APPENDIX B2:
FINDINGS FROM INTERVIEWS WITH FRS AND RESIDENTS, AND SURVEYS WITH RESIDENTS

Authors: A Templeton[1], C Nash[1]

Reviewers: M Spearpoint[2], S Gwynne[3], H Xie[3]

[1]University of Edinburgh, [2]OFR, [3]GHD / Movement Strategies

Contents

Executive summary

We used individual interviews with fire and rescue service (FRS) personnel, as well as surveys and focus groups with residents of high- and medium-rise residential buildings to identify:

- FRS views on guidance for residents about what to do in the event of a fire,
- FRS perceptions of public behaviour in high-rise residential building evacuations,
- Resident understanding of evacuation strategies and fire safety measures in the buildings they reside in,
- Resident confidence in the fire safety and evacuation guidance provided to them by building managers and the FRS, and
- The role of group processes in perceptions and decision-making in the event of a fire.

Key findings:

- FRS stressed the importance of making guidance clear, concise and accessible for residents and assessing resident understanding of the guidance,
- Both FRS and residents identified that group relations impacted residents' motivation to adhere to guidance. Residents were motivated to adhere when they saw FRS as working for and with residents to keep them safe. However, they were less motivated to adhere to guidance if they did not believe a safety measure was needed and it conflicted with their immediate needs (e.g., getting fire alarms when they were concerned about finances),
- Group relations impacted on whom residents looked to for information when interpreting fire incidents and deciding how to respond to them. For example, residents who believed there was a good community in the building would trust guidance from their friends and neighbours, and believed they could expect support from them to evacuate,
- Some FRS personnel suggested that residents could be a valuable source of information during fire incidents if there was a cohesive community in the building, such as by sharing the locations of vulnerable residents,
- The interviews showed that residents' trust in the stay put guidance was very low, but the survey results showed medium levels of trust in the stay put guidance. In the interviews, the low trust in guidance to stay put was associated with the lack of trust in high-rise buildings following fires such as Grenfell Tower,
- Trust in the guidance (both stay put and evacuate) and its creators were important factors in understanding willingness to follow the guidance, and

- The likelihood of residents following others in a fire incident was related to the extent to which they felt part of a group and the expectation that other residents would provide them with help.

Implications for evacuation modelling:
The data informed the evacuation modelling developed as part of this research project in the following ways:

- The data from the interviews with FRS and residents informed the selected model scenarios for a fire incident in a high-rise building,
- We mapped the key factors identified in the interviews onto possible inputs for the model. This involved categorising the potential impact of the factor (e.g., seeking information from others) on delay prior to evacuation, speed during evacuation, route choice, pedestrian flow in the building, and any additional factors to consider (e.g., social influence), and
- The survey data was transformed into possible sequences of events where we could infer distributions of agents who would take certain progressions of actions (e.g., percentage of people who would evacuate immediately and percentage of people who would stay put).

B2-1. Research background

B2-1.1 Overview

The principal aim of **Objective B2** is to identify FRS personnel and resident perceptions surrounding guidance related to the stay put and evacuation guidance related to high-rise residential buildings. Previous work on resident characteristics / behaviour has been presented in **Objective B1** (see Appendix B1). The findings from this objective then informed the evacuation simulation research component of this project in which the building design aspects are discussed in **Objective A2** (see Appendix A2). Figure B2-1 shows the integration between the various objectives and how these combine into the development of the simulation studies.

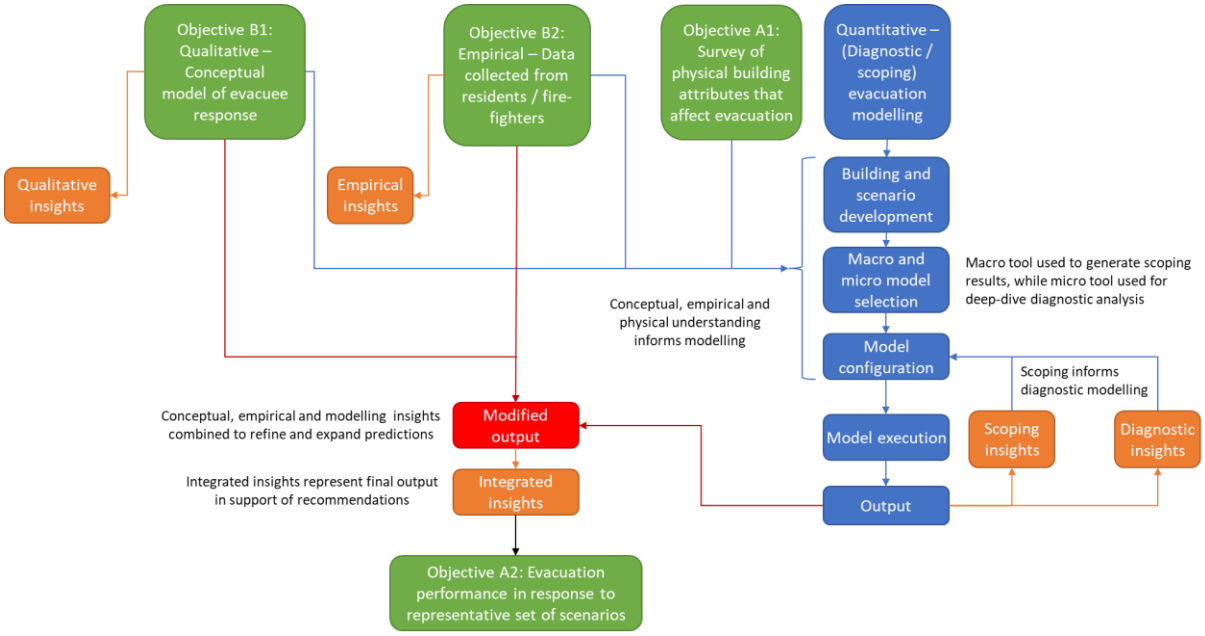


Figure B2-1 Flow chart showing the integration of the research objectives

The project includes a technical steering group comprised of representatives from government, FRS and commercial stakeholders that have provided feedback on the research to date and have also suggested relevant resources such as contact information for survey participants.

B2-1.2 Rationale and approach

Evidence from social psychological research on responses to emergencies points to how perceptions of other evacuees in the emergency, the guidance, and the source

of the guidance, can influence human behaviour[1]. Three main factors are particularly relevant for decision-making in evacuations:

1) Group bonds and social influence with other evacuees, such as seeking others in dangerous areas, delaying evacuation to help others, and people taking the same route,
2) The perceived clarity and legitimacy of the evacuation guidance, such that evacuees know what actions they should take, why they should take them, and what actions the emergency services are taking to keep them safe, and
3) The perception of the information source as being trustworthy and acting in the best interests of the group.

Response is therefore not entirely governed by the objective safety of a response, but on perceived safety that might be informed by expert and non-expert sources. To understand willingness to adopt different safety procedures in human fire evacuation (especially that counter those previously held) and build confidence in those safety procedures, we examined resident perceptions of the procedures (knowledge of guidance, knowledge of why specific guidance is best practice, confidence in ability to follow guidance), and also the source of information (whether they are seen as a legitimate source and acting in the best interests of the group). Specifically, we addressed the following questions:

- What is the understanding of these measures?
- What is the willingness to employ the physical measures?
- What is the confidence in the physical measures?
- What is the willingness to adopt different safety procedures?
- What is the confidence in the safety procedures?
- What proportion of people immediately leave a building?

While many evacuation models focus on how physical external cues affect resident awareness and decision-making, less attention has been paid to the impact of social cues. As discussed below, previous social psychological research supports this finding and places social cues as central to decision-making in public response to emergencies.

Research from social psychology suggests that human behaviour in emergencies is guided by both *intra*group and *inter*group processes. Across studies on chemical,

[1] Drury, J., Carter, H., Cocking, C., Ntontis, E., Tekin Guven, S., & Amlot, R. (2019). Facilitating collective psychosocial resilience in the public in emergencies: Twelve recommendations based on the social identity approach. *Frontiers in Public Health.* https://doi.org/10.3389/fpubh.2019.00141

biological, radiological, and nuclear decontaminations[2], flooding[3], earthquakes[4], and terrorist attacks[5], two consistent key *intra*group factors found to influence evacuation behaviour were social influence and group bonds with other evacuees. Particularly in uncertain situations where emergency services are not yet present, social appraisal can play an important role in decision-making because members of the public look to other members for information about how to feel and act[6]. Group bonds can have positive consequences such as increased helping behaviour and coordination among evacuees, but it can also cause delays to safe evacuation because people stay behind to help others or return to hazardous areas to help others evacuate.

