

“YOU JUST ASSUME IT IS IN THERE, I GUESS”: UNDERSTANDING UK FAMILIES’ APPLICATION AND KNOWLEDGE OF SMART HOME CYBER SECURITY

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Introduction

Smart home devices are ubiquitous, yet it is not clear how well people that use devices in the home understand how best to secure them. In particular, how parents and children interact to discuss and implement security practices has not been previously researched. This work looked to answer two main research questions:

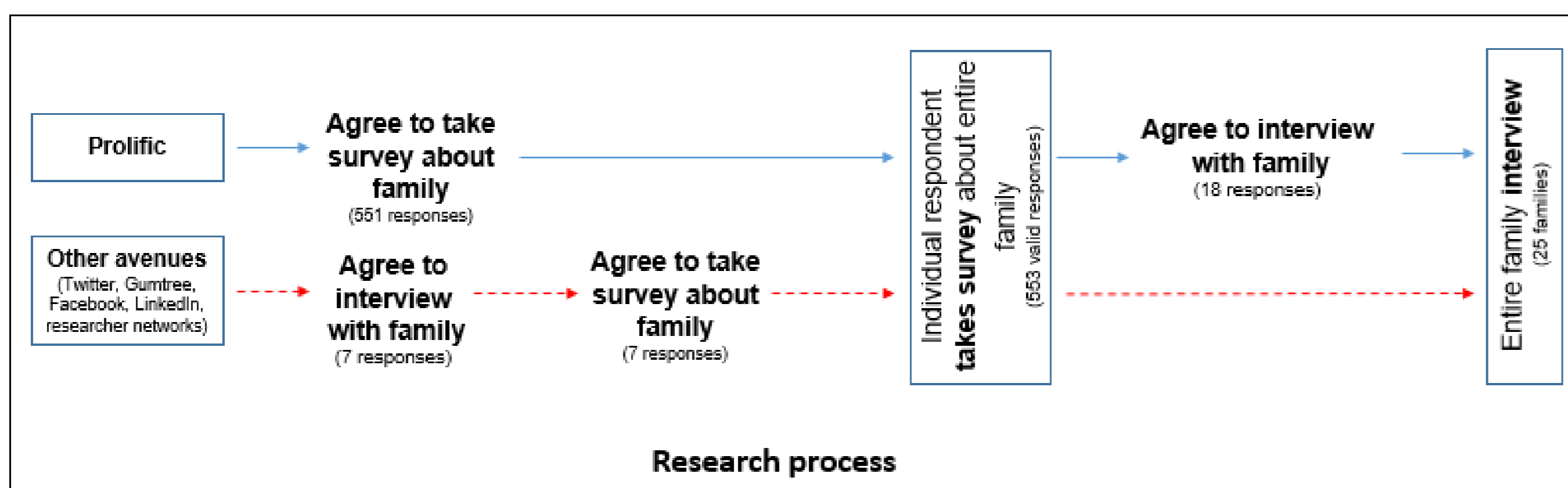
- **How do families manage the cyber security related to their home IoT use?**
- **How and when do families educate themselves about home IoT devices security?**

Method

The research involved two aspects: a broad-based survey, primarily aimed at relevant participants on the Prolific platform, and subsequent interviews with interested participants and their families. In total, 553 participants answered the survey, passing relevant attention checks, and 25 families were interviewed remotely. This research took place between July and September 2020.

Survey questions were designed to capture a broad range of information on the use of IoT devices in the home, how they were managed, and the attention paid to cyber security in the home.

Interview questions allowed for participants to flesh out their survey responses, as well as giving the vital opportunity for every family member (both adults and children) to give their viewpoints about device use and understanding of cyber security.



Results

Survey

- More expensive/integral devices were reported as being less new than other devices
- Participants **could not provide significant details about cyber security** requirements of devices, and **would turn to the Internet for advice** should they need it
- Participants’ main concern was the **cost of replacement**, not data security
- Participants **did not help children use devices**, nor did they express concern about children using them.

Interviews

- Both parents and children talked about **threats and risks in the language of online safety** – largely not relevant for managing device cyber security.
- **Financial loss was largely not a concern**, with the assumption that UK financial institutions would be robust in recompensing any fraudulent activity.
- Evidence of **cyber security knowledge was limited** amongst both adults and children. **Application was poorer still.**
- By far, the **biggest concerns** raised by interviewees were
 - Cost of devices and replacement
 - Interoperability between devices
 - Necessity of careful use of devices



Recommendations

Families need help to understand where to do better
Manufacturers need to do more to provide nuanced cyber security information at the point of setup.

Appropriate levels of base security measures for home IoT devices, in line with consumer expectations
Home IoT devices that are expected to be used by groups of people of all ages and abilities should come with more stringent cyber security measures as default.

Up to date education for both children and adults
School curricula must be updated; but as the balance of power in a home typically favours the parent, parents need supporting to improve their knowledge too.

Better recognition that families try to look after their devices
As countries introduce right to repair legislation, so the need for devices with longer-lasting security features is a necessity.