

Usability-testing the receipt scanning function

Informational meeting on November 22nd 2024

Smart Survey Implementation – WP 2.3

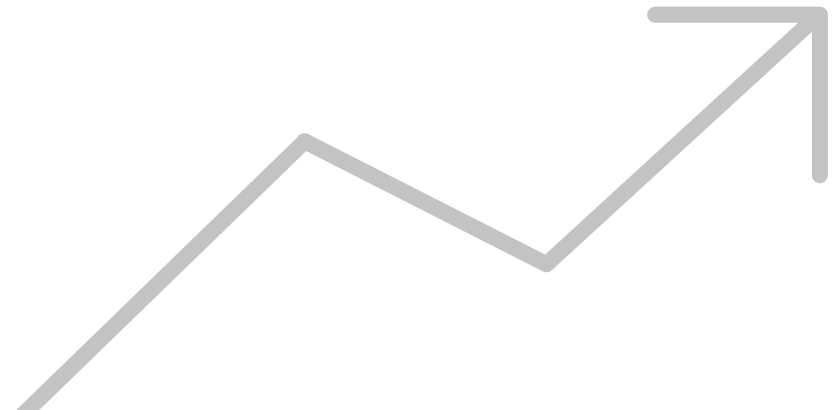
German test results



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Objectives & test setup



Objectives

Testing a receipt scanner prototype (OCR microservice)

Research Questions

ACCEPTANCE

Are users willing to use a smart feature to record their receipts?

USABILITY

How easy is the use of the receipt scanner as part of an app?



Screenshot – Taking a photo within the app for OCR

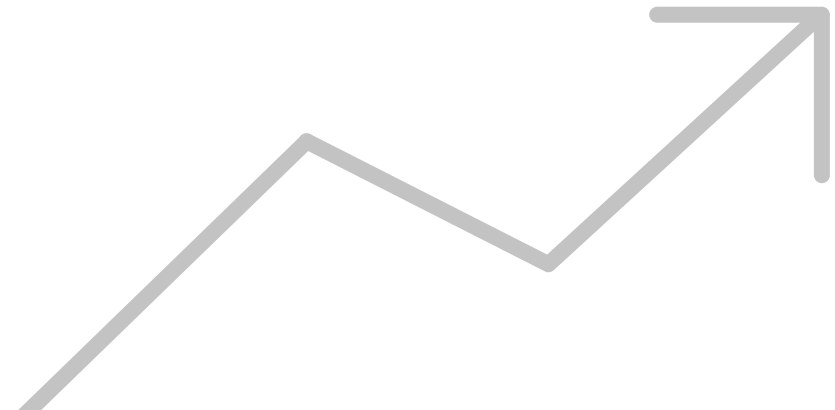


Screenshot – Scan result in the household diary

Qualitative usability interviews

- » 19 individual interviews conducted
 - » Participants varied in sex, age, education
 - » Use of own device
 - » Tasks to enter purchases via scanning receipts and manual entry
- » Survey period: 16th to 26th of July 2024
- » Carried out inhouse in Federal Statistical Office (Wiesbaden, Germany)
- » Time frame: 90 minutes
- » Incentive: 40,00 EUR

Results



Scanning is the preferred input option

- » All participants generally **prefer the scan option** over the manual input
 - » Handling is **faster** & **easier** (if scan results are correct)
 - » Participants are not willing to type in all the information manually
 - » Participants are used to scan functions
 - » No concerns regarding trust or privacy
- » High trust & expectations in scanner results

*“In any case, **scanning is better** if it doesn't take forever and doesn't make too many mistakes.” (TP01, m66)*

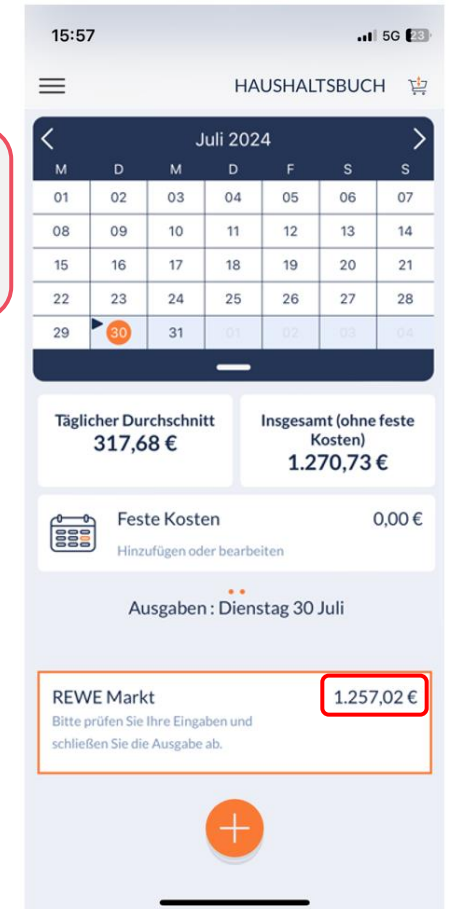
*“I would throw away receipts after scanning and no longer check them. **I would trust the app to get the results right.**” (TP12, f33)*