Evacuations include *inter*group processes because evacuees have existing evacuation guidance from others to inform their behaviour, and evacuations can be supported by emergency services. Positive *inter*group relations between the public and emergency services can increase adherence to guidance[7], but lack of trust in the authorities can increase non-adherence to their recommendations and increase the likelihood that the members of the public self-organise to decide appropriate behaviour themselves[8]. Important factors impacting public adherence to emergency services include the perceived clarity and legitimacy of the evacuation guidance

---

[2] Carter, H., Drury, J., & Amlôt, R. (2020). Understanding the impact of responder management strategies on public experiences and behaviour during mass casualty decontamination. In H. Zhu & H. Maibach (Eds.) *Skin decontamination – A comprehensive clinical research guide* (pp. 199-210). Cham, IL: Springer. https://doi.org/10.1007/978-3-030-24009-7_12

[3] Ntontis, E., Drury, J., Amlôt, R., Rubin, G. R., & Williams, R. (2018). Emergent social identities in floods: Implications for community psychosocial resilience. *Journal of Community and Applied Social Psychology, 28*(1) 3–14. https://doi.org/10.1002/casp.2329

[4] Drury, J., Brown, R., González, R., & Miranda, D. (2016). Emergent social identity and observing social support predict social support provided by survivors in a disaster: Solidarity in the 2010 Chile earthquake. *European Journal of Social Psychology, 46*(2), 209–223. https://doi.org/10.1002/ejsp.2146

[5] Drury, J., Cocking, C., & Reicher, S. D. (2009b). The nature of collective resilience: Survivor reactions to the 2005 London bombings. *International Journal of Mass Emergencies and Disasters, 27*(1), 66-95. Retrieved from http://www.ijmed.org/articles/113/download/

[6] Manstead, A. S. R., & Fischer, A. H. (2001). *Social appraisal: The social world as object of and influence on appraisal processes.* In K. R. Scherer, A. Schorr, & T. Johnstone (Eds.), *Series in affective science. Appraisal processes in emotion: Theory, methods, research* (p. 221–232). Oxford University Press.

[7] Carter, H., Drury, J., Rubin, G. J., Williams, R., & Amlôt, R. (2013). Communication during mass casualty decontamination: Highlighting the gaps. *International Journal of Emergency Services, 2*(1), 29-48. https://doi.org/10.1108/IJES-06-2012-0026

[8] Stott, C., & Drury, J. (2000). Crowds, context and identity: Dynamic categorisation processes in the 'poll tax riot'. *Human Relations, 53*(2). https://doi.org/10.1177/a010563

(such that evacuees know *what* actions they should take and *why* they should take them), and what actions the emergency services are taking to keep them safe. Crucially, the organisation providing the information must be seen as trustworthy and acting in the best interests of the group.

Together, the report from **Objective B1** and research from social psychology indicate that for people to evacuate effectively, they must understand why the actions are important, how to perform the actions, why they are good for the collective, and have trust in the people giving guidance. However, this work has only minimally been applied to fire evacuations. Moreover, key issues in human fire evacuations are not only how people evacuate (in terms of route-choice and response time), but why they stay put when told to evacuate, or under-respond in emergencies, and which information they most trust and follow. Although over-responding is rare (as indicated in **Objective B1**, and see Drury et al., 2020[9] for more details), the questions provided throughout our studies will also address this possibility.

To understand willingness to adopt different safety procedures in human fire evacuation and build confidence in those safety procedures, we examined resident perceptions of the procedures but also the source of information. We used focus groups to provide a key method for this because they enabled us to analyse collective meaning-making and decision making, and crucially to identify sources of commonality and diversion among the participants' views. This is particularly relevant for evacuation research as it can showcase collective processes that may hinder safe evacuation. We also used online surveys to enable us to quantify the impact of different variables on preferred behaviour, including the relationships between the variables (e.g., the extent to which resident perceptions of the guidance impacts their perceived confidence in ability to follow the guidance).

The research presented here for **Objective B2** examines: the views of FRS personnel on how residents of high-rise residential buildings respond in evacuations, as well as FRS personnel's views on guidance for residents about what to do in the event of a fire; resident understanding of evacuation strategies and fire safety measures; resident confidence in the guidance; and resident risk perception and predicted resident response to emergency evacuations and fire incidents. To determine barriers to safe evacuation and reasons for non-adherence to both stay put and evacuation guidance, we conducted individual interviews with fire and rescue service personnel (see Section B2-2), focus group interviews with residents

[9] Drury, J., Reicher, S. & Stott, C. (2020). COVID-19 in context: Why do people die in emergencies? It's probably not because of collective psychology. British Journal of Social Psychology, 59(3), 686-693. https://doi.org/10.1111/bjso.12393

of high-rise residential buildings (see Section B2-3), and surveys with residents of high-rise residential buildings (see Section B2-5). Throughout this report, we demonstrate how the results from these studies are used to inform the modelling for **Objective A2**. The sequence of studies and key outcomes are depicted in Figure B2-2.

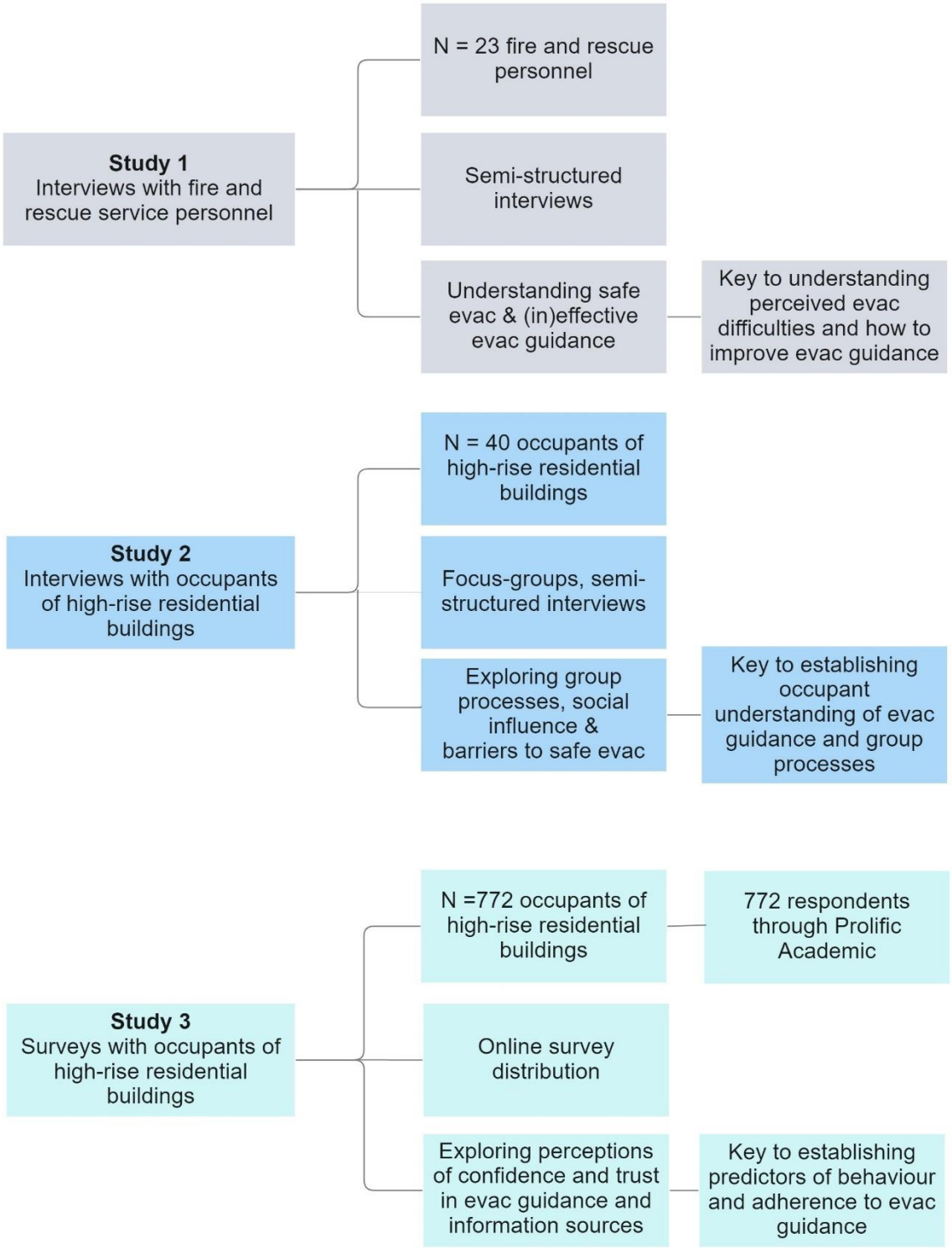


Figure B2-2 Diagram depicting the aim, method, and outputs of each study

B2-2. Fire and rescue service personnel interviews

B2-2.1 Participants

We conducted individual interviews with 23 FRS members (M_{age} = 46.35, 2 female, 21 male) in England to explore their understanding of key factors impacting evacuations in high-rise residential buildings. We recruited FRS personnel involved in multiple roles to get representative views from across the organisations. The roles included group managers (3), crew managers (1), fire engineers (1), fire fighters (2), fire safety inspectors (2), station managers (6), watch managers (5), crew managers (2) and watch chiefs (1). Further demographic details are the participants are provided in Appendix D.

