When Does it Make Sense to Ask Respondents for Visual Data? Insights for (Mobile) Web Surveys

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Introduction

- An increasing proportion of web surveys are answered from a mobile device (Tourangeau et al., 2018), reaching 78.8% among millennials in the US and 63.8% in Spain (Bosch, Revilla & Paura, 2019b).

- Mobile devices have different sensors which offer new measurement opportunities → **visual data.**

- What is **visual data?**
  - Photos, screenshots, videos, and other types of visual content that can be stored in or accessed through a device, or produced with its camera or a screen capture tool.

Why visual data?

- Expected advantages:
  - Richer information than what people can describe by text.
  - Information that respondents are not aware of.
    - e.g. type of mosquito: Mosquito Alert project.
  - More accurate information when memory is involved.
    - i.e. "mention all the items you bought in your last purchase."
  - Could help engage groups with lower participation rates (e.g. Millennials, people with low literacy, etc.)

Considerations to ask for visual data

Researchers must bear in mind that…

Visual data does not work for all topics

Respondents' burden

Data quality, costs & ethics and data protection.
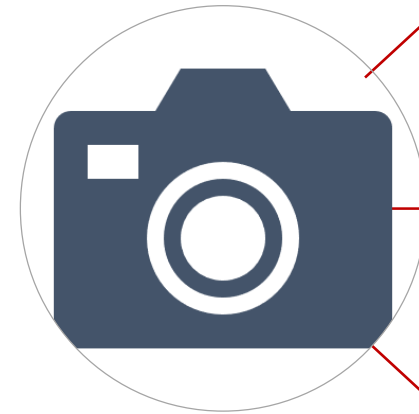
Considerations to ask for visual data

Researchers must bear in mind that...

- Visual data does not work for all topics
- Respondents' burden
- Data quality, costs & ethics and data protection.

In order to receive visual data, respondents should have the...

- **Skills** to create and/or share visual data
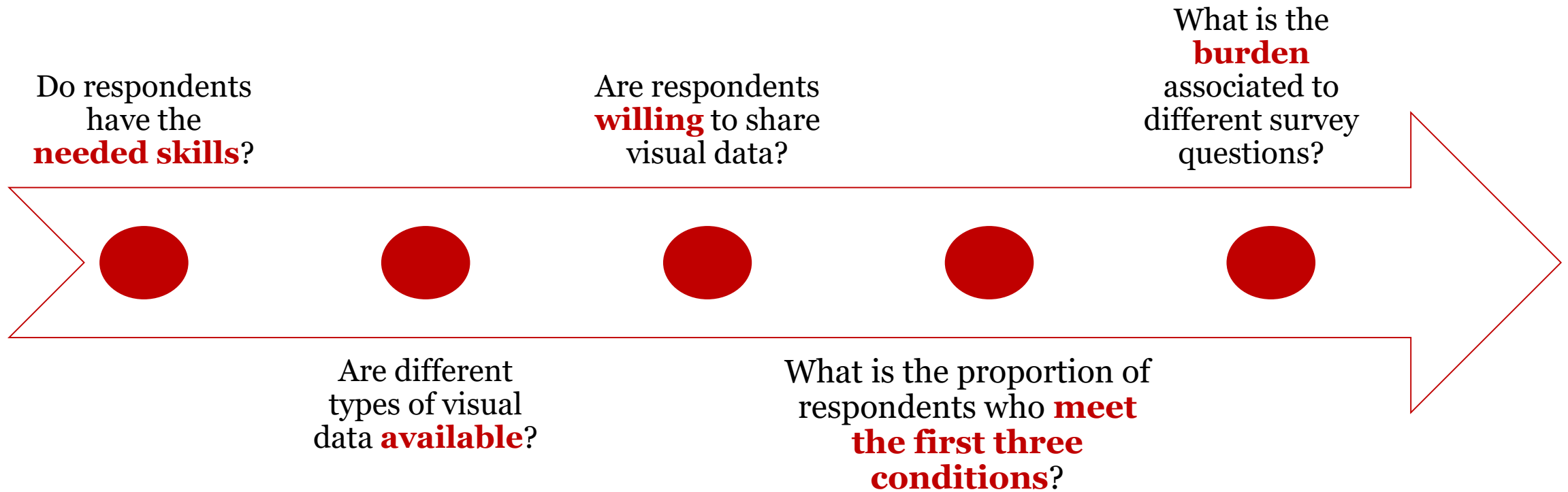- **Availability** of visual data
- **Willingness** to share visual data

Background

- Willingness
  - Between **50%** (Revilla et al., 2019) and **65%** (Wenz et al., 2019) have stated to be willing to share images when asked during a web survey.
  - The willingness varies depending on what is being asked (Struminskaya et al., 2021)

- Actual participation
  - The actual participation also differs, ranging from **11%** (Jäckle et al., 2019; Read, 2019) to **52%** (Bosch et al., 2019a).

Research question

When does it make sense to ask respondents for visual data?

Do respondents have the **needed skills**?

Are different types of visual data **available**?

Are respondents **willing** to share visual data?

What is the proportion of respondents who **meet the first three conditions**?

What is the **burden** associated to different survey questions?

Methods and Data

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- Online survey
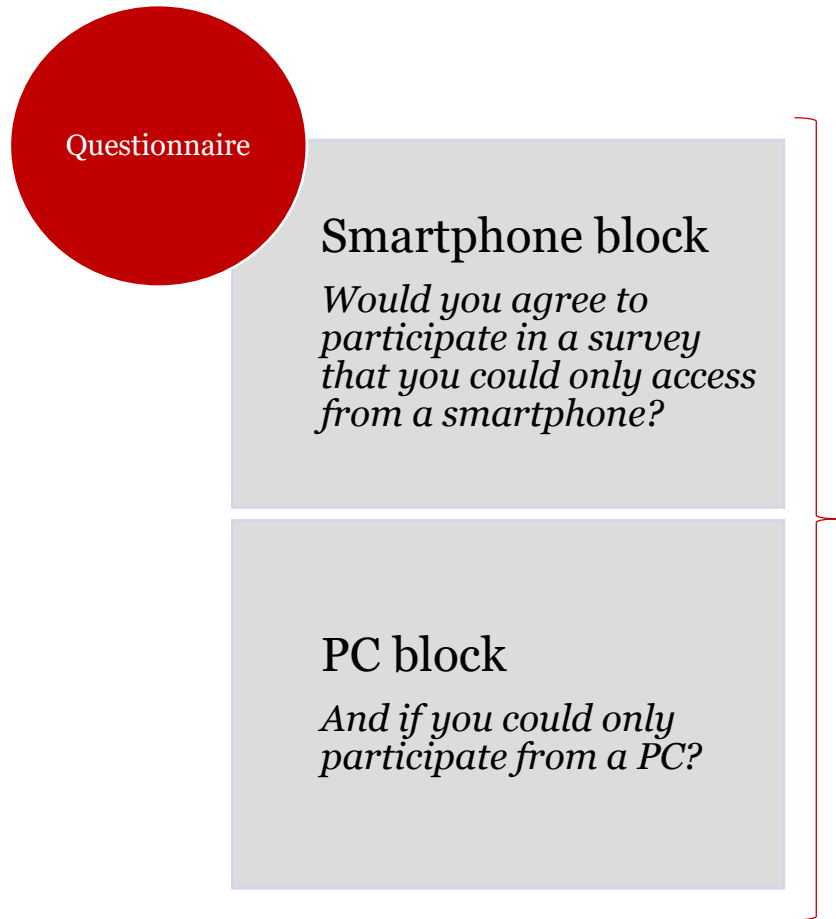
Questionnaire

Smartphone block

Would you agree to participate in a survey that you could only access from a smartphone?

PC block

And if you could only participate from a PC?

Methods and Data

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- Online survey

Questionnaire

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Would you agree to participate in a survey that you could only access from a smartphone?

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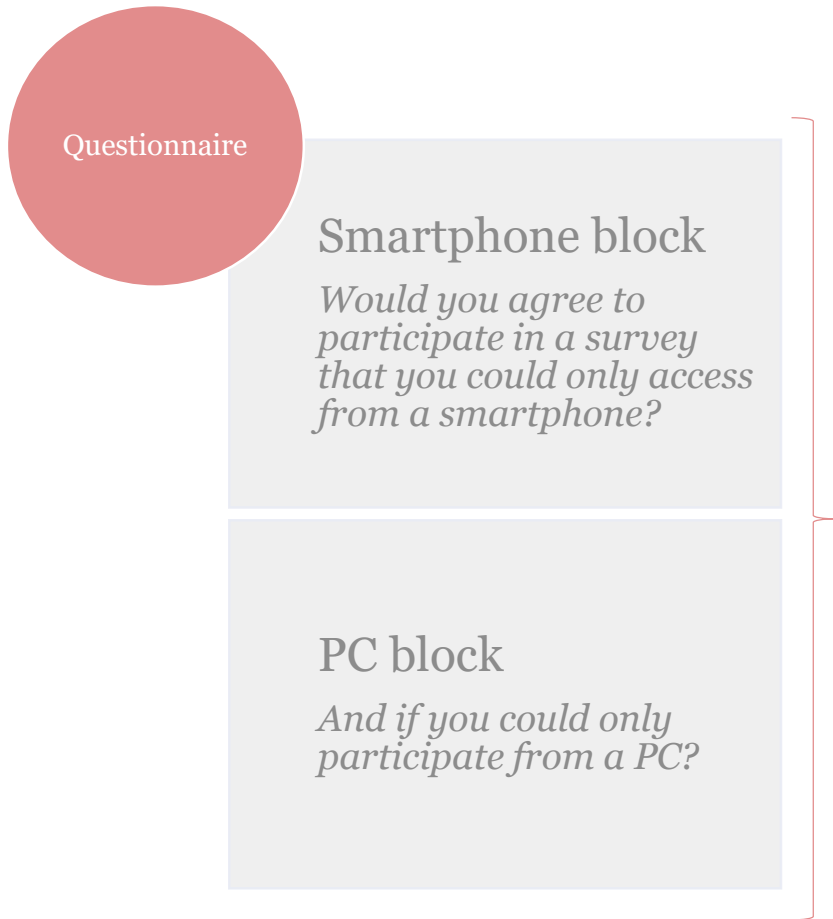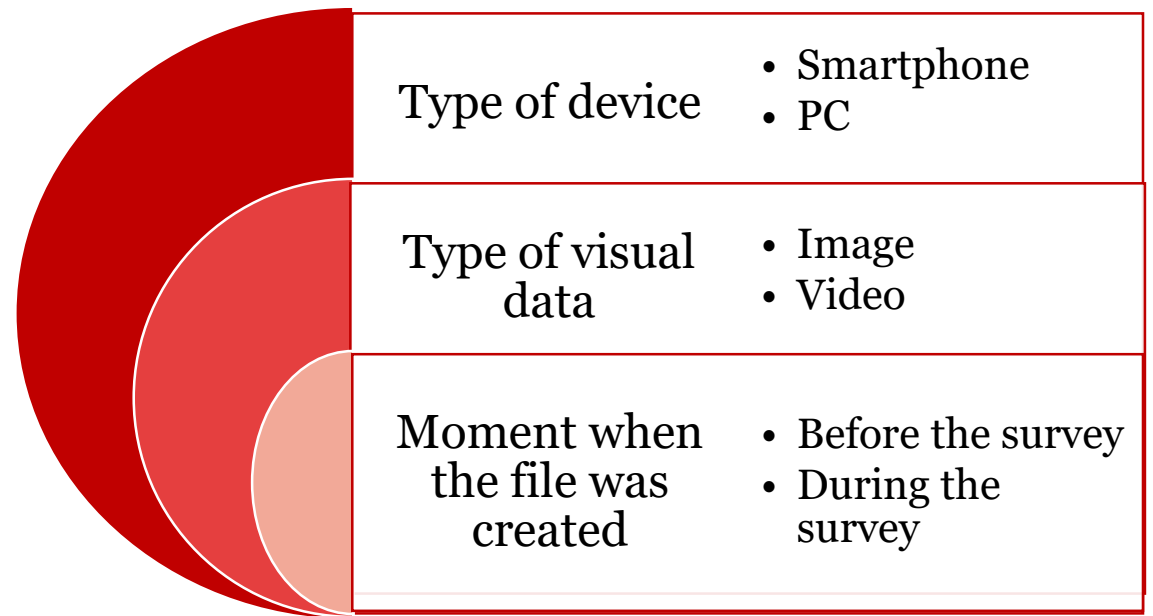
And if you could only participate from a PC?

- Up to 71 questions

- Allowed to continue without answering except for filter questions.

Methods and Data

- Online survey

Questionnaire

Smartphone block

Would you agree to participate in a survey that you could only access from a smartphone?

PC block

And if you could only participate from a PC?

- Up to 71 questions

- Allowed to continue without answering except for filter questions.

