot of water and used the dispenser to measure water for cooking
- Water Dispenser
  - Reliability was mentioned by several
  - Quietness (though noise was a problem for some, whose refrigerators were near bedrooms or had ice dispensers)
- The look and feel
Features that participants would like to change about their refrigerators

There were many comments about the ice maker/dispenser, both positive, but mostly negative

- A more efficient, less prone-to-break ice maker/dispenser
  - e.g., ice gets jammed in dispenser, leaks, takes too long to dispense ice
- Remove the ice maker/dispenser as it was too prone to breakage
- Have the internal ice maker take up less room
- Include an ice maker (top freezer)

Better configuration of refrigerators

- Would like a place to be able to store pizza and other large items (side-by-side)
- Would like space for eggs on the door (side-by-side)
- Would like to put a 2-liter or gallon bottle on the door (side-by-side)
- A better configured freezer so items don’t get lost (French door)

Comments were made about the door handles

- Hoping for a sturdier handle
- The stainless was “rough” and preferred a “soft” plastic handle
- A few stated that the handles get dirty and/or were not fingerprint resistant
- Those with fingerprint resistance wished it was easier to clean and less prone to scratches
Repairs
Problems that needed repairs occurred with ice maker and ice/water dispensers

- Ice maker/dispenser broke within 6 months of purchase
- Ice stuck inside the dispenser so it couldn’t dispense ice
- Ice maker ended up being disconnected because it was leaking a liquid
- The water/ice dispenser made a loud noise and couldn’t be used
- The water dispenser dripped water
- Compressor broke after only two years of ownership and took two weeks to repair
- Plastic clips that held up the vegetable bins repeatedly broke and the extended warranty was used to replace them
- The handle broke off and the person was just planning on using superglue to put it back on
- Duct tape was used to repair a broken bin as a new one would be too expensive to replace
Ease of Use
Several features or functions were mentioned to make for an easier to use refrigerator

Several comments were made about the water filter

- An easy to change water filter (meaning both the physical action of replacing and location of the water filter)
- Water filter notifier for changing

Ice maker/dispenser

- Internal ice maker takes up too much room
- Frequent breakages
- Only one chute for water/ice

Having an electronic display (though took some getting used to)

Adjustable shelves and different sized shelves and bins

Shelves and drawers that come out easily for cleaning

Door-in-door (though not universally appreciated)

Despite the complaints, having a water and ice dispenser

Having a drink drawer for easy kid access

Easy to reach areas of a refrigerator

- Top, back and under the refrigerator were harder to clean, as were the coils and the external dispensers
- Due to space limitations, a few had doors that wouldn't open fully and therefore had some bins that were hard to reach
Summary

People have different points of view, when it comes to usefulness of features, performance and functions of their refrigerators. Some common themes noted during the Q study were:

- A love/hate relationship with the water dispenser and ice maker/dispenser
- Reliability is important, especially given the problems with the water dispenser and ice maker/dispenser
- Having a good internal layout with sufficient space, as well as easy accessibility is key. Many with side-by-side refrigerators had issues
- Many people have space limitations in the kitchen
- The look is also important as people want their appliances to fit their decor (and don’t want to see fingerprints)
- Price is definitely a factor for some. This includes the cost of replacing the water filter
- Door alarms were viewed as a blessing and an annoyance
- There is no one way that people research refrigerators before purchasing, though user reviews are important
- Noise is a factor for some due to location in the home and the ice dispenser
- Issues with handles were unexpectedly mentioned fairly often
Thank You

intelligence for a better marketplace

https://data.consumerreports.org/