B2-2.2 Procedure

We recruited participants using existing contacts of the project technical steering group, by contacting fire and rescue organisations, and through snowball sampling where participants shared the research with others or suggested potential interviewees to contact.

We used semi-structured interviews lasting between 45 minutes to 1 hour to guide the conversation but allow sufficient space for participants to raise important issues. We used individual interviews to allow for interviewee confidentiality and to explore individual experiences of assisting evacuations in more depth. All interviews were conducted online using Teams or Zoom due to COVID-19.

B2-2.3 Materials

The interview schedule focused on the following topics:

- Views on the current fire safety guidance for high-rise buildings, including both in regard to evacuation and the stay put advice, (e.g., ‘Could you please tell me which parts about evacuation guidance are most effective?’)
- The effectiveness of the fire safety guidance for shared amenity spaces in high-rise residential buildings (e.g., ‘we are interested in what you think the fire safety guidance should be for residents using these shared amenity spaces?’)

- What challenges are faced when facilitating fire evacuations (e.g., ‘Are there any challenges that you as a fire fighter have experienced in facilitating safe evacuation?’)
- FRS considerations when assisting people with vulnerabilities during evacuations (e.g., ‘Could you tell me about any additional considerations you encounter when assisting people with vulnerabilities during evacuations?’)
- FRS personnel views on the typical public response to fires in high-rise residential buildings (e.g., ‘How do you think residents of high-rise residential buildings typically respond to evacuation guidance?’)
- Perceived relations between FRS and residents, including FRS participation in community engagement activities around fire safety (e.g.,’ What do you think the relations are usually like between FRS and residents?’)
- Perceived effectiveness of FRS operational procedures for fire related evacuations (e.g., ‘Which part of this training/procedure is most effective?’)
- Views on Approved Document B and its association with evacuation behaviour (e.g., ‘How do you think the construction and design of buildings impact on safe evacuation procedures?)

B2-2.4 Data protection

We obtained video recordings of the interviews and transcribed them into anonymised transcriptions using pseudonyms. The recordings were stored on the University of Edinburgh GDPR compliant OneDrive and deleted once anonymised transcription of the interviews was completed. The participants were made aware of this in the Participant Information Sheets they read prior to participating and provided written and verbal informed consent for their data use.

B2-2.5 Analysis

Thematic Analysis was used to identify important themes for participants following the guidelines set out by Braun and Clarke[10], as illustrated in Figure B2-3. This entailed an iterative analysis process of generating and refining themes to identify key areas that were important to either facilitating or hindering safe response in the event of a fire.

[10] Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? Qualitative Research in Psychology, 18(3), 328-352. https://doi.org/10.1080/14780887.2020.1769238

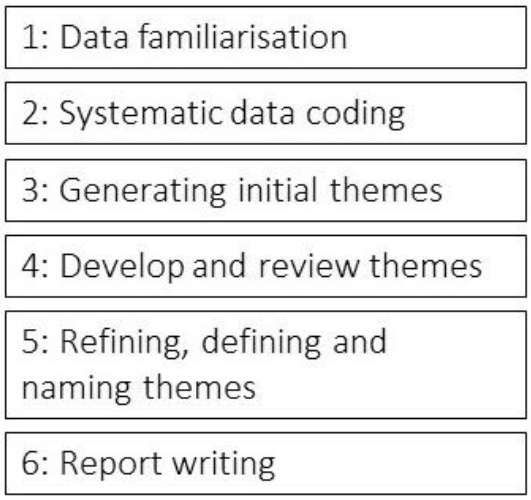


Figure B2-3 Thematic Analysis method

Throughout analysis, we focused on group processes based on knowledge from the prior social psychological literature, but we maintained an inductive perspective to allow for new topics to emerge. Our analytic stance was to explore the subjective interpretations of the FRS participants about real emergencies which enabled us to focus on FRS experiences and views of the events.

B2-2.6 Results

We discerned four over-arching themes from the data as illustrated in Figure B2-4.

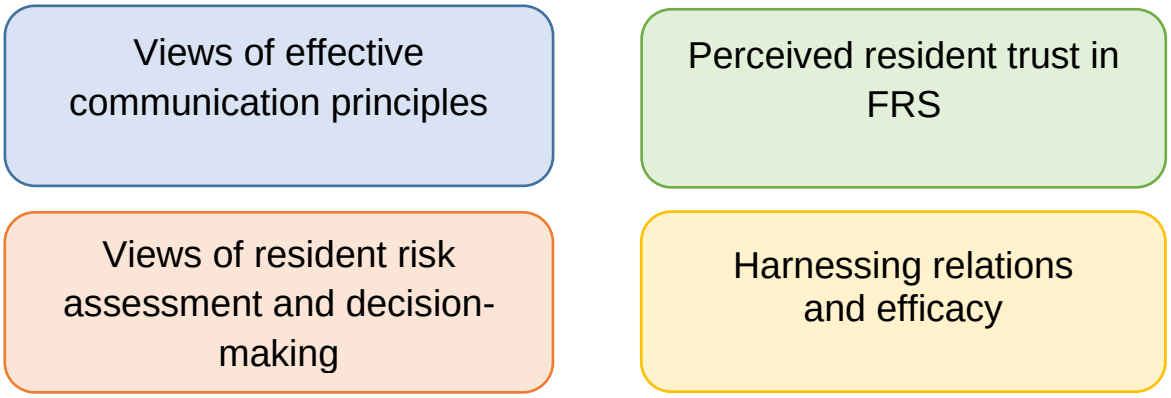


Figure B2-4 Key themes from interviews with FRS personnel

Note that all quotes presented in this report are verbatim for clarity.

B2-2.6.1 FRS views on effective communication and education

A recurring theme in the data was the perception of FRS personnel that their fire safety guidance could be clearer, more concise and accessible. For example,

> ‘I think it's just in more plain English and obviously different formats. You know for different language barriers and stuff, but I think a lot of these documents can be quite technical. And again, when I write a report, I always say to some of the staff or managers. “Write it for the average intelligent interested human being”’

Related to accessibility, participants repeatedly emphasised the importance that the guidance should be accessible to all audiences, e.g., through non-technical jargon, providing the guidance in multiple languages, making guidance accessible to people with visual or hearing impairments.

The participants specifically focused on the need for the guidance to carefully explain not just what response is needed from residents (e.g., staying put) but why the safety procedures are important and how to follow those procedures. Participants raised that stay put was an area where increased information was needed to assist residents in adhering, such as what procedures were in place to make stay put the safe option.

Although the importance of educating residents in fire safety was raised by participants, some of the participants believed that FRS needed to take additional steps to ensure residents fully understood what was expected of them, such as by assessing resident understanding rather than assuming understanding.

Regarding fire safety education, some participants said that providing fire safety education prior to emergencies was needed to improve resident decision-making and reduce the prevalence of unsafe behaviour or inaccurate information spreading. For example,

> ‘it's just a matter of engagement by us, the managing agents, the resident’s association. It’s that ongoing engagement and reassurance, and just being kept up to date with what's going on. Because sometimes a little knowledge is a dangerous thing, and then you sort of have all these rumours spreading around, and so if you can, again, engage, engage with residents.’

Where residents responded to a fire in an inappropriate way, this was attributed to a lack of knowledge of the guidance. However, participants felt it could be difficult to get residents to participate in their fire safety education activities. Importantly, they stressed that engaging and accessible education was required to gain uptake for residents in the training. The participants suggested ideas such as having interactive or one-to-one guidance session with residents, including evacuation drills or short videos that could be watched.

One of the reasons that participants perceived one-to-one guidance to be effective is because they believed that the perceptions of the person (or organisation) providing

the information influenced the extent to which residents listened and adhered to the guidance. Here, the participants believed that positive pre-existing relations between FRS and residents meant the residents were more likely to participate in training activities or attend to guidance shared by FRS. This perception matches the findings in interviews with residents (see Section B2-3.5.3).

B2-2.6.2 FRS views on perceived resident trust in FRS

The participants repeatedly mentioned the importance of group relations in how they were viewed by residents. A recurring theme was the perceived importance of being seen to work *for* and *with* residents to keep them safe. For example, participants believed that most of the public support and trust the FRS because they coordinate with the public in an emergency, such as by providing reassurance and taking a gentle approach when providing guidance.

The importance of group relations was also highlighted as potentially leading to negative outcomes in some circumstances. Some participants contrasted their approach with the approach taken by the police. When comparing their views on how communication approaches impacted relations with residents, participants associated their perception that the police are sometimes overly authoritative with the public not wanting to adhere to the police guidance. For example,

> ‘We’re the friendly fire services, aren't we? You know, we don't get tarred with the same brush as the police do. Incorrectly tarred obviously, but you know, when we're not seen to be unfriendly. We’re not seen to be looking to find you at fault of something. We’re there to help.’