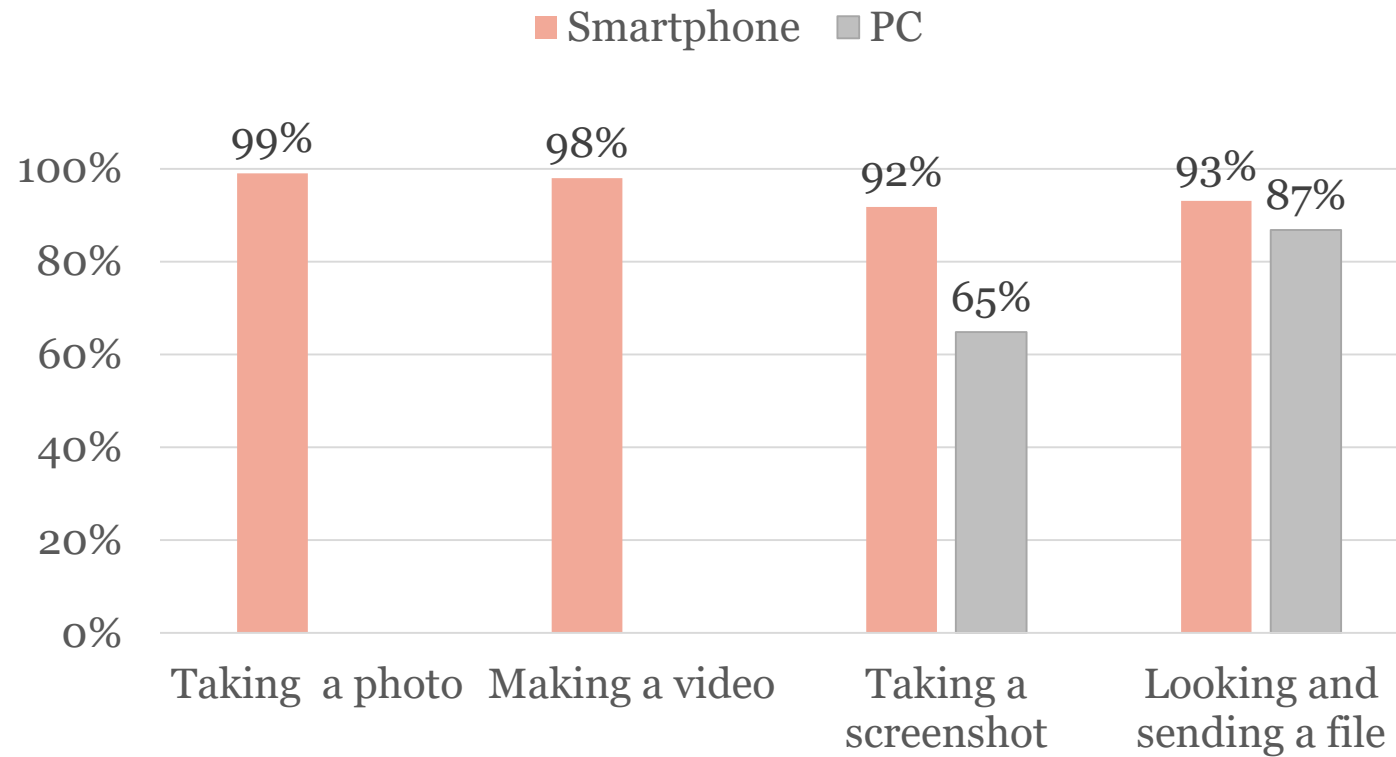| Type of device	• Smartphone • PC
Type of visual data	• Image • Video
Moment when the file was created	• Before the survey • During the survey

web data *opp*

Methods and Data

- Online opt-in panel in Spain (Netquest)
  - Data: May, 2021.
  - Quotas based on gender, age and education to be representative of internet adult population.
  - 857 respondents completed the survey.

- Analysis
  - Descriptive analysis and significance tests to characterize and compare the prevalence of the variables.

Results

*When comparing categories, all the differences shown in the slides are statistically significant.

# Skills of the respondents to create and/or share visual data

Smartphone ■ PC

	Taking a photo	Making a video	Taking a screenshot	Looking and sending a file
Smartphone	99%	98%	92%	93%
PC			65%	87%

Skills of the respondents to create and/or share visual data

- Almost all respondents know **how to take a photo or make a video**. Skills for the rest are high but already **not that universal**.
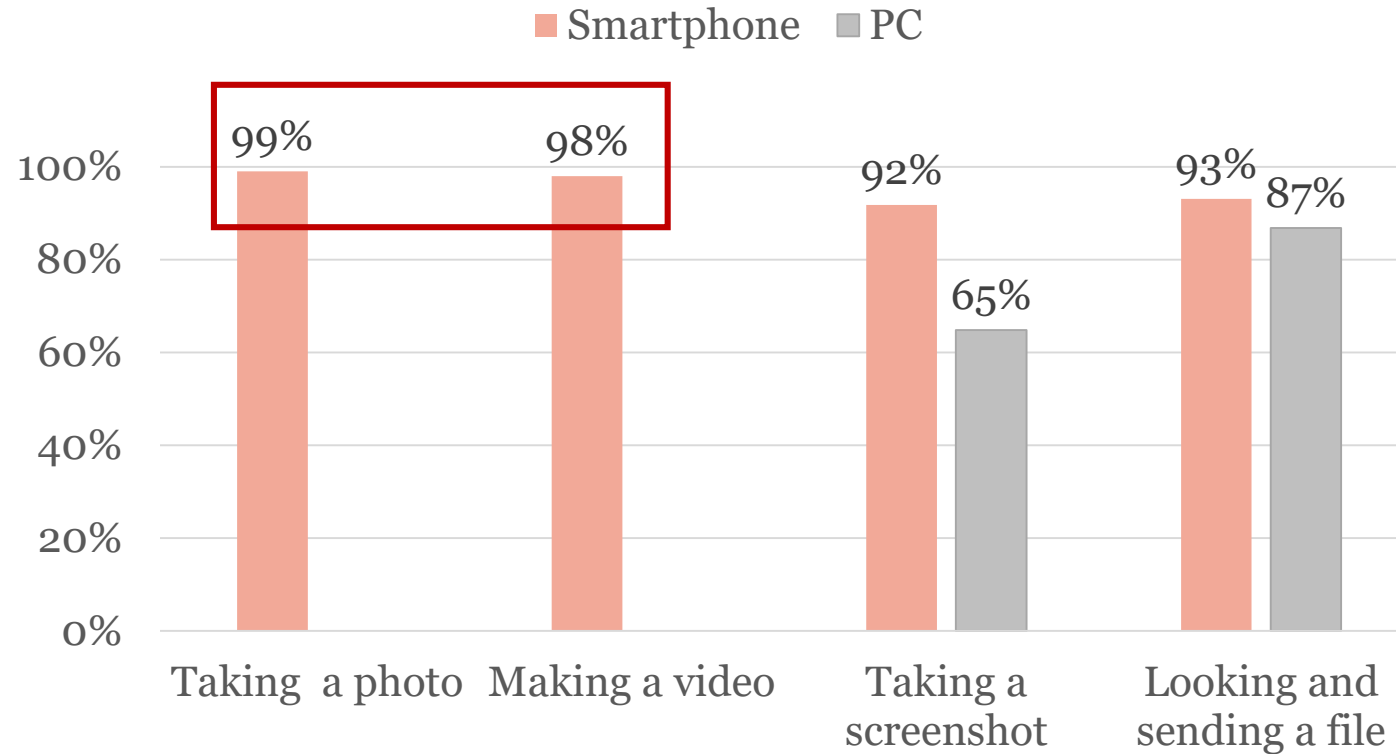
# Skills of the respondents to create and/or share visual data

- In general, skills are **higher for smartphone**.
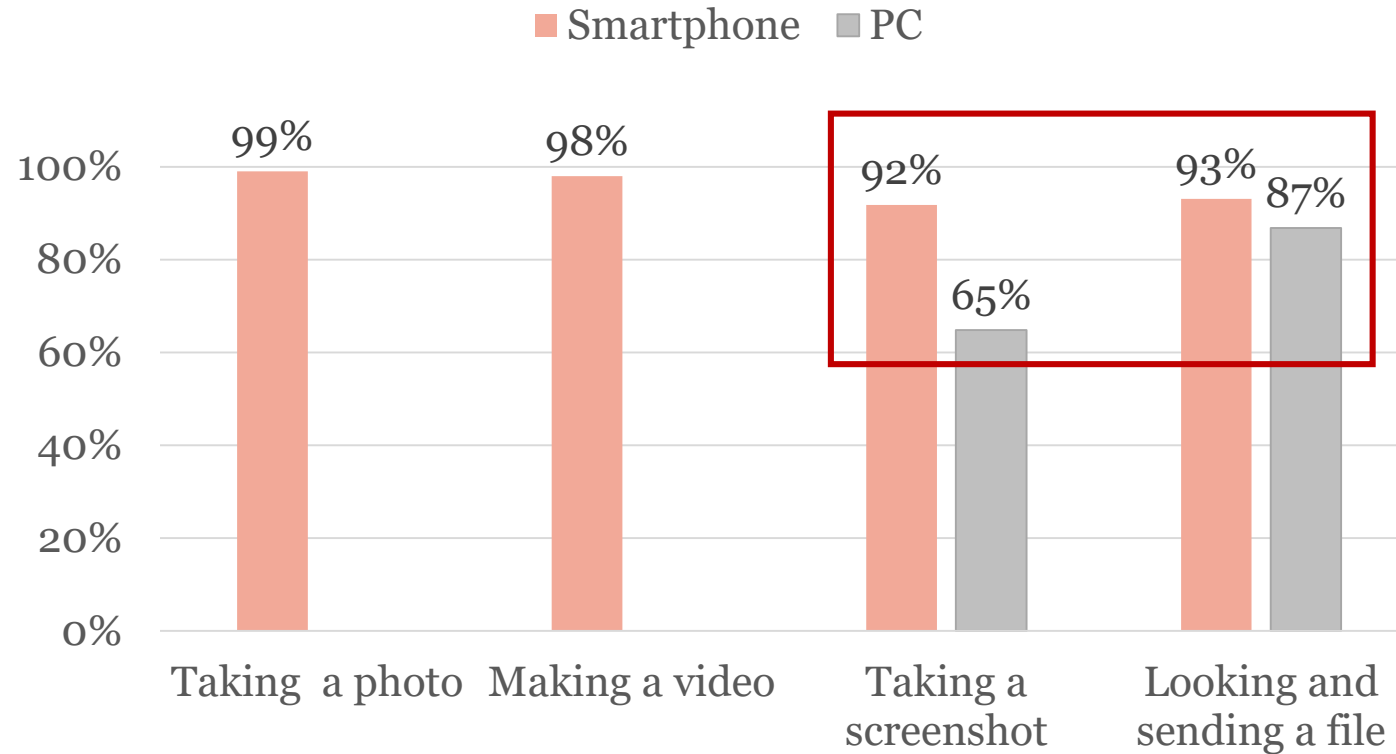
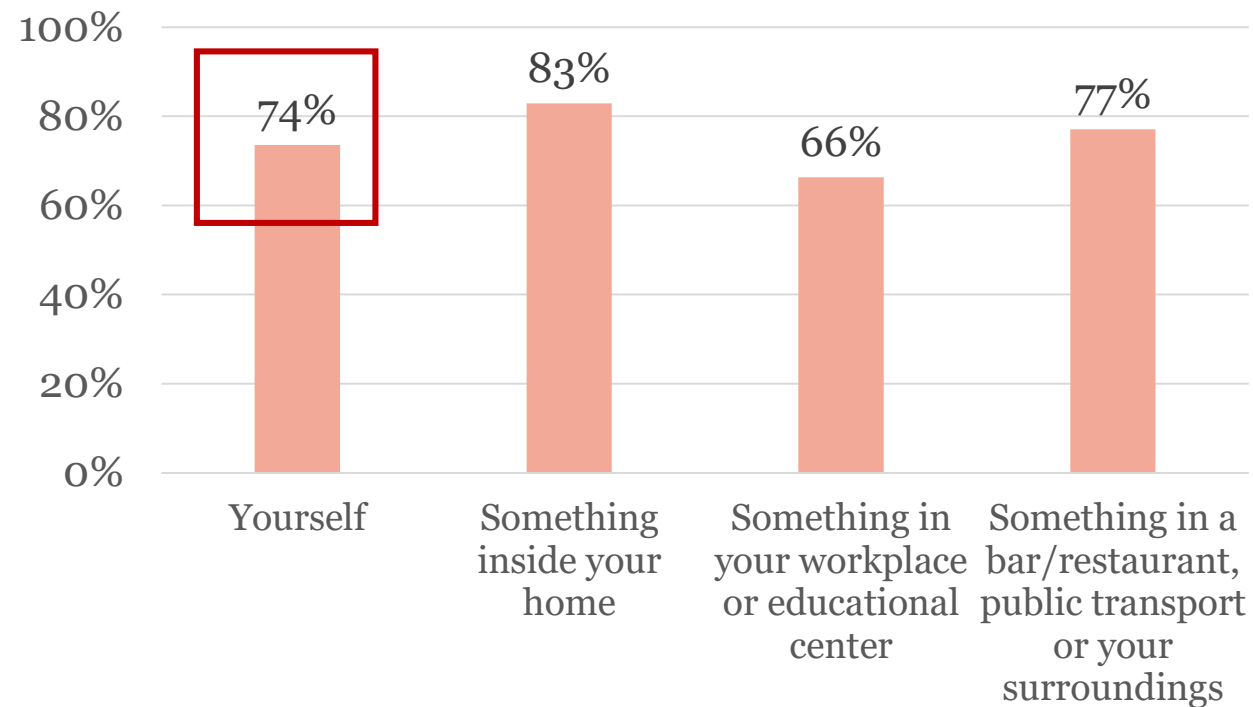# Availability to create visual data during the survey

At this moment, are you in a situation that would allow you to take a picture or make a video with your smartphone of yourself / something in the place you are answering from?

