Searcher in a Strange Land: Understanding Web Search from *Familiar* and *Unfamiliar Locations*
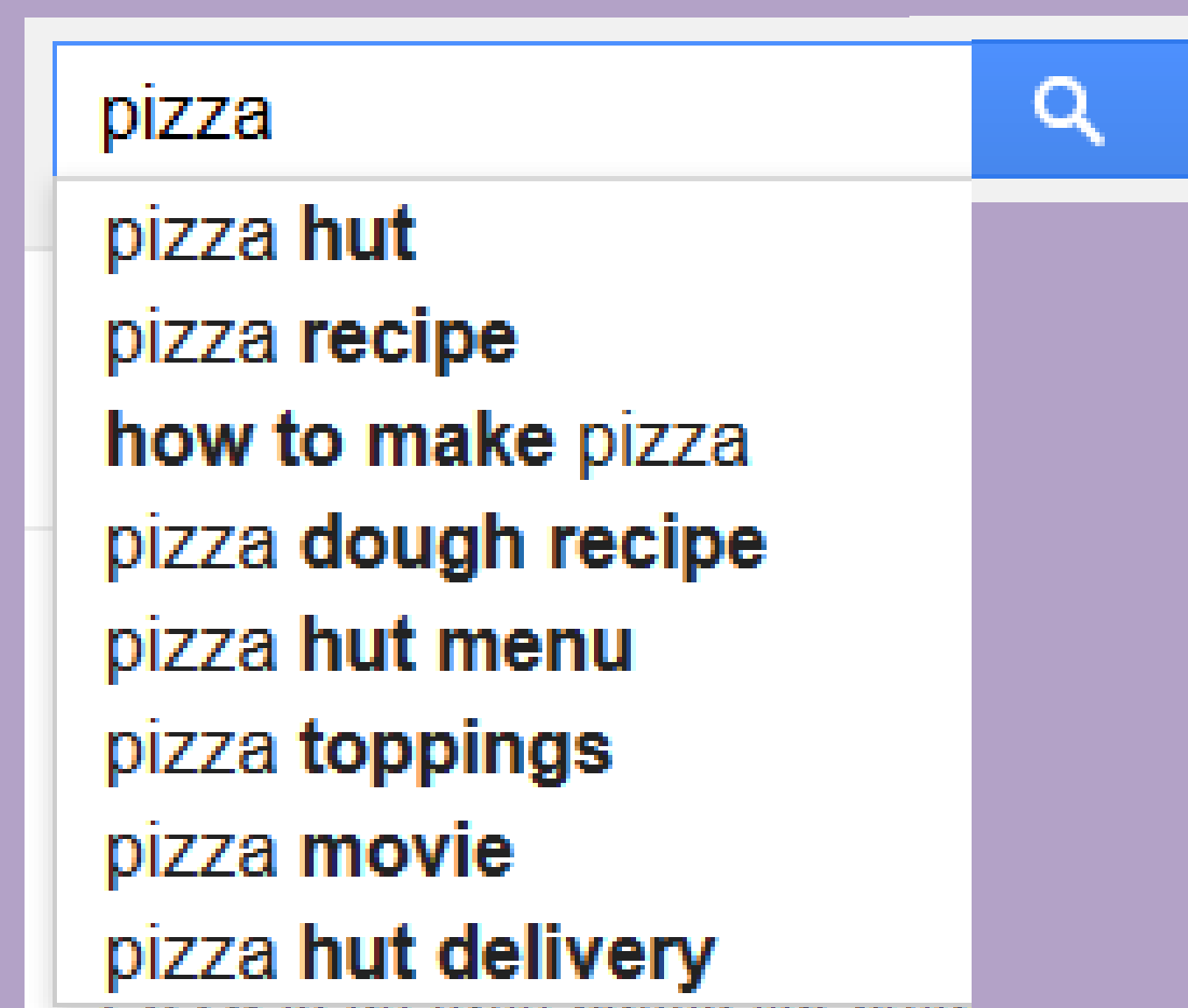
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Pizza

pizza

- pizza **hut**
- pizza **recipe**
- **how to make** pizza
- pizza **dough recipe**
- pizza **hut menu**
- pizza **toppings**
- pizza **movie**
- pizza **hut delivery**