Similarly, historical positive relations between FRS and the public were seen to lead to increased trust in the FRS guidance and sometimes increased adherence to their instructions. This was seen as quite a fragile relationship at times, however, since if residents had a prior negative experience with FRS then it would limit the extent to which they engaged with the FRS guidance prior to an emergency or followed their instructions during an emergency.

An exception to the public’s positive views of FRS, however, was when the participants believed the FRS were seen to not necessarily be working in the residents’ interests. They raised examples of when they believed residents saw FRS as causing too much inconvenience and viewed this as leading to disengagement with FRS. A recurring example was when the FRS asked for building changes which incurred cost to the residents and residents did not view any immediate risk so viewed the changes as unnecessary.

The participants conceptualised that they sometimes needed to provide reassurance to residents when relations with other sources of information were negative. For example, if residents did not trust their building management and therefore their

communication about fire safety, participants believed they could reassure the residents that building management were taking appropriate measures. In this way, the increased positive relations between FRS and the residents were seen to promote resident engagement with fire safety measures. For example,

> ‘I think there's an element of trust in us, and also, I think people are more likely, as I said earlier, kind of I think people are a little bit more wary of their landlords sometimes, and so showing that we're co-producing it with them does put that element of trust far more into people.’

B2-2.6.3 FRS views of resident risk assessment and decision-making

A recurring theme raised by FRS participants when assessing how and why residents reacted to fire emergencies was the perceived lack of resident understanding of guidance or the nature of the situation. For example, participants described how residents would get scared and act in a way that was not the best course of action because they were surprised, and misunderstood which action was the best to take.

In contrast to this, there was a belief by FRS that residents who were familiar with the evacuation guidance would adhere to what guidance they knew. This could, at times, be problematic since the residents might not understand new procedures or why they are in place (e.g., stay put) and evacuate instead.

Residents’ familiarity with other emergencies was also viewed as important by FRS. For example, knowing about previous fire disasters caused distrust in stay put guidance and the building itself. This is consistent with the accounts by residents after the Grenfell Tower disaster (see Section B2-3.5.3). For example, FRS said,

> ‘And now it's becoming more common to evacuate rather than stay put. Whether that's the official guidance or whether that's just residents because they've been watching the news like everybody else.’

Trust through group relations were seen by FRS as a key factor impacting on whom residents looked to for information during an emergency to assess risk and appropriate actions. For example, the participants believe that if residents did not trust building management then they would be unlikely to seek information from them or trust the information previously given. The reason for the (lack of) trust was thought to be whether or not the residents had prior positive or negative relations with the information source. Thus, participants conceptualised that positive relations between the FRS and residents led to residents being more likely to look to the FRS about the level of severity of the emergency and how to respond. For example,

> ‘[I] think it comes down to the relationship they have with the owners of the building or the workers there. I've found that when it's a well-worn,

there's like a face there all the time from the company that run it, that talks to community, the community that lives there, they tend to believe better. They tend to listen more and to do as they were asked or not do as they are asked but you know, they understand what the rules are. When it's more of a faceless set of rooms that you put a note in about your complaints that you never heard anything about, I've found in them, the residents kind of are 'very well, we'll l do what we think is right and not what they are saying, because they never interact with us.' So I do think, I think a lot comes down to how it's running. If they engage with each other, I find it worked better, whereas if it is just the concierge booth in front desk, and there's someone in one day a week, kind of drifts into, 'we'll do as we please, not as you want' kind of situation.'

B2-2.6.4 Harnessing relations and efficacy

Throughout the interviews, the FRS participants discussed how group relations among residents could have both positive and negative consequences in emergencies.

On the one hand, FRS believed that positive and strong community relations among residents of a building were associated with better knowledge of the fire safety guidance because it was discussed in resident meetings or training sessions. The group cohesion was also seen by FRS to sometimes facilitate quicker, safer evacuation because residents would alert others about the emergency and encourage response. For example,

> 'I think if you've got a good community spirit within your building, you're more likely to sort of they are more likely to engage with each other, which is probably a better way'

On the other hand, however, the group cohesion was seen by FRS to potentially hinder evacuation, such as through residents encouraging others to evacuate quickly when a stay put procedure was in place[11]. This was also seen to hinder evacuation because residents would evacuate together in groups and potentially interrupt FRS operations, such as through blocking stairwells.

Overall, the participants advocated for better coordination between FRS and residents to facilitate safe response and emphasised that the group cohesion between residents could benefit FRS operations. For example, participants mentioned that residents could coordinate one another to evacuate when evacuation

[11] Notably, however, stay put strategies do not preclude residents evacuating to safely if that is their preference.

was needed, liaise with FRS about the locations of vulnerable residents, or help with corralling during evacuations.

B2-2.7 Conclusions

Although the findings from the interviews with FRS personnel cannot be directly implemented into our evacuation simulations, they provide valuable insights into the ways in which group relations impact how and why residents respond in the event of a fire incident.

Together with the interviews with residents, the findings have informed the scenario development for the modelling, such as understanding what factors may cause pre-evacuation delays, evacuation speed, route choice, and flow (see Section 4 for further details). They also informed the development of the resident survey to obtain quantitative data on these variables.

B2-3. Interviews with residents

B2-3.1 Participants

We conducted 16 focus group interviews with 40 residents (M_{age} = 36.59, 22 female, 18 male) of high- and medium-rise residential buildings in England and Scotland. We aimed to conduct focus groups with residents of the same buildings to better understand group processes within the buildings, but this proved infeasible so only one focus group involved residents from the same building (FG15). Participants were all over the age of 18 and a current resident of either a high- or medium-rise residential building. Participants with prior traumatic experiences or who are still heavily negatively impacted by prior experiences of building evacuations were unable to participate since the nature of the questions may have raised sensitive memories for the participants.

B2-3.2 Procedure

We used semi-structured focus group interviews lasting between 45 minutes to 1 hour. The focus group method was used with residents to explore collective meaning-making and decision-making around key factors impacting either adherence to stay put or evacuation guidance. All interviews were conducted online using Teams or Zoom due to COVID-19.

B2-3.3 Materials

The interview schedule was semi-structed to allow participants the opportunity to raise topics that were important to them. However, the questions in the interview schedule addressed the following areas[12]:

- Residents' knowledge of the fire safety guidance for their building (e.g., 'Can you please tell me about the current guidance for your building in the event of a potential fire?')
- Residents' likely response to a fire and reasons for the response (e.g., 'What do you think would make you aware of the fire?', 'Why do you think you would

[12] If residents had experienced a fire in their building then we asked about their perceptions and behaviour during the fire instead of likely response if a fire were to occur.

act that way?', 'How do you think you would react if you received information by… [text message/neighbour, etc]?')

- Expectations of how other residents would respond in the event of a fire (e.g., 'How do you think others in the building would react in a fire?')
- Views on the fire safety guidance, focusing on guidance to stay put or evacuate (e.g., 'Imagine there was a fire in your building, do you think the 'stay put' guidance would be easy to follow?', 'what would stop you following the 'stay put' guidance?', 'Are there particular parts that are clear? Unclear?')
- Views on who creates the fire safety guidance (e.g., 'Who do you think creates this plan?', 'What do you think of them?')
- Challenges to evacuating the building, including from shared amenity spaces and for vulnerable residents (e.g., 'what do you think are the main challenges you might experience?')
- Residents' engagement with fire safety training (e.g., 'what barriers are there to engaging with these materials?')
- Views on how fire safety guidance for the building could be improved (e.g., 'Is there any way that you think the evacuation guidance for your building could be improved?')

B2-3.4 Data protection and analysis

The same data protection and analysis strategies were used as detailed in Sections B2-A.4.1 and B2-A.4.2.

B2-3.5 Results

We identified three over-arching themes in the data: information validations and perceived collectivity, as illustrated in Figure B2-5.