Please do not consider whether you would agree to do so, we simply want to know if the situation you find yourself into would allow you to do so.
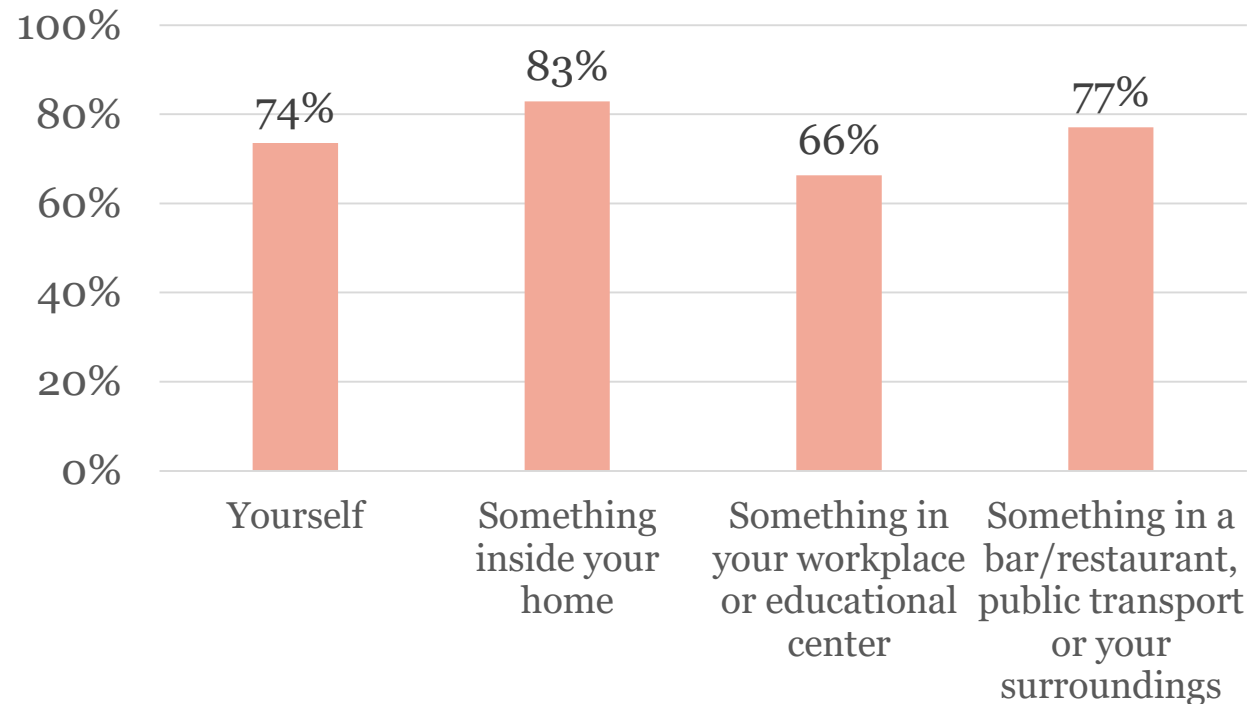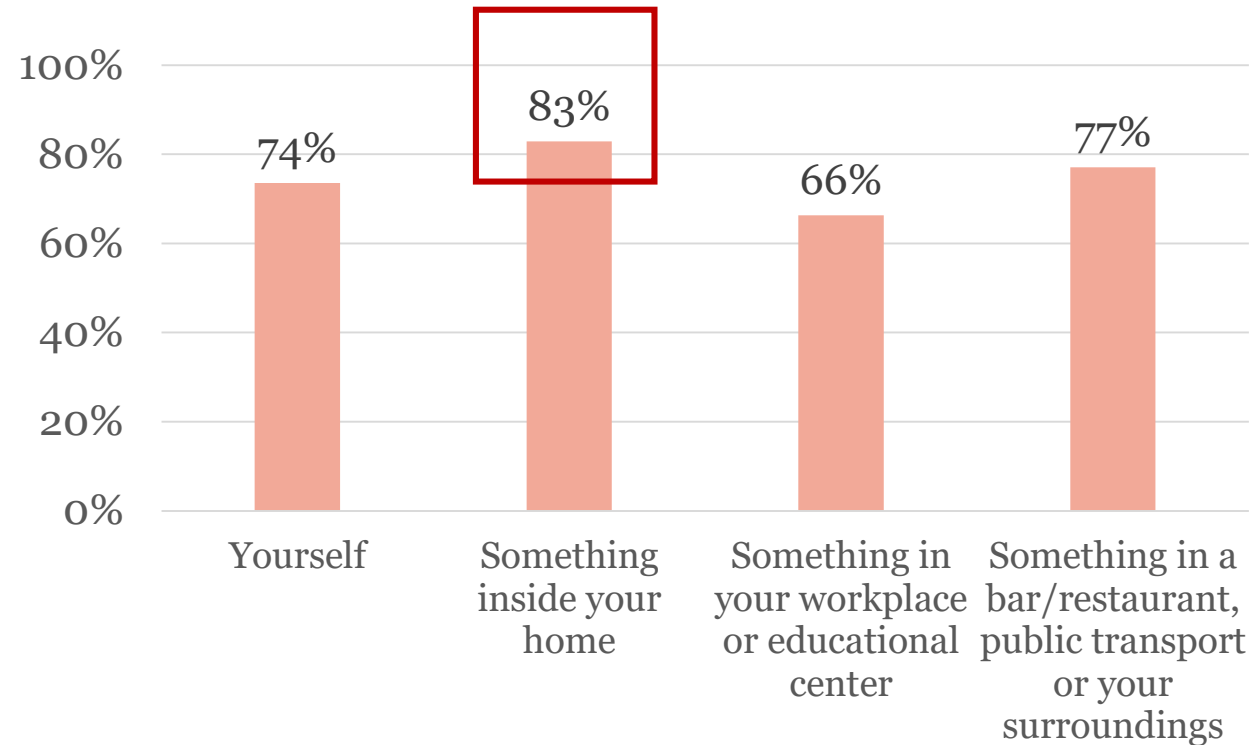
Availability to create visual data during the survey

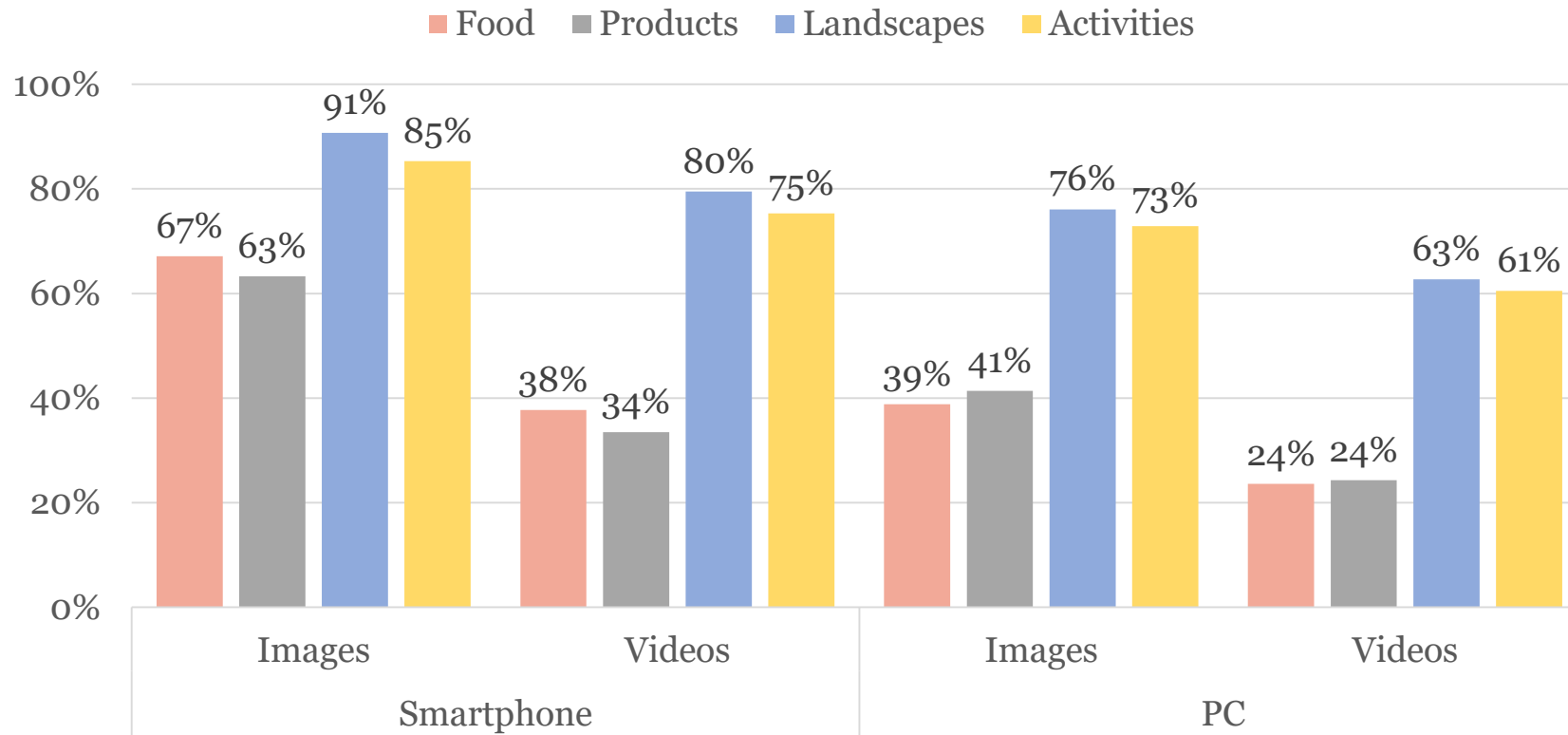- 7 in 10 participants would be able to **take a selfie**.

Availability to create visual data during the survey

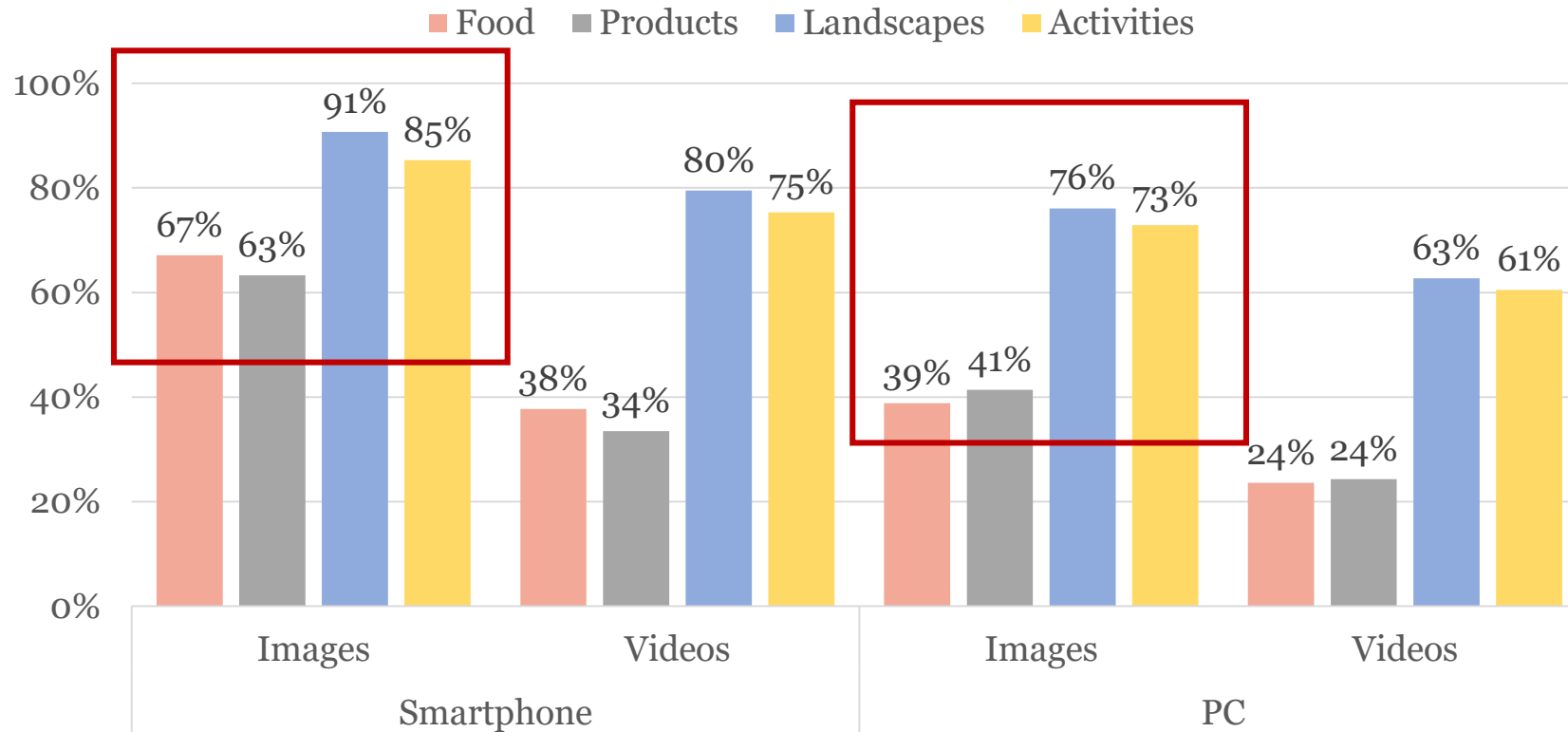- If at home, 83% of smartphone respondents would be able **take a photo or video inside of it**.