*“I'm happier with scanning because **you don't have to enter so much.**” (TP19, f21)*

Errors in scan results

- » Errors in scan results occurred frequently
 - » (reason: OCR algorithm was not trained enough)
 - » Wrong prices
 - » Typos in product names
 - » Resulting in a high correction effort
- » Most participants notice incorrect scan results (based on the total sum)
 - » However, they **do not correct errors as a matter of course**

“But I didn't spend that much money.” (TP19, f21)



Why participants do not correct results (1/2)

- » Correction takes **too much effort** & is considered **too time-consuming**
- » Most correct some errors
- » But would **not want to correct all products**
- » Especially if it is only about minor deviations in price or minor typos

“For large purchases, it would be very exhausting to correct everything.” (TP18, f32)

The image shows two screenshots of a mobile application interface for recording expenses. The left screenshot, taken at 15:48, displays a list of items under the heading 'NEUE AUSGABE'. The items listed are BANANE (0,00 €), KAROTTE (0,00 €), and FRU.JOGH.ANANAS (0,39 €). A yellow box highlights the 'BANANE' entry, and a yellow arrow points from it to the 'Ausgabe' field in the right screenshot. The right screenshot, taken at 15:55, shows the 'Ausgabe' field with 'banane' entered, the category 'Datteln, Feigen und tropische Früchte - frisch oder gekühlt', and a price of 1,99 €. The total amount is 1,99 €.

Why participants do not correct results (2/2)

- » Many do not add **missing COICOP** categories
 - » Product categories are not considered relevant
 - » Adding a category to each product is considered too much work
 - » Some expect the app to fill this in itself

"It goes into too much detail, which is not relevant." (TP15, f59)

"I actually thought that the app would do the categorization automatically. It's a bit tiring." (TP10, m18)

15:55 5G

NEUE AUSGABE

Ausgabe
banane

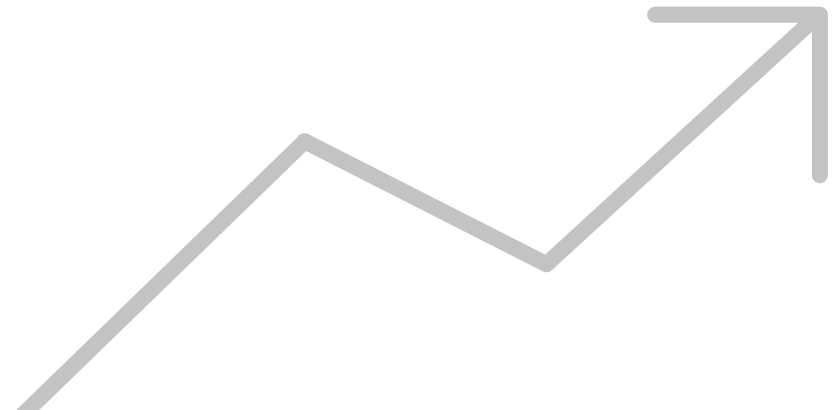
Kategorie
Datteln, Feigen und tropische Früchte - frisch oder gekühlt

Anzahl 1 Preis 1,99 €

Ich habe den Artikel zurückgegeben (Reklamation o. ä.)

Gesamtpreis: 1,99 € AKTUALISIEREN

Conclusion



Conclusion

- 1) The scan function is **the preferred input option**
 - » It is a **common, fast** and **easy** way to record receipts (if results are correct)

- 2) The **current level of maturity** of the scan function prototype is not satisfactory
 - » Scan results are prone to errors
 - » No automatically assigned COICOPs

- 3) Respondents expect a flawlessly working scanner function
 - » Additional work (correcting errors & COICOPs) is not accepted
 - » Scanning function needs to be as intuitive and easy to use as possible

Learnings

- » The **scanning** function is the **right way to go** to reduce respondent burden
 - » Further development needed
- » Scanner results (**OCR**): **further training** with more training data is crucial
 - » Receipts needed
- » **COICOP** category assignment **should not be shifted to respondents**
 - » either automated assignment as part of the receipt scanner
 - » or assignment later in NSIs

Thank you for your attention

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The team behind the study

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