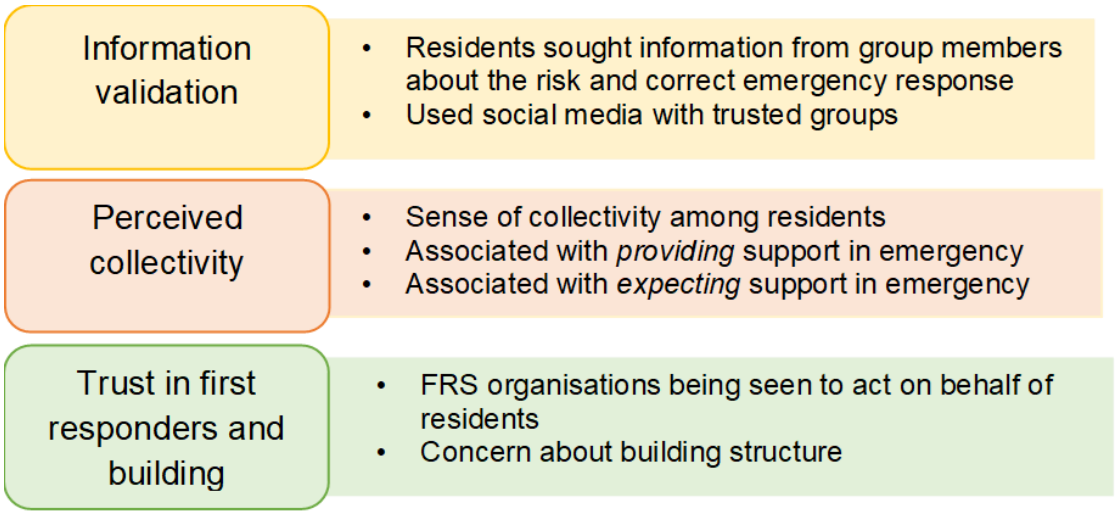


Figure B2-5 Key themes from interviews with residents of high-rise residential buildings

B2-3.5.1 Information validation

Participants placed importance on how others would respond when interpreting the level of threat and appropriate response in the event of a fire. They reported that if they were unsure about what was happening in the event of a potential fire (such an alarm sounding or smelling smoke) they would seek information from others to establish the level of threat. Seeking information included going to the doors of other residents or communicating via social media (e.g., Facebook) or mobile app (e.g., WhatsApp).

> ‘My immediate response was like poke my head out the door to see if any of my neighbours were stood out as well and we both said to each other. Is this real? Is it not? And then went back in and give the Facebook group like a refresh… if they hadn't [...] updated, we would have just to have gone down ourselves. But yeah, neighbours first, and then the Facebook group.’

The accounts from participants suggested that seeking information could either speed up or delay evacuation, and it would reduce uncertainty about how to respond. For example, being encouraged by other residents to leave motivated participants to act more quickly. However, the collective decision-making process and checking multiple sources of information could also be time-consuming leading to overall evacuation delays.

B2-3.5.2 Perceived collectivity

Participants who felt that other residents were part of the same group reported having trust in the views of the other residents, expecting support from other residents, as well as wanting to give support. For those who felt part of a group with the other residents giving information, they trusted that the information they were given was in their best interest (e.g., ‘because that neighbour is my friend. She wants me to live’), and they expected support during the emergency. For example,

> ‘I would expect [the neighbours] to like knock on our door, shout, somehow make us aware before they begin evacuate downstairs themselves. Um, but yeah, like obviously you don't know how many people are in there or anything, so I would kind of expect someone to come get me. But yeah, I would hope that if it was sort of specifically on our floor and people were evacuating themselves then yeah, they'd be making some kind of shouting or something to make everyone else on the floor aware.’

Importantly, the expectation of help was treated as somewhat obvious and normative. Since fire incidents were perceived as a potential threat to all residents, it rendered all residents as being in the same group against the fire and required a collective response. However, this was not the case for participants who did not feel

close to the other residents. Participants believed that they could not necessarily trust the information from other residents or rely on them for help because there was not a meaningful social connection between them.

> ‘Well, I don't really know who lives… I don't actually even think I have a next-door neighbour and there are people on the same floor as me. I don't know them as well. think I've given post to them twice. Um, so I’d, I certainly wouldn't rely on my neighbours to inform me... I wouldn't be relying on my next-door neighbours to tell me.’

B2-3.5.3 Trust in first responders and building

The relationship between trust, expecting support and feeling part of a group was also a recurring topic when participants discussed their views of emergency services. For example, some participants reported that they appreciated FRS making the effort to engage with residents and act on behalf of residents to maintain safety:

> ‘They sent information people around, so the fire brigade people came and they went around the building knocking on doors and having chats with people and just explaining, you know, this is what's happening in your building. And I think that was probably quite useful’

The trust in FRS was compared to other organisations that were less trusted because they were perceived to have motives other than keeping residents safe. For example,

> ‘I definitely trust the fire service above managing agent because ultimately the managing agent is a profit organisation. So their focus is always going to be on financials. So certainly the fire brigade over them. ‘

In line with the FRS interviews reported in Section B2-2, residents reported concern about stay put guidance and the structure of their building following previous emergencies such as the Grenfell Tower fire. For example,

> ‘Because of Grenfell, and just because, you know, I'm living and breathing in the um, inappropriately named cladding scandal, building safety crisis is more accurate… So I don't trust the builds. So unfortunately, I won't be able to trust the advice of stay put, even though we've got sprinklers. I would leave.’

The lack of trust in stay put was prevalent throughout the interviews and was associated with a subsequent lack of trust in FRS who advised adherence to stay put. For example,

‘I am really, really saddened by this, but I've come to know my trust in the fire service is completely been decimated because they have consistently told me to stay put. Now admittedly that was not coming from an informed position because they didn't know how bad my building was’

‘I will never agree to stay put again, well I cannot see me feeling comfortable again with it. Even if it is the same guidance for everyone. With the national scandal I have no faith in the fire service, my management agent and any developers/manufacturers, so whatever remediation I do not feel I will be able to trust that things are as fire safe as possible’

B2-3.6 Conclusions

The interviews with residents demonstrate that group relations strongly impact their response to fire incidences when there are positive pre-existing relations between neighbours in the building. In particular, residents look to other for information when interpreting the level of threat and how to respond to the threat and expect support from others to alert them to the fire and evacuate.

The results do not quantitatively inform the evacuation model developed in **Objective A2** of the project, but they informed our scenario development by guiding reasons for response time, evacuation time, route choice, and flow. A summary of how the interview data informed the scenario is shown in Section B2-4. Moreover, the qualitative data assisted the development of the survey for residents (Section B2-5) which provided us with quantitative data to inform the model.

B2-4. Mapping the qualitative data onto likely behavioural responses

Below we summarise the recurring themes from both the interviews with FRS and residents and how they informed the scenarios for the evacuation scenarios developed in **Objective A2**.

We categorised in Table B2.1 the implications of the interview data for: resident delays prior to evacuation (e.g., by seeking information from others), speed during evacuation (e.g., an increase in speed), route choice (e.g., taking the same route as other residents), and pedestrian flow in the building (e.g., eased flow due to residents taking the correct route. Moreover, we recommend resident actions to consider in the model (e.g., residents providing information to others).

Where boxes are empty, this is because insufficient data was provided in the interviews to confidently claim an effect (e.g., how trust in an information source that impacts on route choice).

Table B2.1 Implications of the interview data for model scenario

Key topic	Delay (pre-evacuation)	Speed of response action	Route choice	Flow	Resident actions to consider for simulations
Residents telling others to evacuate	May lead to either 1) evacuation delay to due individuals seeking others to provide information, 2) reducing delays due to residents receiving information to evacuate	Increase		May be impacted by: 1) more people egressing at once, 2) individual residents disrupting flow to spread information to others (e.g., going upstairs, back to their flat)	Residents providing information to others, seeking others to share information
Knowledge of fire safety guidance	Reduced delays if residents have sufficient knowledge of evacuation procedures	Increase	Taking the correct route	Eased flow due to residents taking the correct route	Following guidance more accurately (not delaying, correct route) and promptly (not delaying, increased speed)
Moving from shared amenity spaces	Delay due to travelling from shared amenity space to seek other residents		Taking complex route instead of evacuating immediately	Interrupting flow due to moving from shared amenity spaces to seek own residence and residence of others (e.g., going upstairs)	Complex route-taking to visit others, possibly against evacuation route (e.g., further into the building)

Key topic	Delay (pre-evacuation)	Speed of response action	Route choice	Flow	Resident actions to consider for simulations
Information seeking	Delay while information-finding in environment. Priorities (in order) were: 1) checking if there is smoke, 2) seeing how others react to stimuli / seeking validation from others, 3) checking social media	Aligning evacuation speed with others	Taking the same route as others	Possible congestion due to pairs / groups moving together	Delays prior to evacuation to check environment, communicate with others and check social media, then clustering and joint egress in pairs / groups.
Learned irrelevance (assuming false alarm)	Take a long time before beginning evacuation	Decrease		Easier flow for those who evacuate early	Some residents delay evacuation and move slowly, while those evacuating early can leave more easily due to easy flow conditions
Mobility support (2 cases)	Delays due to 1) time to transfer from wheelchair to evacuation chair, 2) getting down the stairs assisted by other people	Overall increase for the person getting mobility support but decrease for the people providing assistance	Route impacted as individual may need to move to refuge to access mobility support	1) Evacuation chair can take up space which could lead to congestion, 2) will hamper fire fighters if they cannot climb the stairwell	Delay for person with disability and helper prior to evacuation, and possible bottlenecks in stairwells at source of evacuation chair