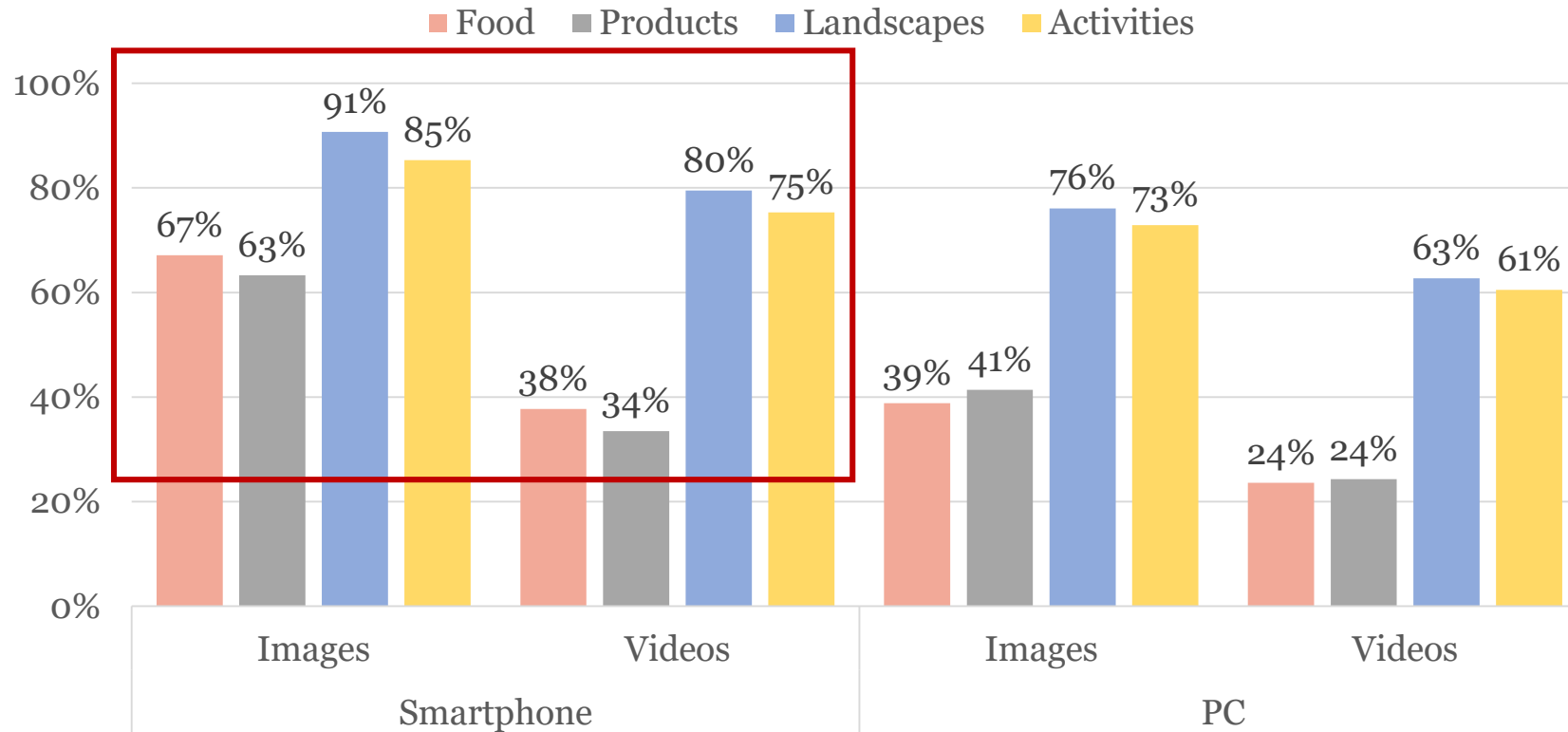# Availability of already stored visual data

Availability of already stored visual data

- Respondents have a **higher availability of images than videos.**
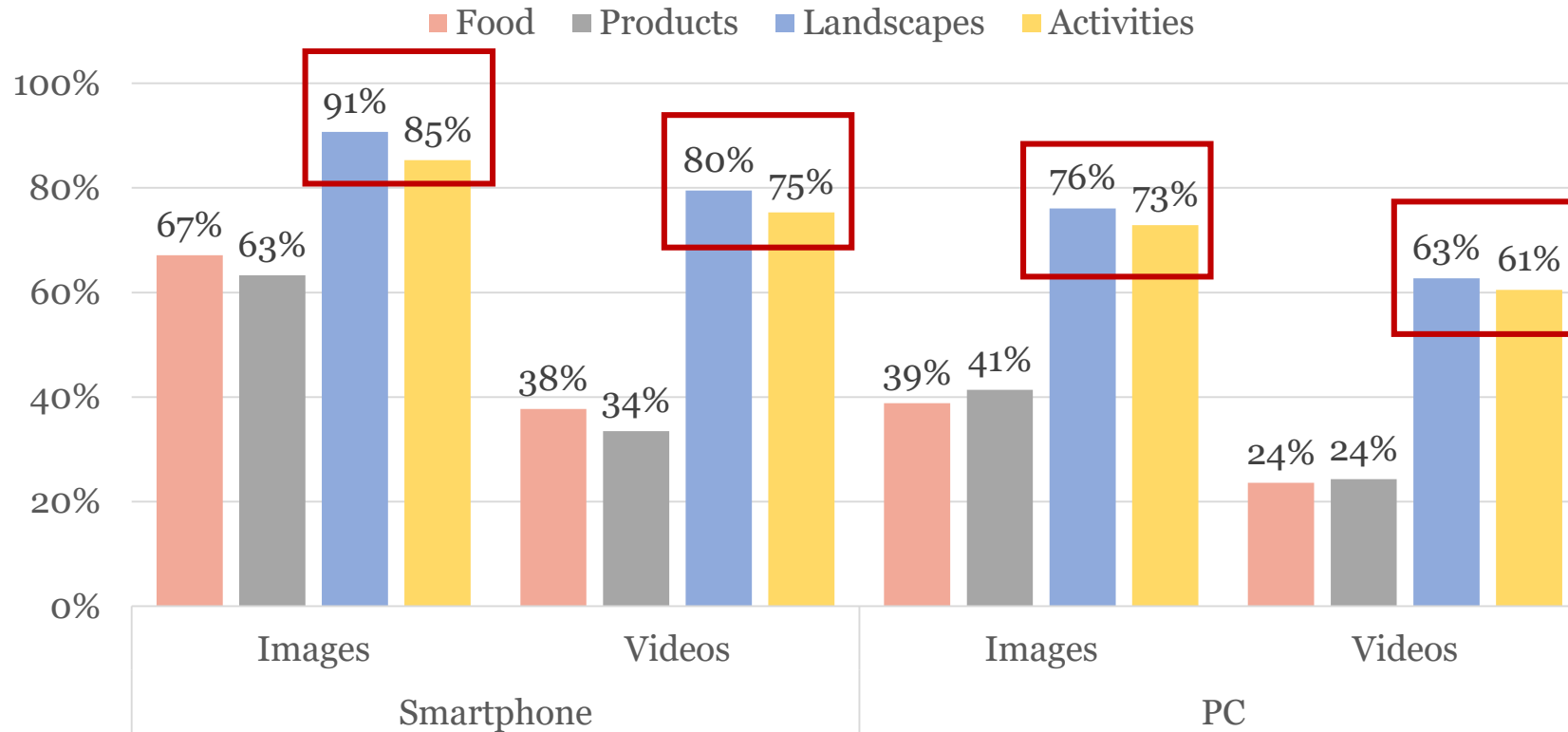
Availability of already stored visual data

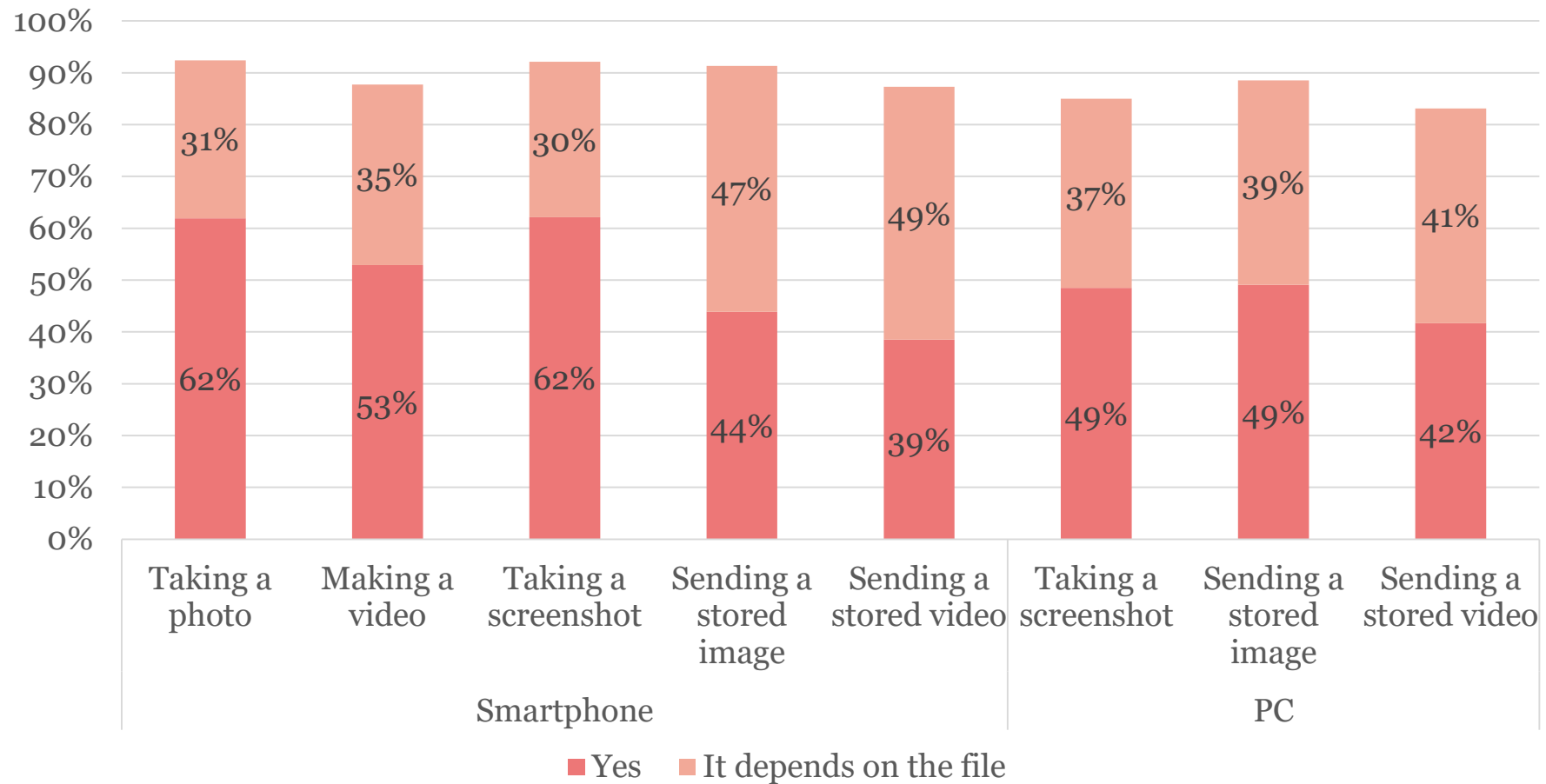- There is a **higher availability of visual data in smartphones** than in PCs.

Availability of already stored visual data

- The categories with the highest availability are **landscapes** and **activities**.
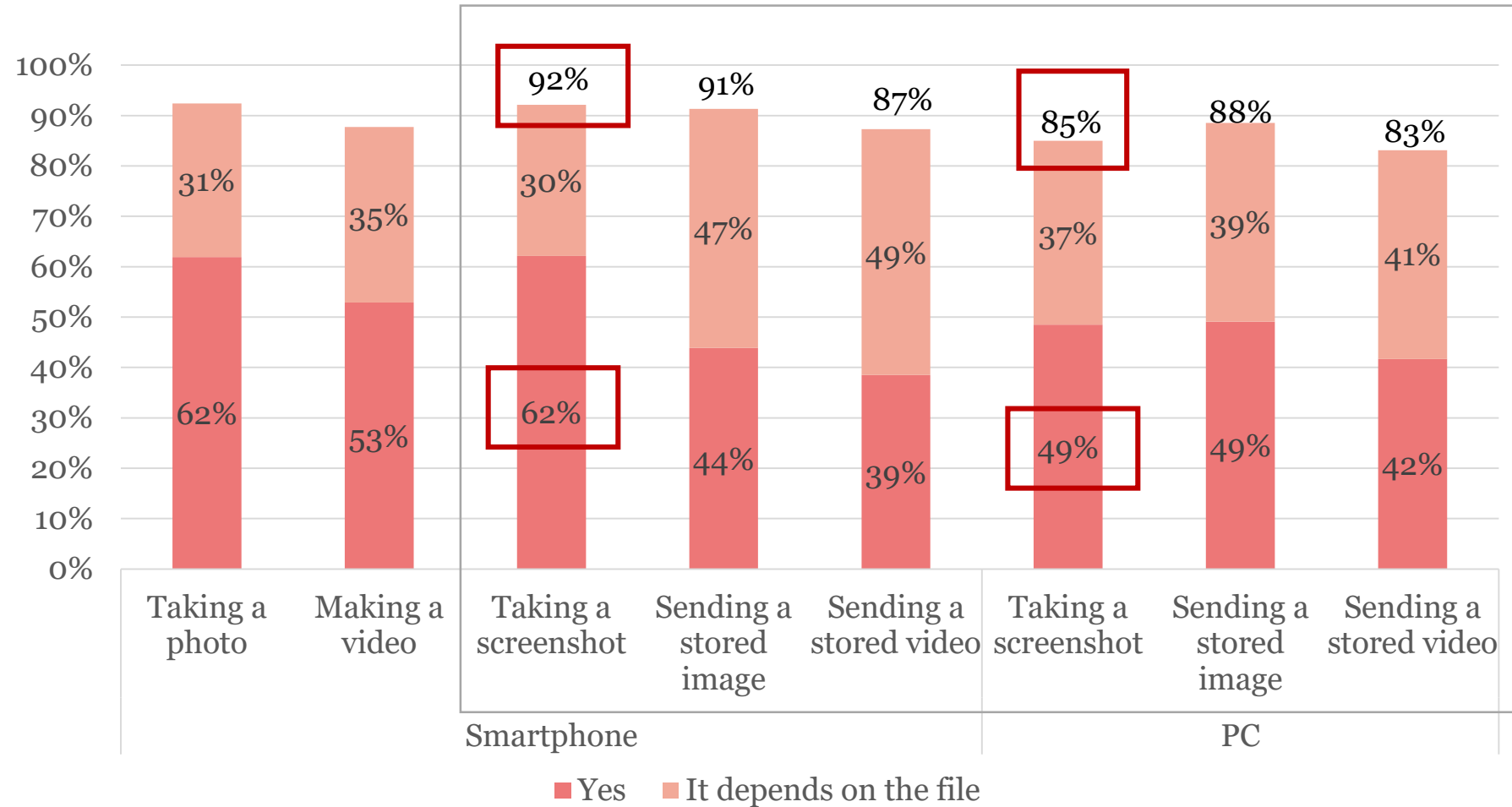
Willingness to share visual data

Willingness to share visual data

- The willingness to take and share a screenshot is **higher in smartphones than in PCs**.