- **Pizza dough?**
- **Pizza place?**
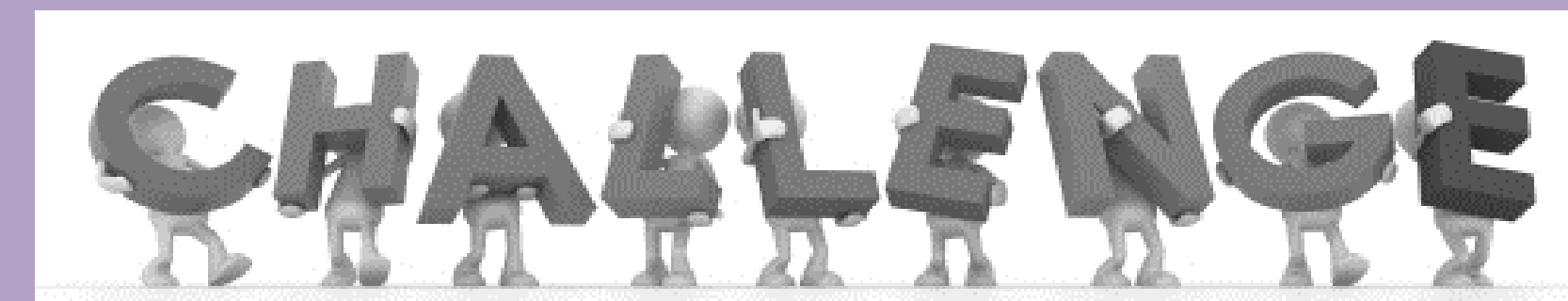
Familiar location ≠ **Unfamiliar location**

Problem

F-Search (*U*-Search) –search activity performed from a location **familiar** (unfamiliar) to the user

- **What is a familiar location?**
- **How to find such a location?**

CHALLENGE

Preliminary Results

Contrasting Popular Query Terms for F-Search and U-Search

Unigrams		Bigrams	
F-Search	*U*-Search	*F*-Search	*U*-Search
facebook	google	for sale	new york
sale	restaurant	how to	phone number
free	schedule	facebook login	google search
games	football	to make	new jersey
ebay	ny	homes for	high school
how	lyrics	cool math	how many
login	ct	you tube	hobby lobby
online	store	sales in	in new
craigslist	movie	funeral home	football schedule
recipes	hours	real estate	r us
porn	locations	black friday	movie theater
tube	mall	for kids	nfl scores

The **F-search** lists consist of activities related to **shopping, social networks, games, knowledge seeking and adult content**. The **U-search** lists, in contrast, are focused on **searching for location or schedule of restaurants, movies, malls, cities, institutes, and sport events**.

### Contrasting Popular Query Completions for F-Search and U-Search

Category	Familiar	Unfamiliar
pizza	dough:3, places:5	places:3, dough:5
gas	fireplace:3, station:6	station:3, fireplace:8
wild	rice:2, horse:5	horse:2, rice:4

The initial word of the query, together with excerpts from the query completion lists, ranked in decreasing order by completion frequency (in the format of '<comple- tion word>:<rank>')