Key topic	Delay (pre-evacuation)	Speed of response action	Route choice	Flow	Resident actions to consider for simulations
Confidence in ability to follow guidance	1) Lack of confidence can cause delay due to validation seeking, 2) people may over-adhere to 'stay put' because they think they know the stay put guidance	Prompt speed for confident residents	Correct route choice for confident residents		1) Higher appropriate evacuation behaviour in confident residents, but 2) possible inaccurate behaviour due to misplaced confidence (e.g., staying put)
Individual risk perception	Perceiving low risk may lead to delayed evacuation (i.e., perception that the fire will not reach the resident)	Increase when risk is perceived	People may choose alternative routes than advised based on the situation they see	Stairwells congested as people evacuating unnecessarily (when stay put is in place or when evacuating differently to FRS guidance such as when staged evacuation is planned)	Residents trying to leave quickly when risk is perceived, unnecessarily evacuating (e.g., when supposed to be waiting for FRS), taking an alternative route to the one recommended

Key topic	Delay (pre-evacuation)	Speed of response action	Route choice	Flow	Resident actions to consider for simulations
Engagement with fire safety guidance and procedures	1) Those who know the guidance is stay put may insist on staying put even when fire is near, 2) those who do not engage with the guidance may have a delayed response or not evacuate at all	Increase for residents with high engagement	Correct route choice for residents with high engagement	1) Those who are engaged exit quickly leaving a clear route for fire fighters, but may be slightly delayed by alerting others, 2) those not engaged may require more support from FRS therefore clogging up route	Engaged people will tend to raise the alarm on exit either by door knocking or activating a manual call point. Tendency for engaged residents to support others to evacuate (specifically elderly / disabled or those with young children). Those not engaged may require support/validation from others
Trust in information source	1) Social media messages could be ignored, 2) increased false alarm experience leads to lack of trust in fire alarm / complacency, 3) low socioeconomic status area may be wary of who knocks on the door	1) Message comes from FRS / neighbour / friend seen to increase perceived severity of the emergency, 2) social media / resident groups could alert residents more quickly (but social media conversations can lead to delay from confusion / clarifications needed)		Those who trust the message will evacuate - potentially unnecessarily depending on the policy (i.e., evacuating on a stay put policy) resulting in congestion	1) Small delay during sense-checking depending on who the message is from (e.g., friend/FRS versus stranger at the door), 2) if the information source is trusted evacuation could be immediate as urgency is implied

Key topic	Delay (pre-evacuation)	Speed of response action	Route choice	Flow	Resident actions to consider for simulations
Trust in other residents' knowledge and understanding	Low trust in other residents' knowledge can lead to validation seeking from trusted / known residents / fire marshals before evacuating	Increase for those with high trust	High levels of trust associated with individuals following the exit routes of other residents. Residents with low levels of trust may seek validation from others and/or the environment or acting independently	Residents with high levels of trust may leave as a group	1) Low trust in others may lead to information seeking or acting independently. 2) trusting the knowledge of others is associated with leaving together
Discomfort with stay put		Quicker response as individual will feel safer out of the building	Residents may take what they perceive to be the fastest route out the building	Increased congestion due to too many residents evacuating at once unnecessarily	Discomfort with stay put based in knowledge of previous disasters (e.g., Grenfell Tower) leading to high concern, quick evacuation, and raising alarm to other residents

B2-5. Survey with residents of high-rise buildings

B2-5.1 Participants

We recruited 772 participants. Our inclusion criteria were that participants had to be over the age of 18 and must have lived in a building with 6 or more storeys at the time of participation. We additionally excluded participants who did not complete the survey or pass an attention check halfway through the survey.

Participants were aged 18-75 years (M_{age} = 33.56 years, 18-29 = 44%, 30-50 = 47.8%, 51+ = 7.9%), 416 identified as female, 343 as male, 5 as non-binary, 1 as a trans female, and 4 preferred not to say. The participant sample comprised of 32 ethnicities, with 72% being white or British. The first language was predominantly English (99.2%) but other first languages spoken were Cantonese, Greek, Hindi, Gujarati, Portuguese, Nepalese, German, Yoruba and Tagalog. 8% of participants stated they had some form of health condition: 40.4% unseen disability, 27.7% mental health, 8.5% wheelchair/mobility, 8.5% hearing impairment, 2.1% visual impairment, 12.8% multiple, 4.3% other (disability not listed). In terms of length of residency, 25.6% had resided in their home for less than 1 year, 33.3% for 1-2 year, 22.6% for 3-4 years, 11.7% for 5-10 years, and 5.6% for over 10 years (1.2% did not know or could not remember).

B2-5.2 Procedure

We recruited participants through Prolific Academic for the study to explore occupant perceptions of evacuation guidance in high-rise residential buildings. Prolific Academic is an online survey platform that accesses UK participants with a representative demographic sample. An initial screening survey was used to identify eligible participants by asking if they resided in a building with more than 6 storeys.

B2-5.3 Materials

The online cross-sectional survey focused on the following topics (participants' agreement on the statement and likely actions are measured by a 5-point Likert scale with 1 = strongly disagree / very unlikely, 5 = strongly agree / very likely):

- Perceived shared social identity among residents (i.e., the extent to which participants believed the residents felt part of the same group, e.g., 'I think of myself and my neighbours as being part of the same social group')

- Views on guidance to stay put or evacuate, including clarity of the guidance (e.g., ‘The stay put guidance about how to react in the event of a fire provides sufficient practical information about what to do’), the perceived safety of the guidance (e.g., ‘The stay put guidance will help to keep residents safe’), own willingness to follow the guidance (e.g., ‘If there was a fire incident, I would adhere to the proposed stay put guidance’), and belief that other residents would follow the guidance (e.g., ‘The average resident in my building would follow the stay put guidance’).
- Likely response in the event of a fire (e.g., ‘evacuate immediately’ or ‘stay in place)
- Likelihood of performing actions that could delay evacuation (e.g., ‘tell others in the building what they should do’, ‘help others prepare to evacuate’, ‘seek information from others in the building’)
- Preferred mode of communication with others in the event of a fire (e.g., ‘face-to-face’, ‘social media’, ‘phone messaging app’)
- Reaction if in a shared amenity space during a fire incident (e.g., ‘stay put until told to evacuate’, ‘evacuate the building straight away’)

B2-5.4 Data protection

All the information collected was processed in accordance with Data Protection Law. Participants’ data was allocated a unique participant number to assist anonymity. The data was stored in a password protected Qualtrics account and the University of Edinburgh’s secure encrypted storage service. Participants were informed about the use of their data in a Participant Information Sheet and provided informed consent.

B2-5.5 Results

B2-5.5.1 Perceived neighbourhood relationship and impact on actions during a fire incident

Below we report the percentage distributions for the survey questions related to participants’ perceptions that the residents in their building feel part of the same group, that others would impair their ability to evacuate, and their level of expected support in a fire incident (Table B2.2).

Table B2.2 Perceived neighbourhood relationship and impact on actions during a fire incident

Example statement	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I feel a sense of unity with my neighbours	23.6%	35.6%	28.3%	12.2%	0.3%
I think the actions of others would impair my ability to evacuate during a fire incident	7.9%	32%	24.9%	28%	7.1%
I think that the others in my building would help me during a fire incident	20%	52.3%	19.4%	7.6%	0.5%

B2-5.5.2 Interpretation of the guidance to stay put

Below we report the percentage distributions for the survey questions related to participants' belief that the example stay put and evacuation guidance from the London Fire Brigade was clear, as well as their trust in the stay put and evacuation guidance (Table B2.3).

Table B2.3 Interpretation of the guidance to stay put and compliance

Statement	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
The stay put guidance about how to react in the event of a fire provides sufficient practical information about what to do	1%	9.4%	17.1%	57%	15.4%
The stay put guidance will help to keep residents safe	3.7%	13.6%	27.1%	42.3%	13.3%
The evacuation guidance for my building provides sufficient practical information about what to do when leaving the building	5%	13.9%	25.8%	43.8%	11.5%
The evacuation guidance will help to keep residents safe	3.5%	6.4%	23.8%	49.9%	16.5%

B2-5.5.3 Impact of trust

We conducted mediation analyses to assess the relationships between the perceived clarity of the guidance and willingness to follow it. The variables are aggregated responses to the topics listed in Section B2-5.3. For example, perceived clarity of the stay put guidance was measured using three items such as 'The stay put guidance about how to react in the event of a fire provides sufficient practical information about what to do'. The perceived clarity of the stay put guidance was not related to willingness to follow it (see Figure B2-6). However, the perceived clarity of the evacuation guidance was related to willingness to follow it (see Figure B2-7). For both types of guidance, trust in the guidance and trust in the creators of the guidance were important variables when understanding the relationship between perceived clarity of the guidance and willingness to follow it.