Willingness to share visual data

- The absolute willingness **for already stored visual data is higher in PCs.**
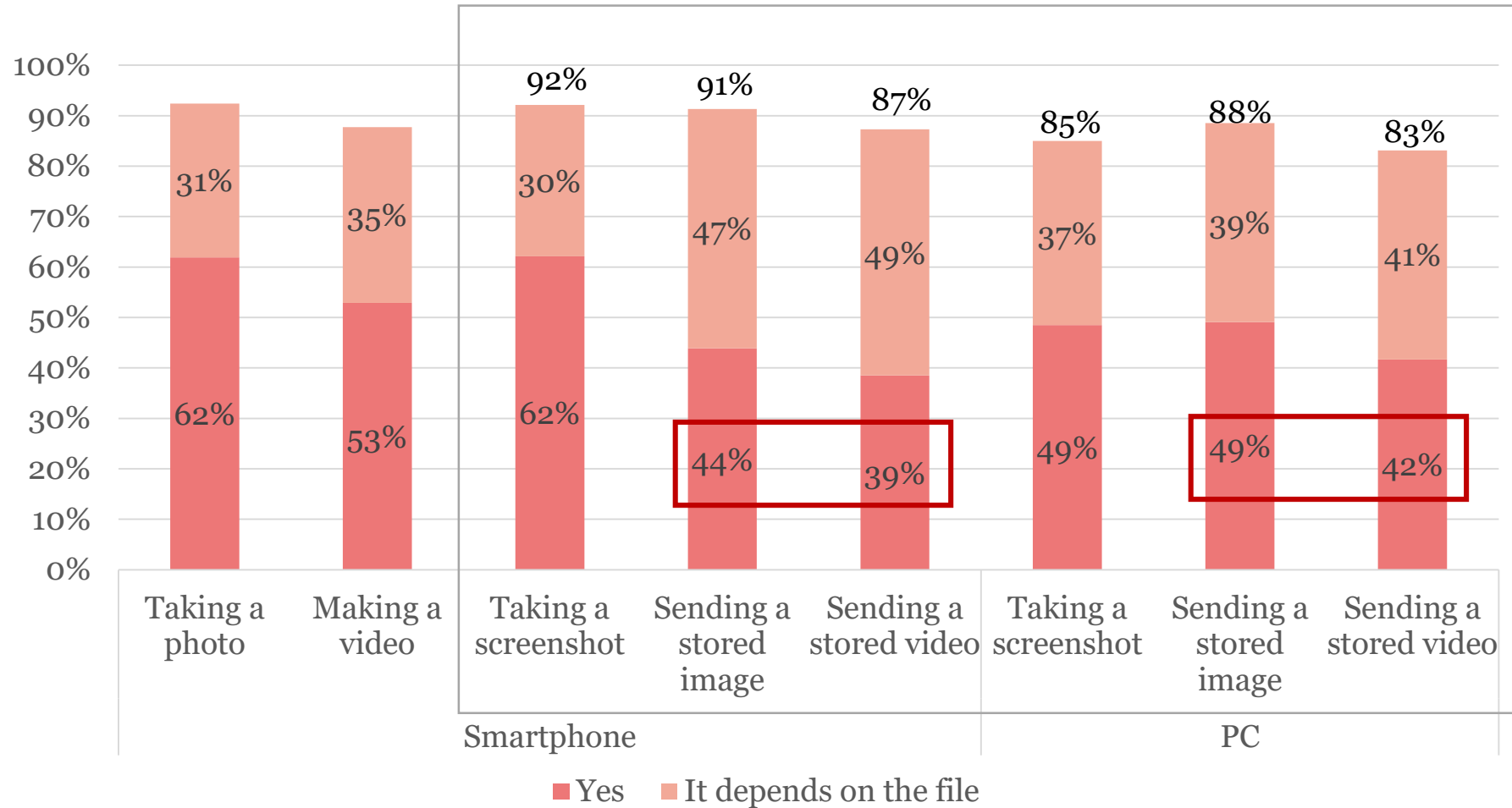
Willingness to share visual data

- Almost 9 in 10 answering the smartphone block would be **willing to share visual data.**
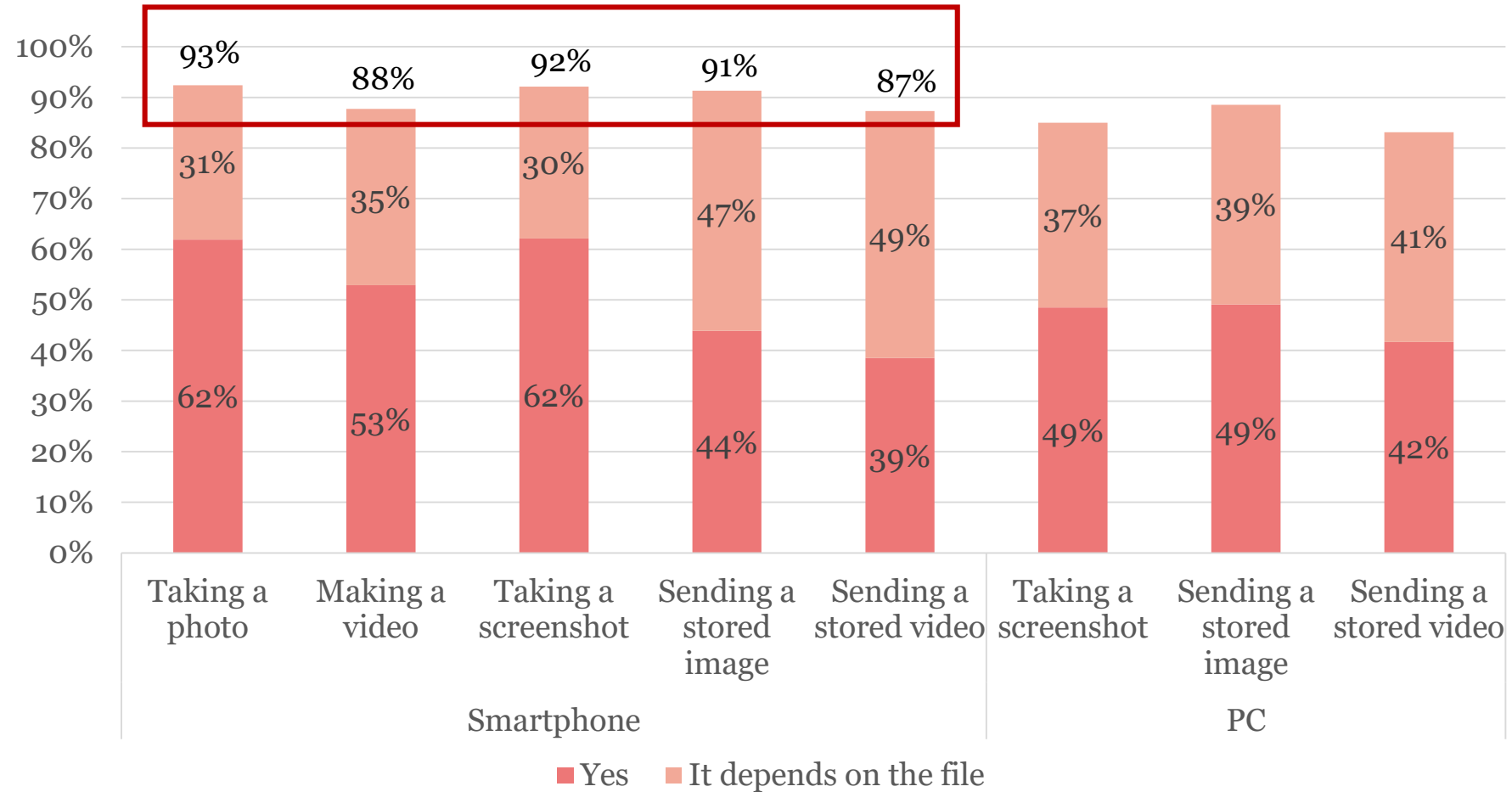
Have the skills + Are willing + Are available to create a photo/video during the survey
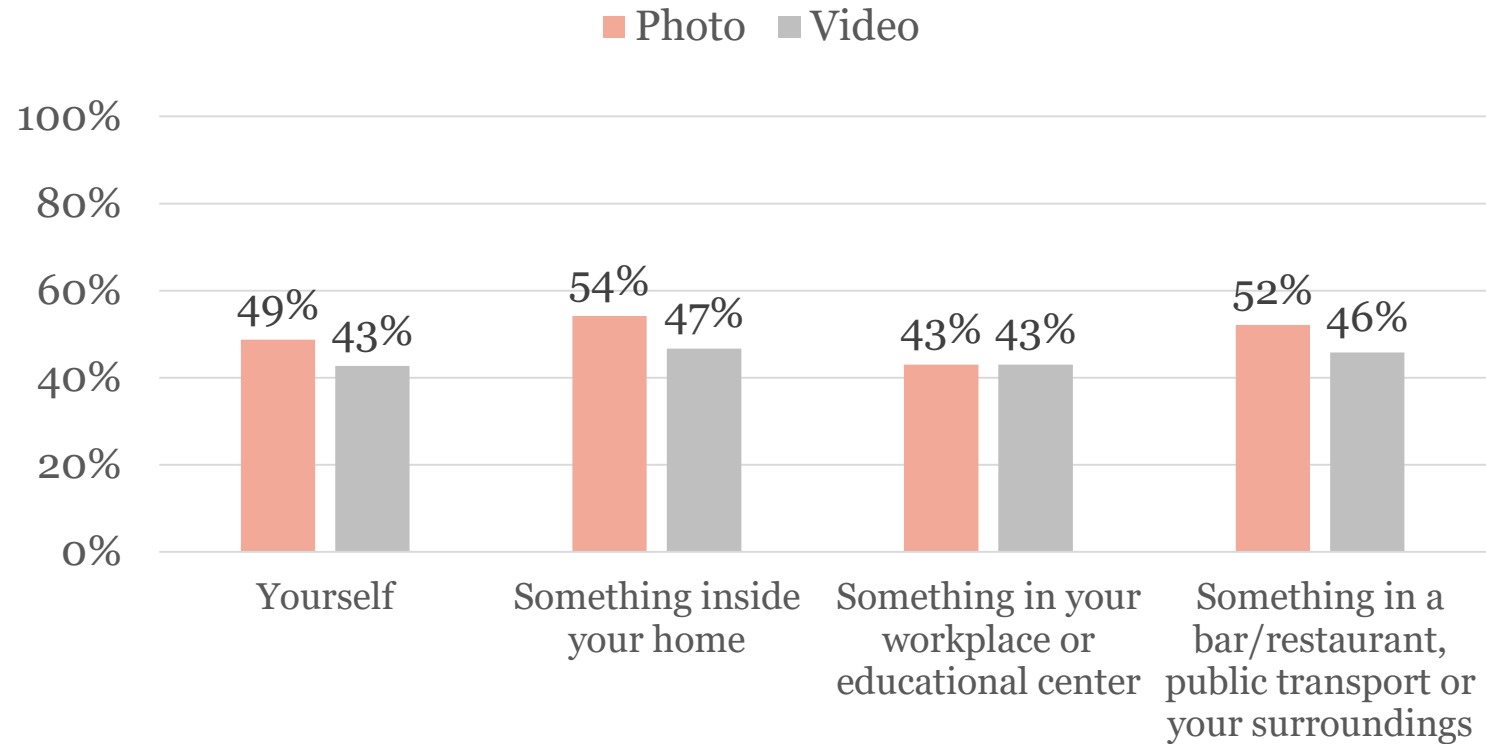
Have the skills + Are willing + Are available to create a photo/video during the survey