Model verification
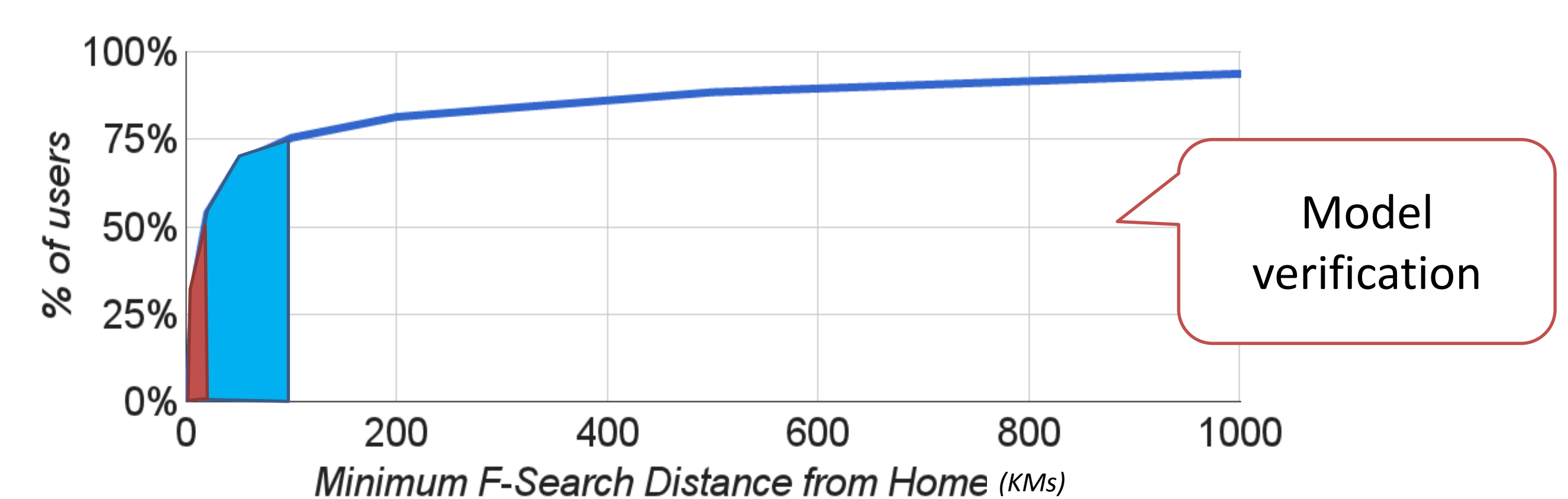
For **53.9% of the users**, the distance from declared home was **smaller than 20** kilometers and for **75.4% of the users** it was **smaller than 100 kilometers**.

Distribution of *F*-Searches
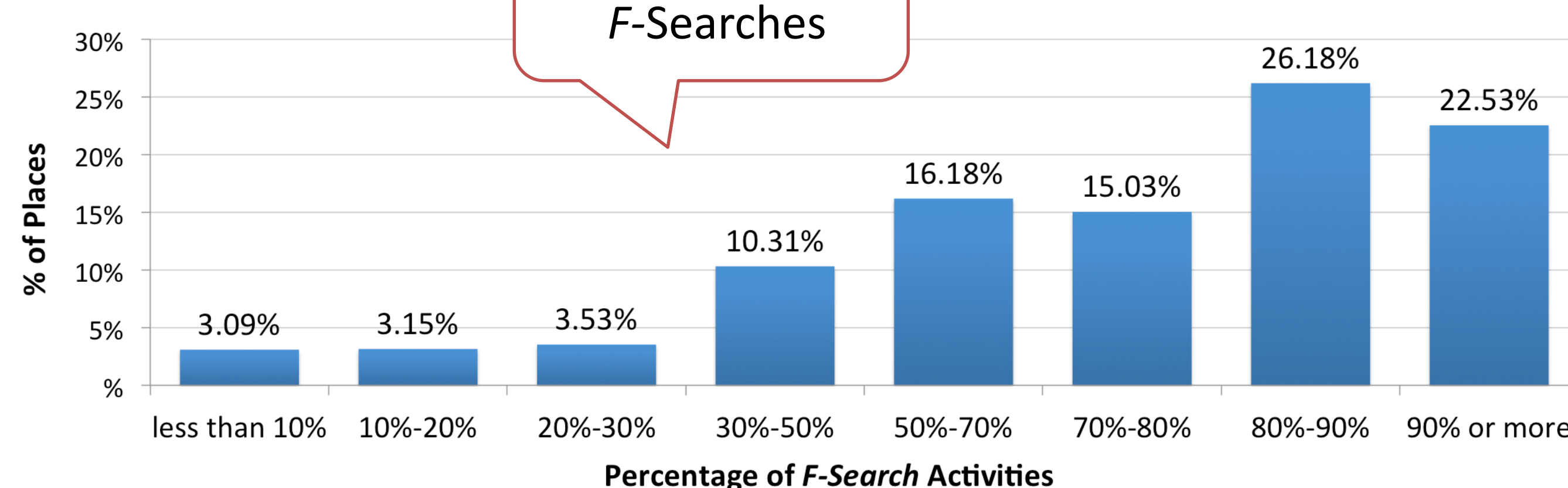
In nearly **50%** of the places, over **80% of the search activities were** *F*-Searches. In almost **80%** of the places, **there are more F-searches than U-Searches**.