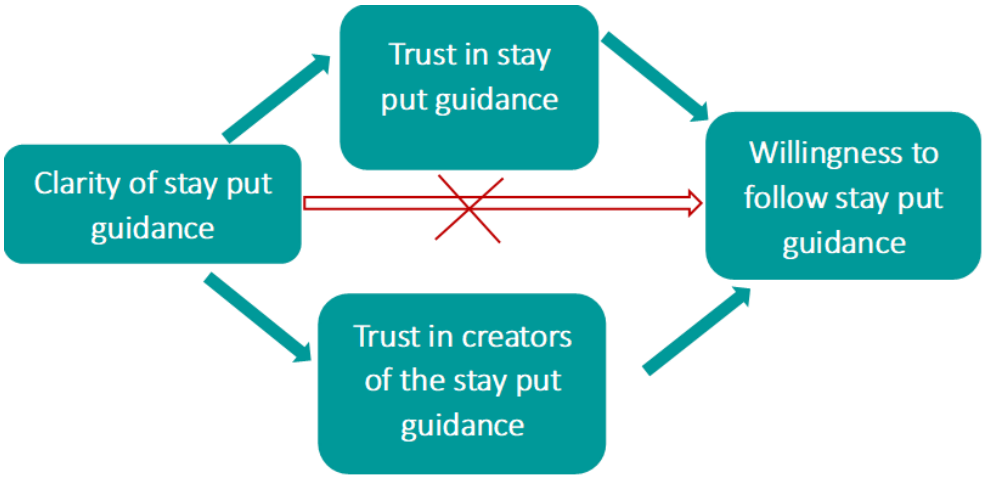


Figure B2-6 The role of trust in the stay put guidance and its creators on the relationship between the clarity of the stay put guidance and willingness to follow it

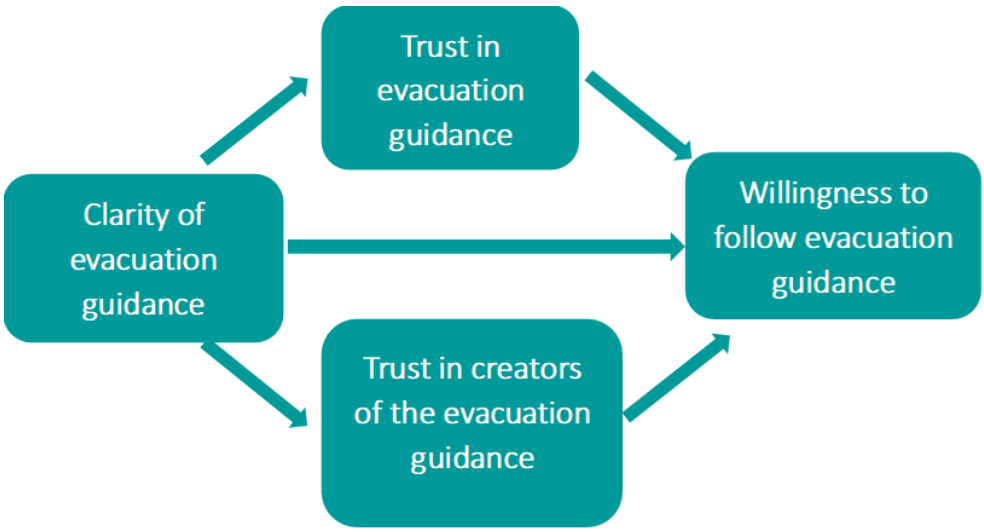


Figure B2-7 The role of trust in the evacuation guidance and its creators on the relationship between the clarity of the guidance and willingness to follow it

B2-5.5.4 Sequence of behaviours

We evaluated the data to establish a sequence of actions that residents might take in the event of a fire incident (see Figure B2-8 to Figure B2-11). It was infeasible to ask participants to select a sequence of actions they would take, and determining causation between the actions is not possible due to the correlational design of the survey (e.g., we could not ascertain whether self-reported likelihood to evacuate immediately led to helping others to evacuate). However, we could use variables from the survey to construct scenarios that could inform future models for **Objective A2**. For example, we can determine how many residents reported that they would begin to evacuate immediately, and then establish from that subset of participants how many would be likely to inform other residents, and then how many of those residents would use social media to share information.

Of the 662 participants who said they would be likely or very likely evacuate immediately

- 311 would be likely or very likely to tell others in the building what they should do,
- 357 would be likely or very likely to help others prepare to evacuate,
- 341 would be likely or very likely to seek information from others in the building,
- 590 would be likely or very likely to communicate about the fire face-to-face,
- 248 would be likely or very likely to use social media to communicate about the fire with others,
- 442 would be likely or very likely to use a phone messaging app (e.g., WhatsApp) to communicate about the fire with others,
- 499 reported it was likely or very likely that being told by fire and rescue services to stay put would prevent them from evacuating,
- 206 reported it was likely or very likely that seeing others not evacuating would inhibit them from evacuating.

Of the 129 participants who said they would be likely or very likely to stay put

- 55 would be likely or very likely to tell others in the building what they should do,
- 68 would be likely or very likely to seek information from others in the building,
- 101 would be likely or very likely to communicate about the fire face-to-face,
- 57 would be likely or very likely to use social media to communicate about the fire with others,
- 91 would be likely or very likely to use a phone messaging app (e.g., WhatsApp) to communicate about the fire with others.

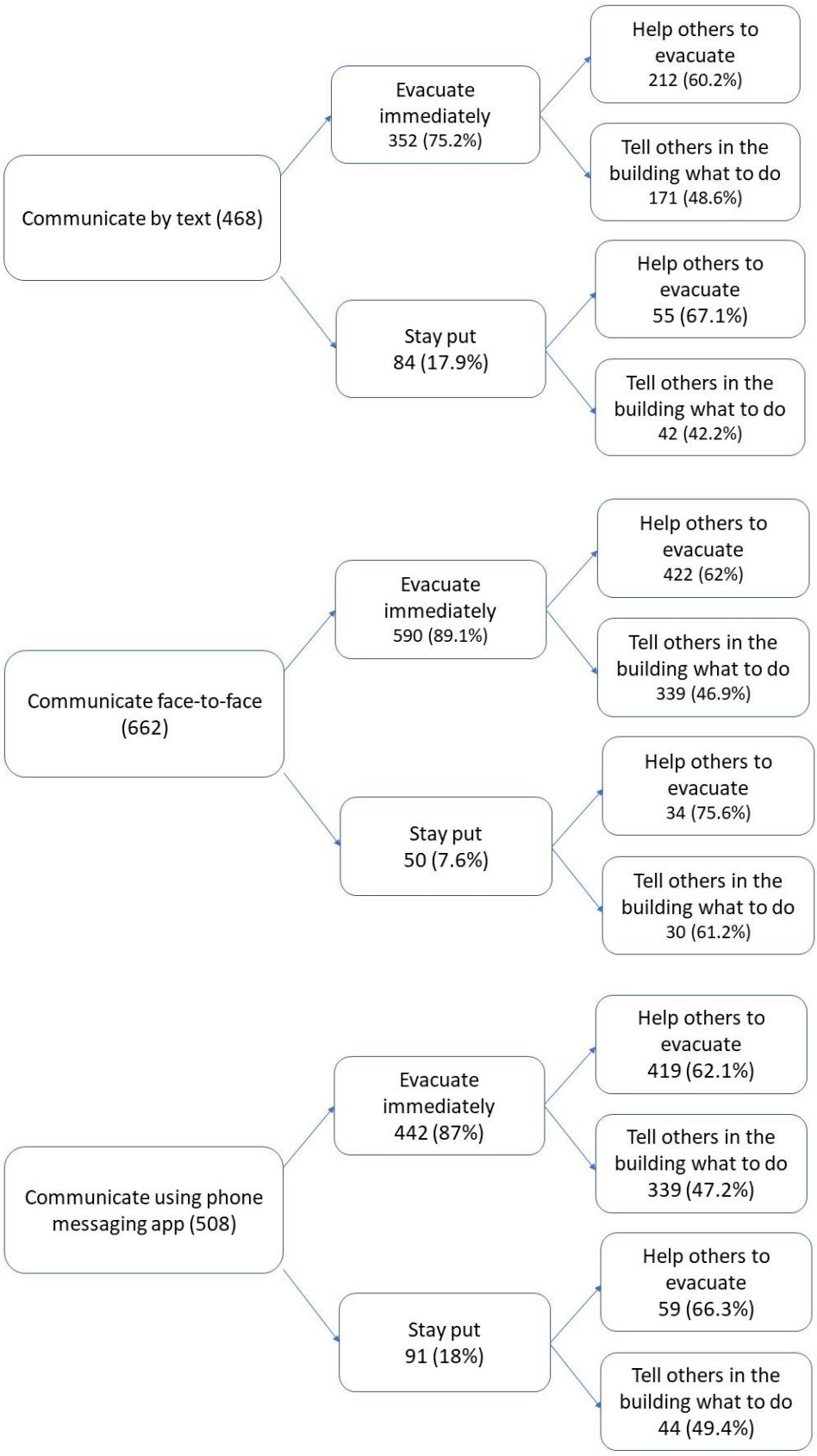


Figure B2-8 The sequence of events from likely mode of communication to likely behaviours

We explored a progression of events from preferred method of communicating about a fire. For example, for residents who reported being likely or very likely to communicate about a fire using a phone messaging app (e.g., WhatsApp) (508), 442 (87%) would be likely or very likely to evacuate immediately. Of these participants, 419 (62.1%) would help others to evacuate, 339 (47.2%) would be likely or very likely to tell others in the building what to do.