- Nearly half of the respondents who would use their smartphone to answer provided a positive answer in the three dimensions at the same time.
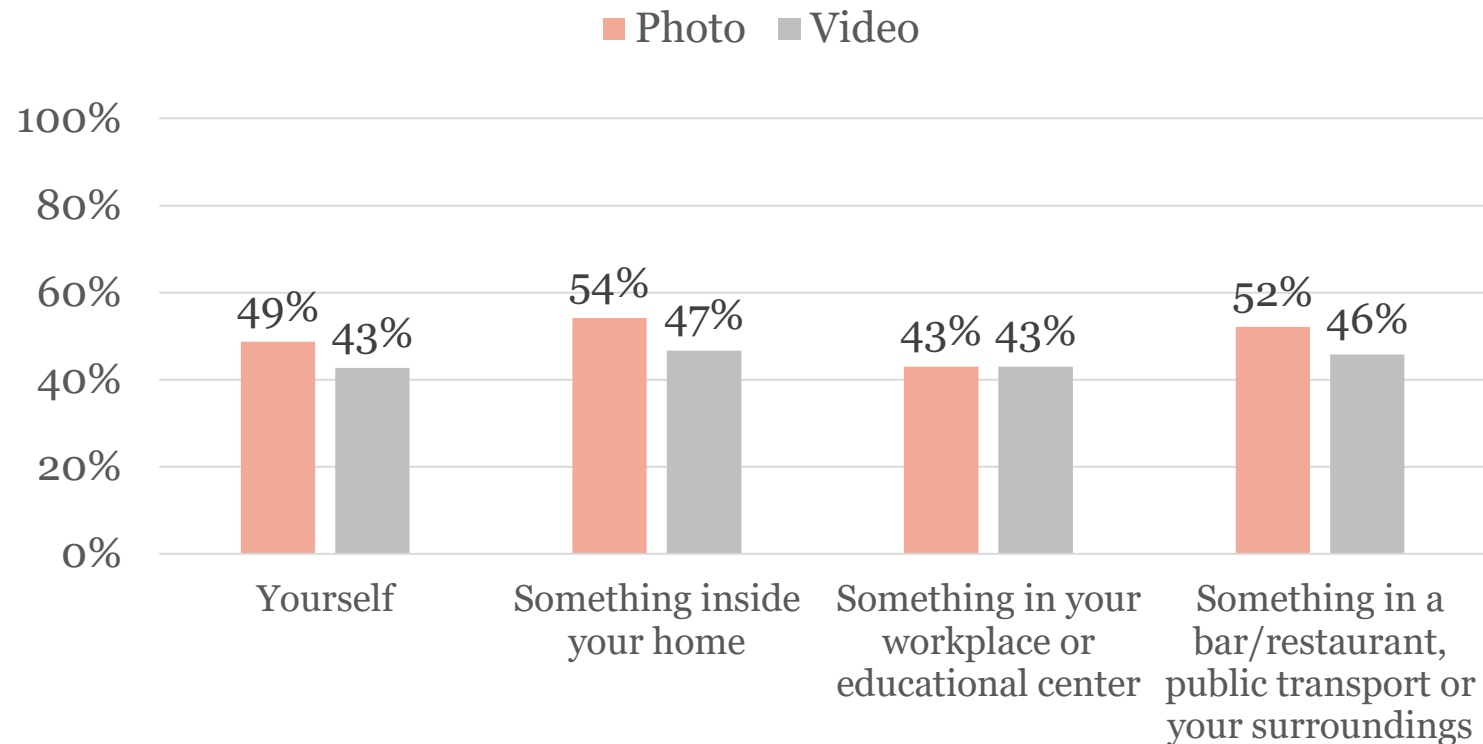
Have the skills + Are willing + Are available to create a photo/video during the survey

- When it comes to selfies and visual data of their house, respondents show a higher percentage for photos.
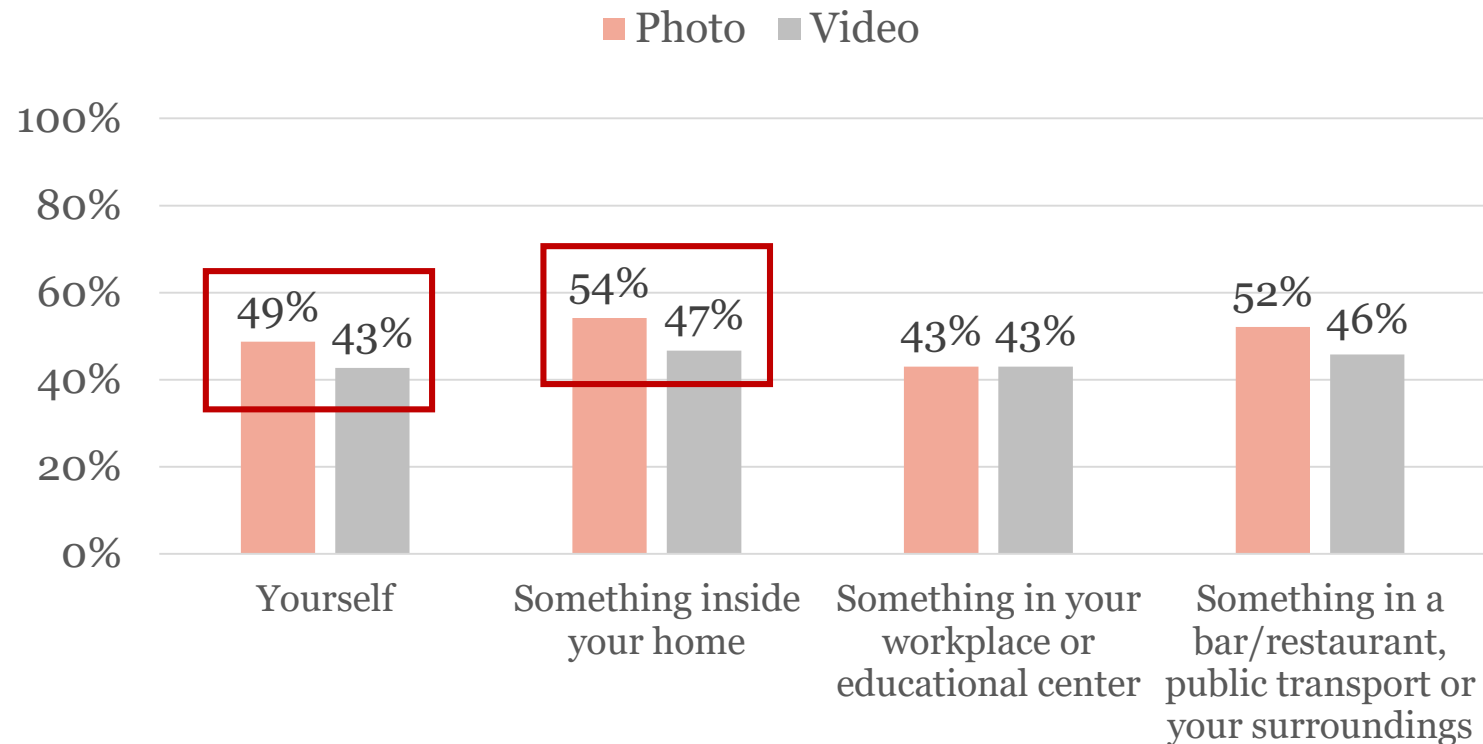
Have the skills + Are willing + Have availability of visual data
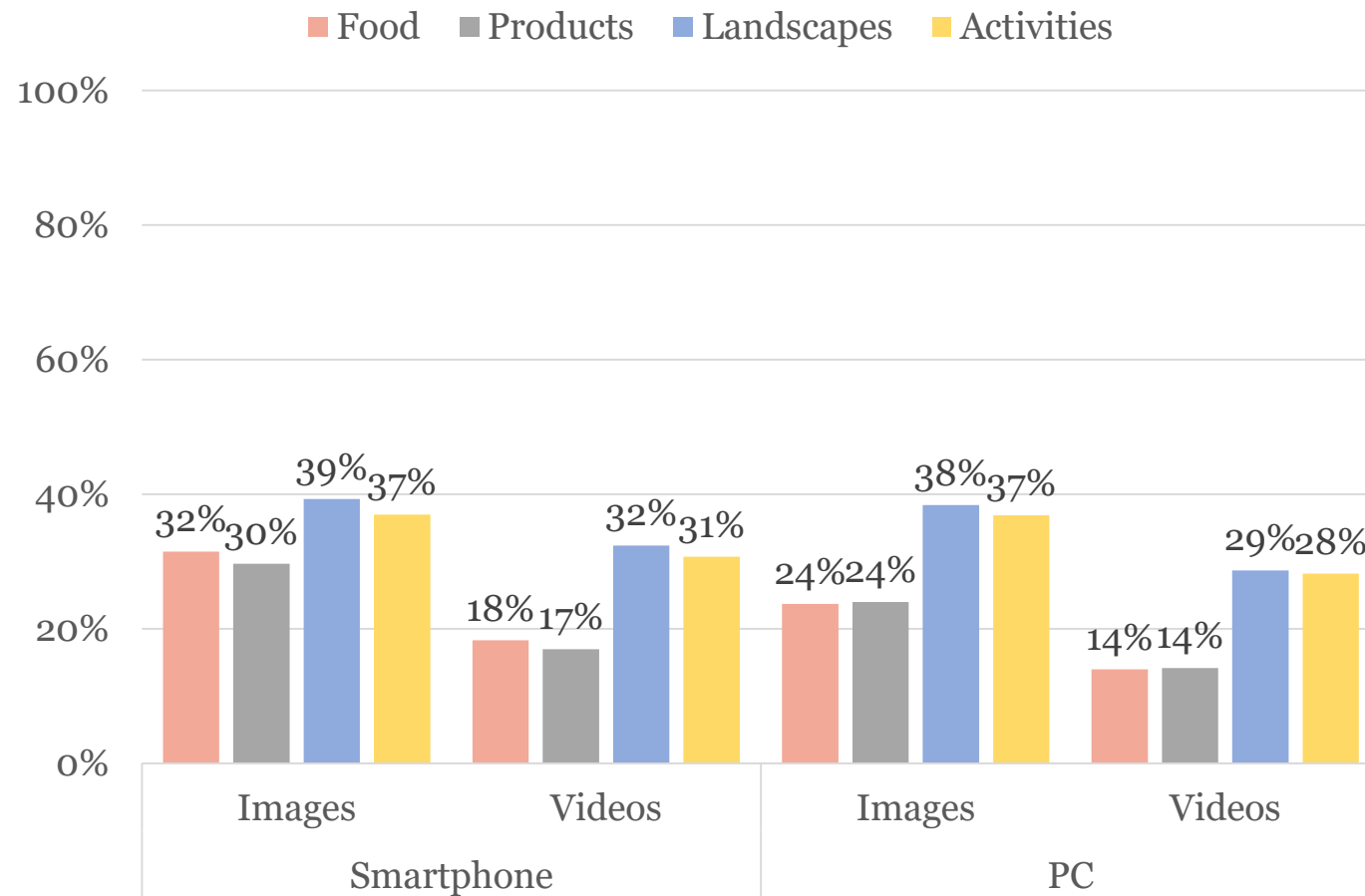
Have the skills + Are willing + Have availability of visual data

- The highest percentages are observed for images.

Legend: ■ Food ■ Products ■ Landscapes ■ Activities

Smartphone — Images: Food 32%, Products 30%, Landscapes 39%, Activities 37%
Smartphone — Videos: Food 18%, Products 17%, Landscapes 32%, Activities 31%
PC — Images: Food 24%, Products 24%, Landscapes 38%, Activities 37%
PC — Videos: Food 14%, Products 14%, Landscapes 29%, Activities 28%
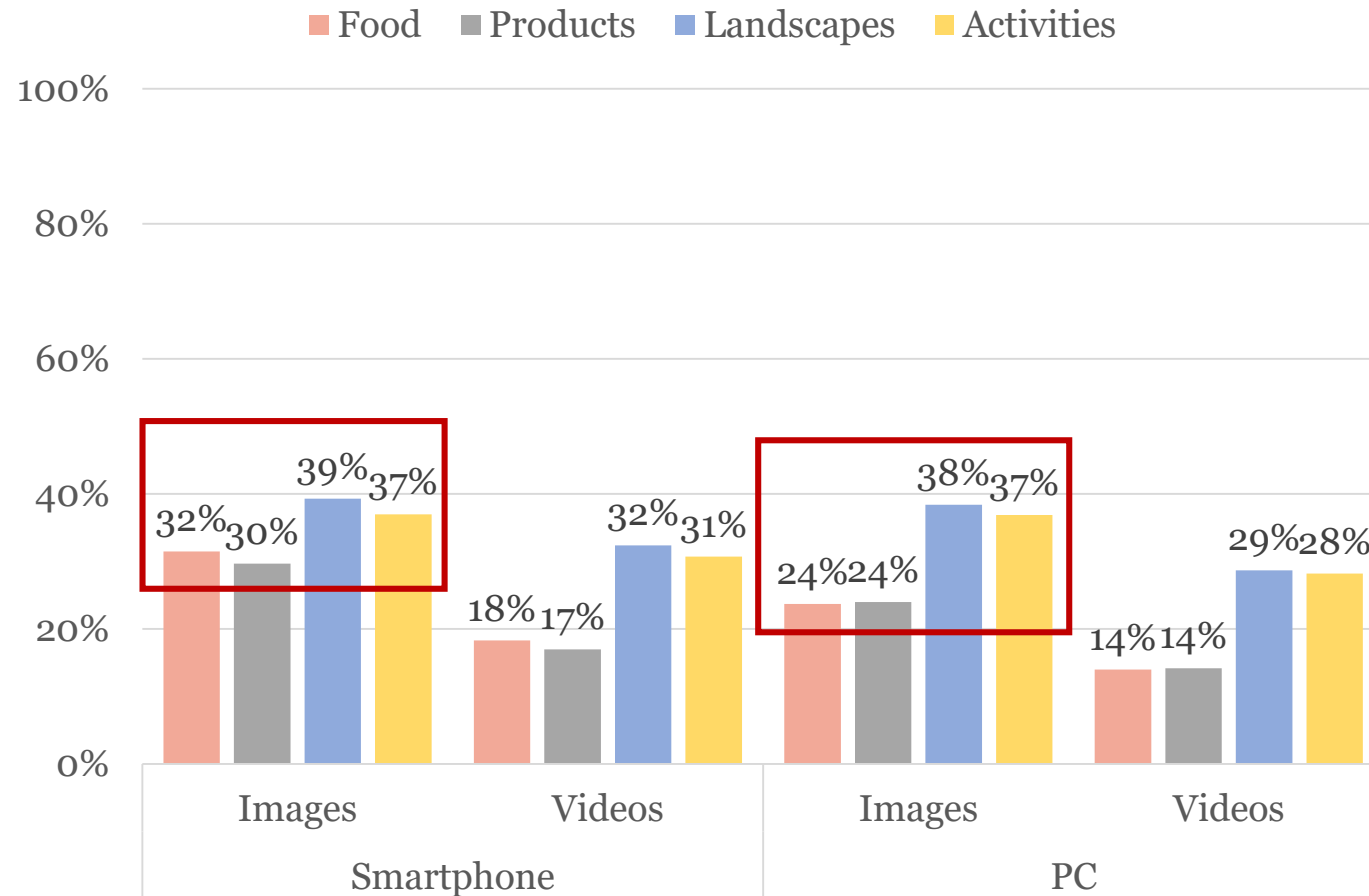
Have the skills + Are willing + Have availability of visual data