Distribution of F-Search and U-Search per device
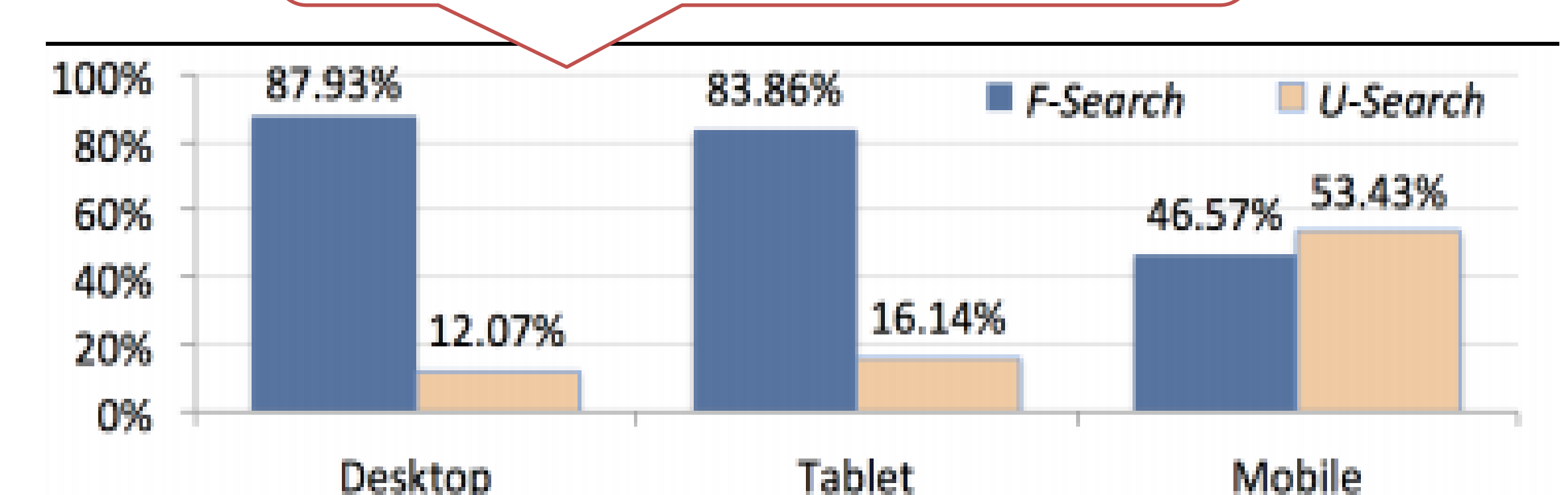
Surprisingly, **tablets are more similar to desktops** than to mobile phones.

Summary

- We presented a <u>new contextualization model</u> for web users, which distinguishes between *familiar* and *unfamiliar* locations of search.
- It may be possible to use *familiarity* to improve various applications such as web search, query suggestions, and search advertisement.
- The importance of understanding the nature of the user's place of activity is likely to increase as user mobility continues to expand, and locations of activity further diversify.

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