- Almost 4 in 10 respondents would positively meet the three dimensions when considering landscapes and activities.
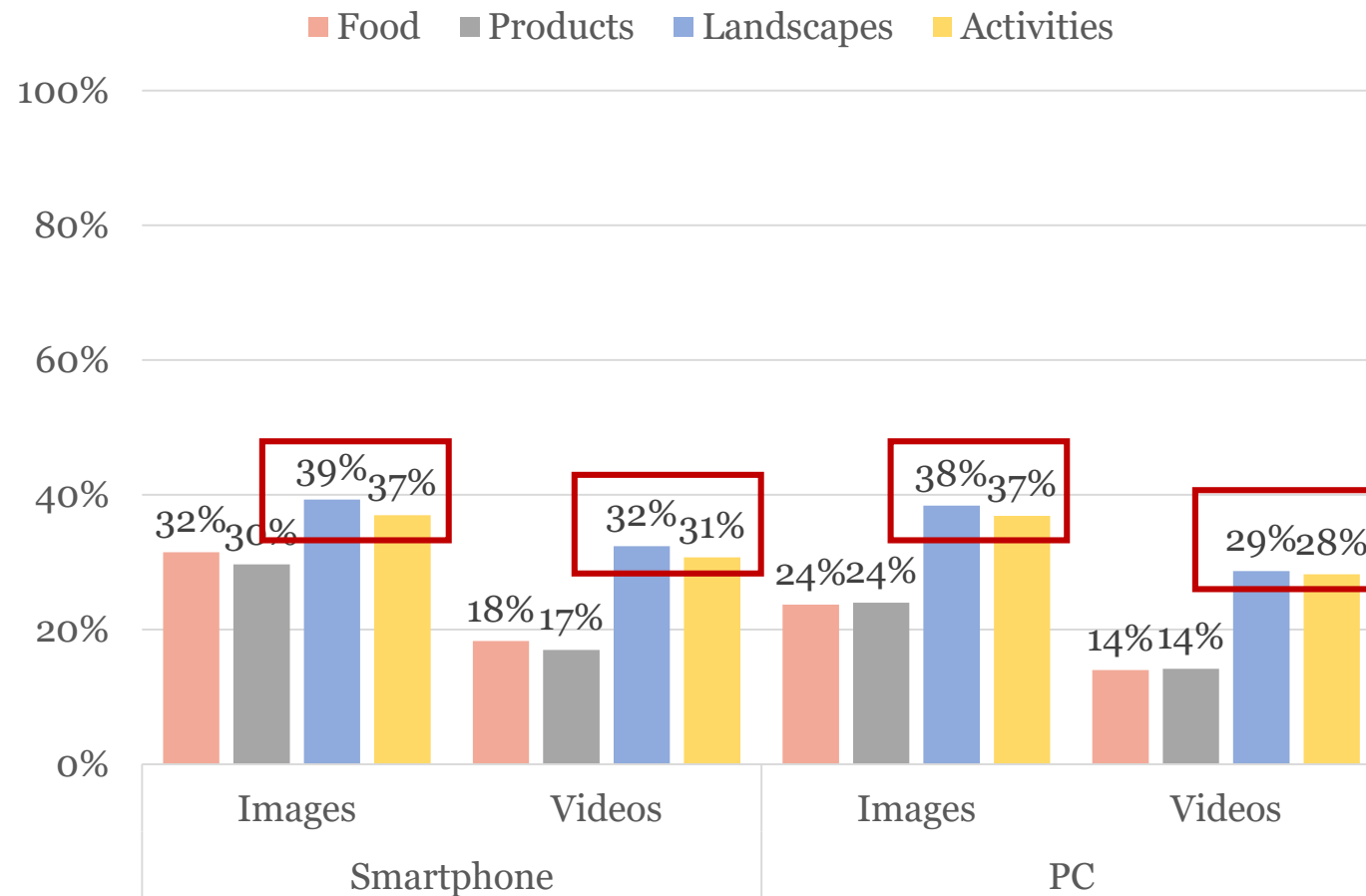
Perception of burden regarding survey questions
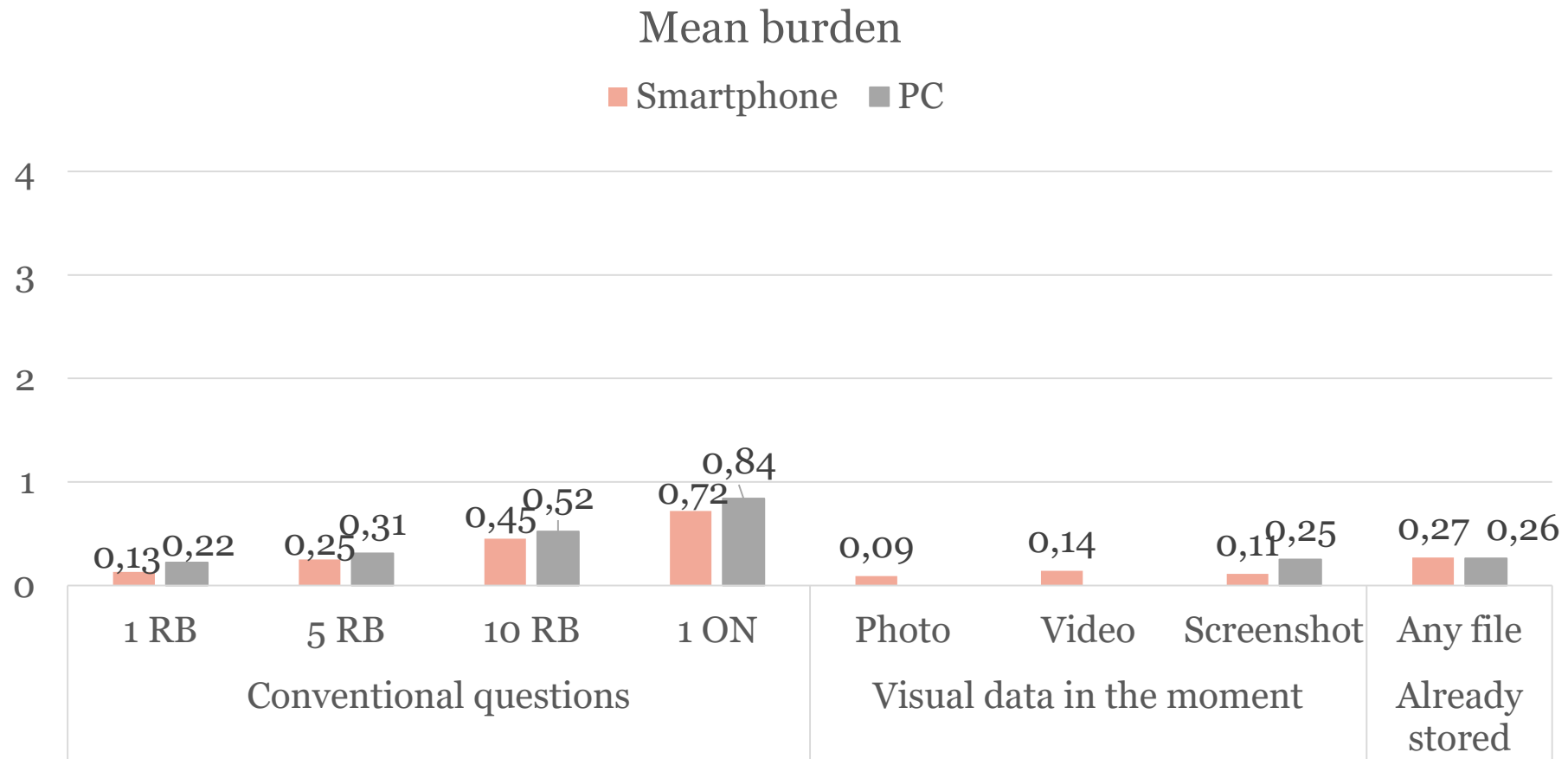
Perception of burden regarding survey questions

- In the 0-4 scale, the burden is low for all types of questions.
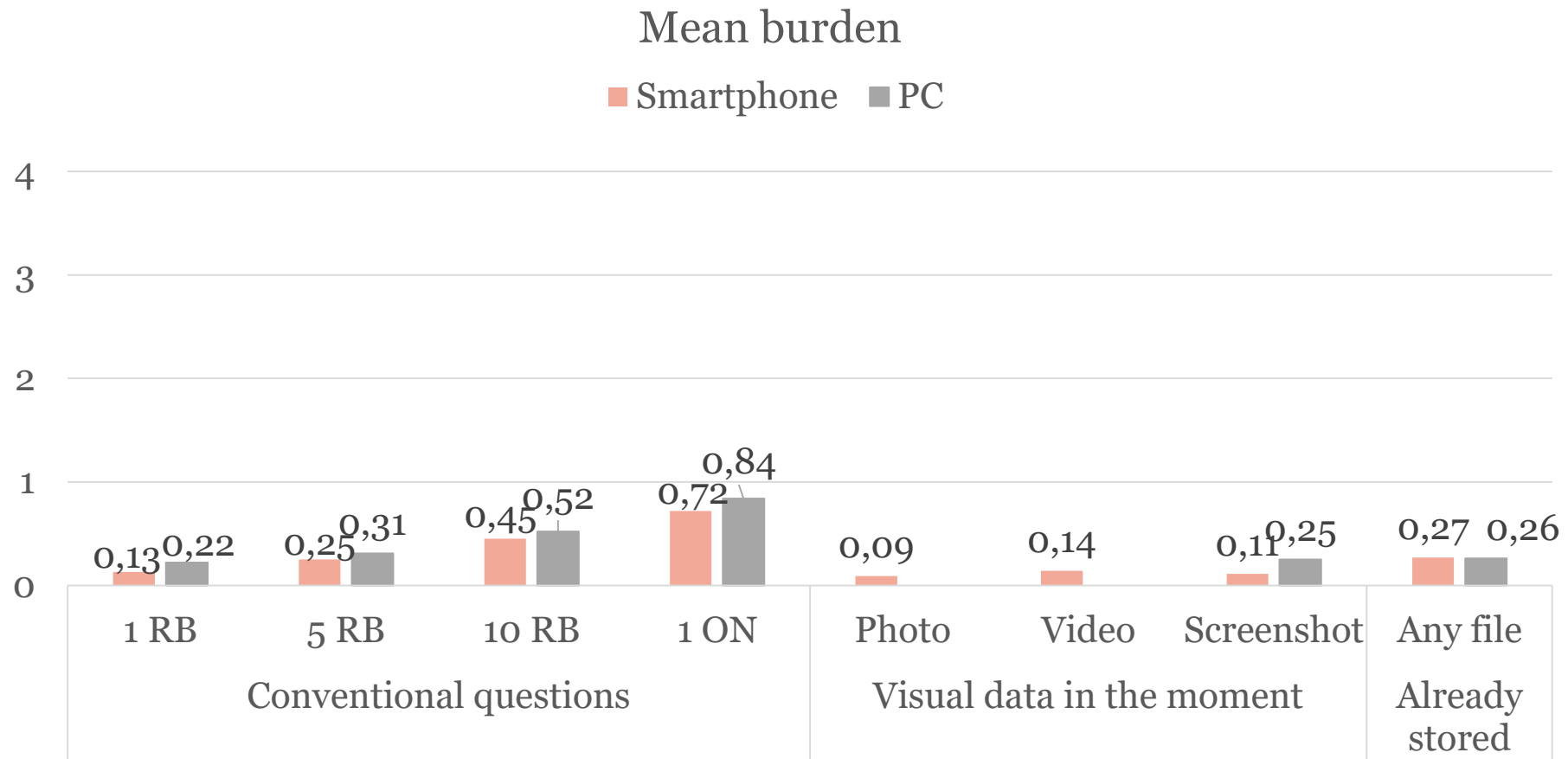
Perception of burden regarding survey questions

- **The burden is higher for open narrative questions** compared to any type of visual data question.
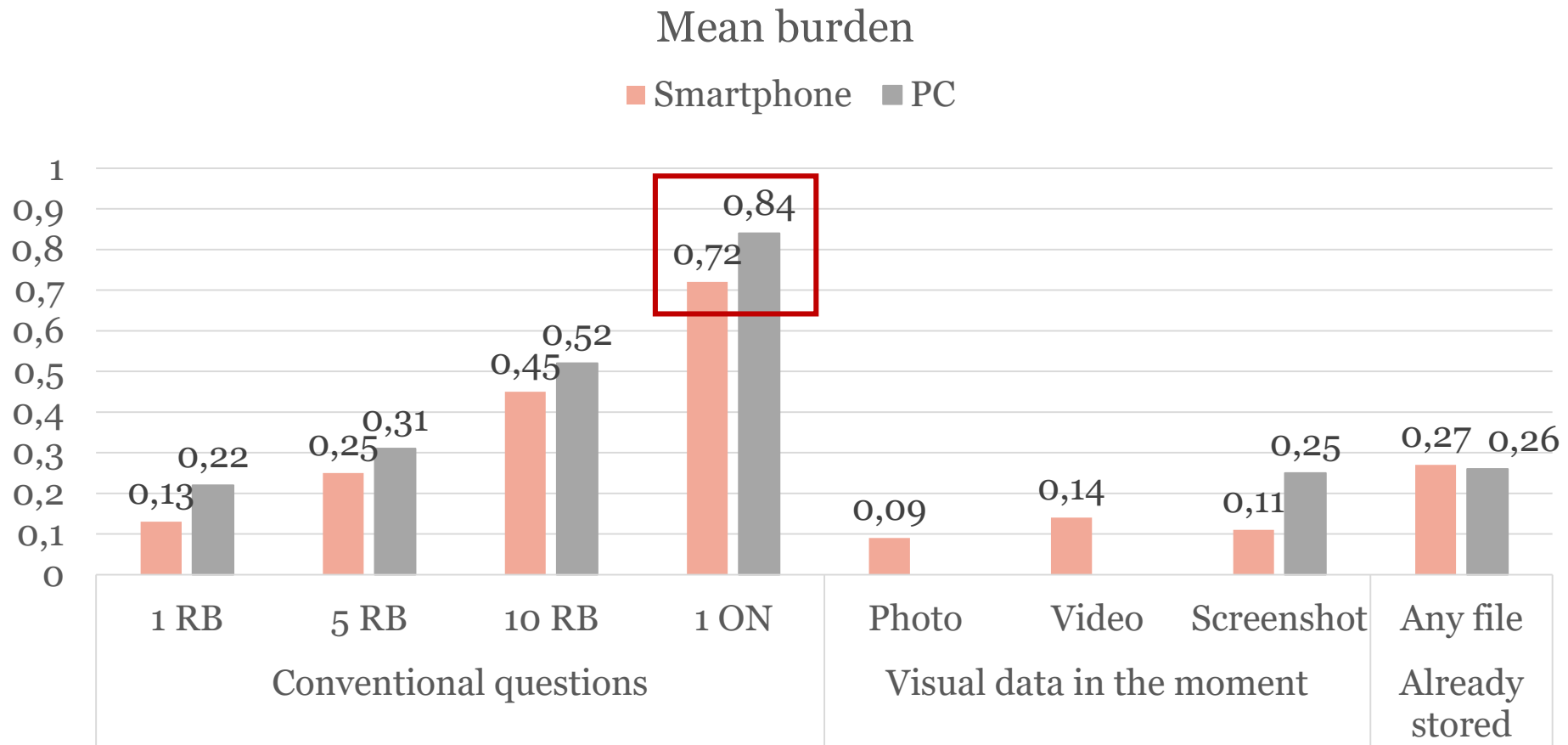
Mean burden

Perception of burden regarding survey questions

- **Visual data produced in the moment with the smartphone have the lowest perception of burden**, and they compare to 1 radio button question's burden.

Mean burden

■ Smartphone ■ PC

	Conventional questions				Visual data in the moment			Already stored
	1 RB	5 RB	10 RB	1 ON	Photo	Video	Screenshot	Any file
Smartphone	0,13	0,25	0,45	0,72	0,09	0,14	0,11	0,27
PC	0,22	0,31	0,52	0,84			0,25	0,26

Perception of burden regarding survey questions

- **Visual data produced in the moment with the smartphone have the lowest perception of burden**, and they compare to 1 radio button question's burden.

Mean burden

■ Smartphone ■ PC
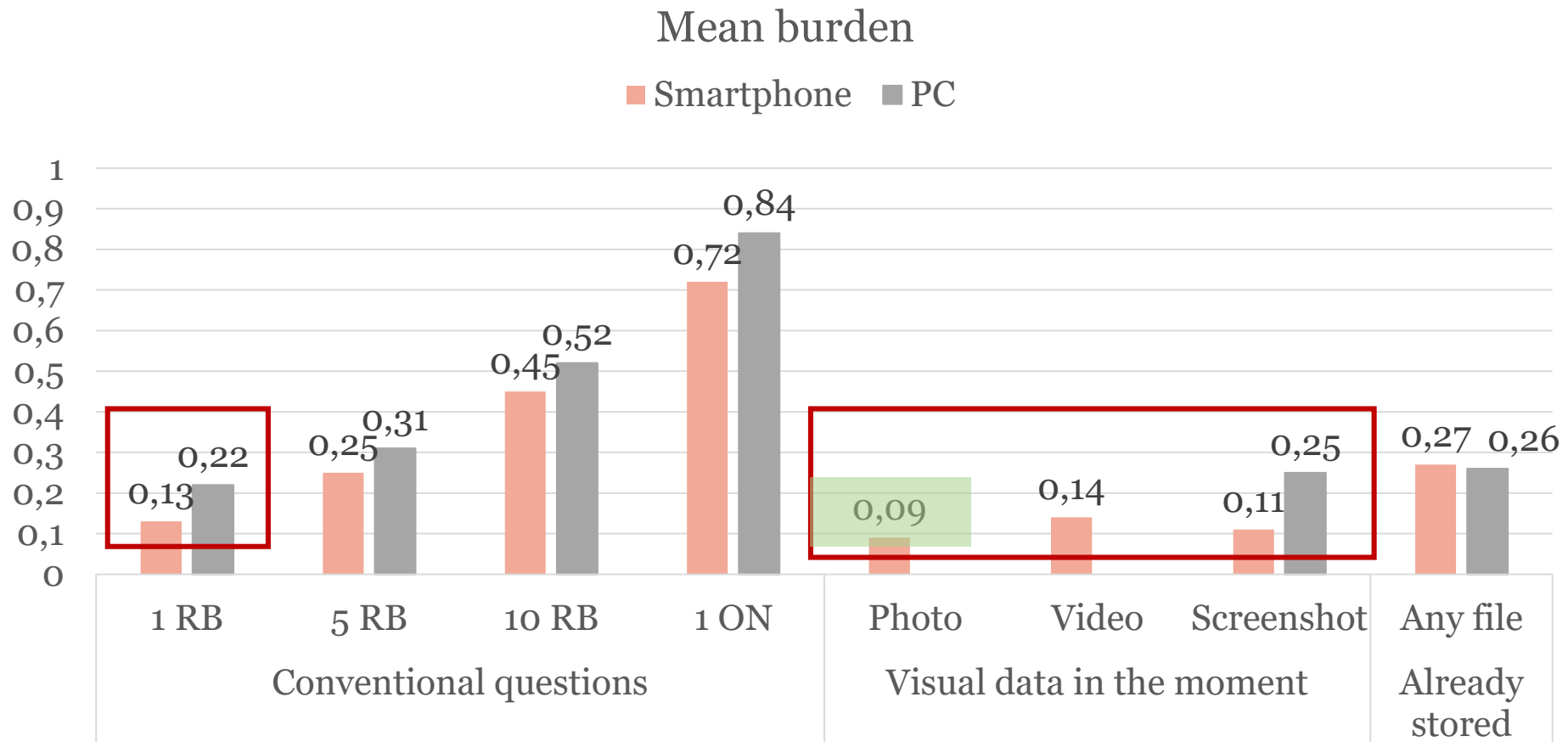
Perception of burden regarding survey questions

- Screenshots in the PC and already saved data would decrease the burden if **they replace 10 radio button questions or open narrative ones.**

Mean burden
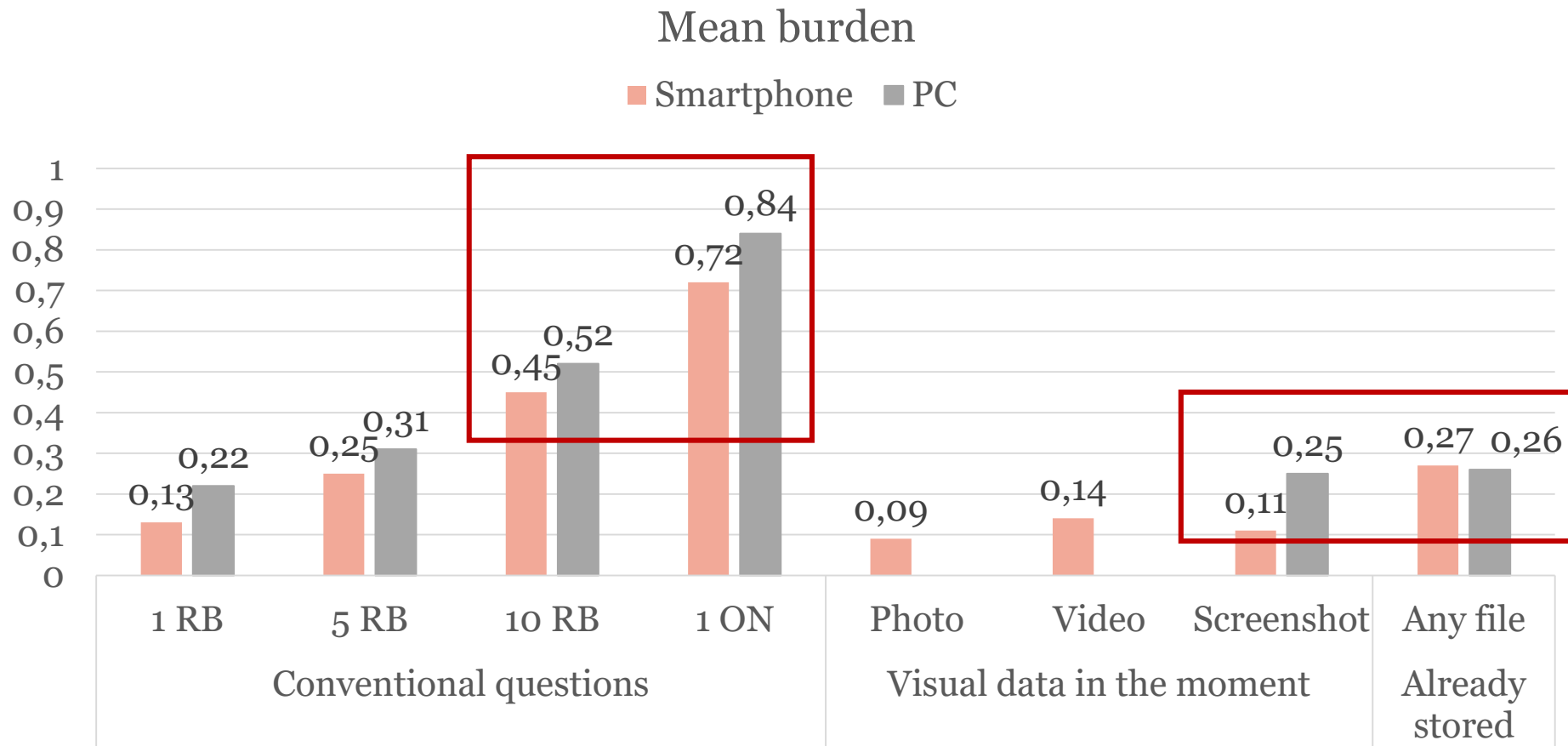
Conclusions

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- **Skills are high** for almost every task, regardless of the device.

- The **availability** to create visual data during the survey is **high**, particularly for things inside the house.

- The **availability** of already stored visual data is higher for **images and smartphones**.

- At least **8 in 10 participants** would eventually be **willing** to share visual data.

- The **three dimensions together** work better for **visual data produced during the survey**. These types of data also result in a lower perception of burden.

Conclusions

- Actual participation goes **beyond the willingness**.

- Practical implications:
  - Given the lack of skills in specific tasks, it would be useful to **explain how to perform them**, e.g., how to send a file from both devices, or taking a screenshot from the PC.
  - A **prior notification** to the respondents could provide better results when asking for already stored visual data, e.g., photos and/or videos of food and products.
  - It is more feasible to request visual data to **smartphone** respondents, especially if it is produced **during** the survey.

- Limitations of our study: opt-in panel in one single country.

- Future research should consider aspects such as **data quality, coding of the visual data** and **assessment of the participation** in these types of surveys.

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Thanks!

Questions?

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https://www.upf.edu/web/webdataopp

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