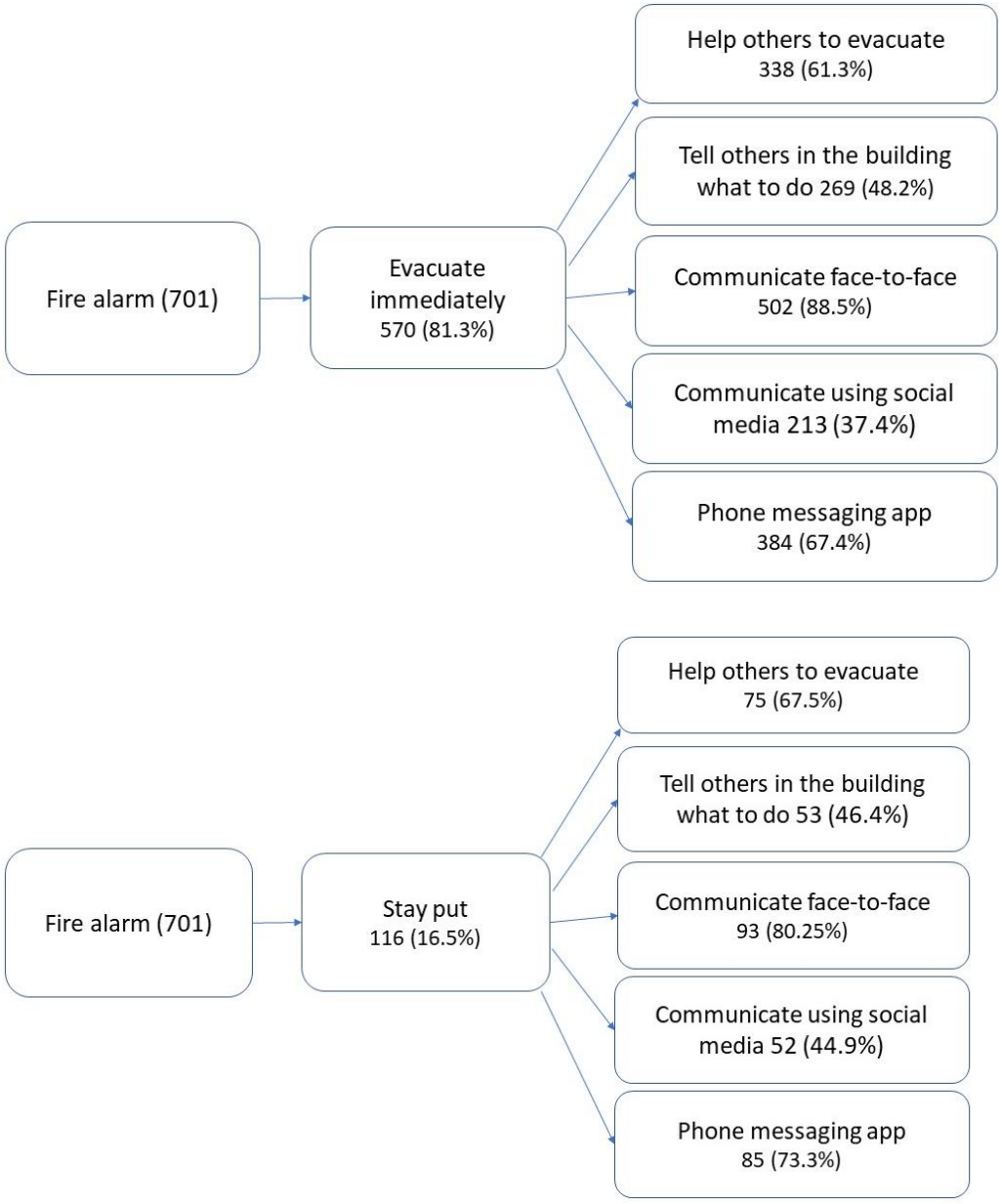


Figure B2-9 The sequence of events from importance of type of message received to actions taken, fire alarm

We then established scenarios based on the perceived importance of different types of information about the fire. For example, for residents who felt a fire alarm was important or very important when deciding how to respond to a fire (701), 570 (81.3%) of residents said they would evacuate immediately. Of those residents, 338 (61.3%) of residents would be likely or very likely to help others to evacuate, 269

(48.2%) would be likely or very likely to tell others in the building what to do. 502 (88.5%) would be likely or very likely to communicate face-to-face, 213 (37.4%) would be likely or very likely to communicate by social media and 384 (67.4%) would be likely or very likely to use a phone messaging app (e.g., WhatsApp).

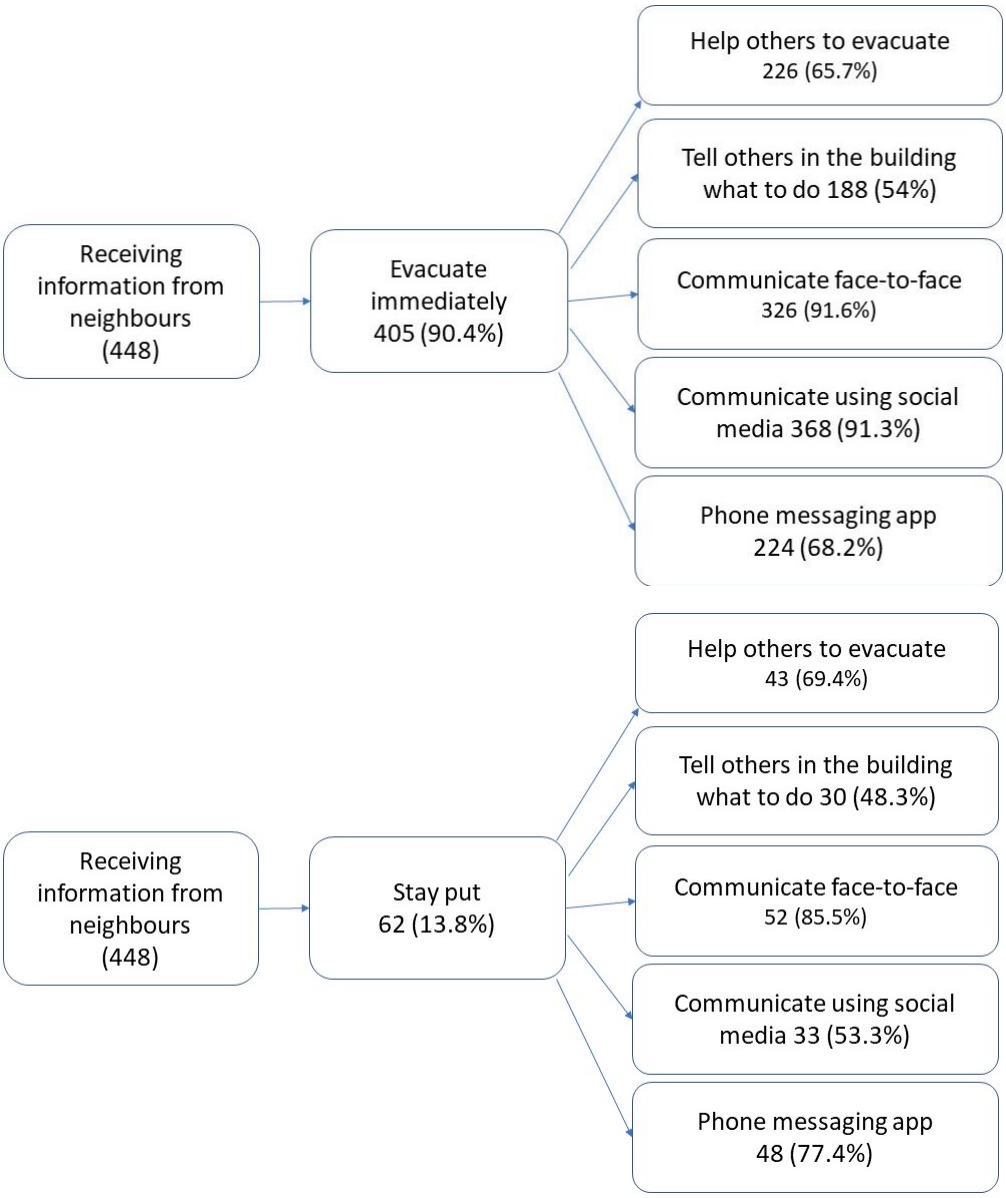


Figure B2-10 The sequence of events from importance of type of message received to actions taken, receiving information from neighbours

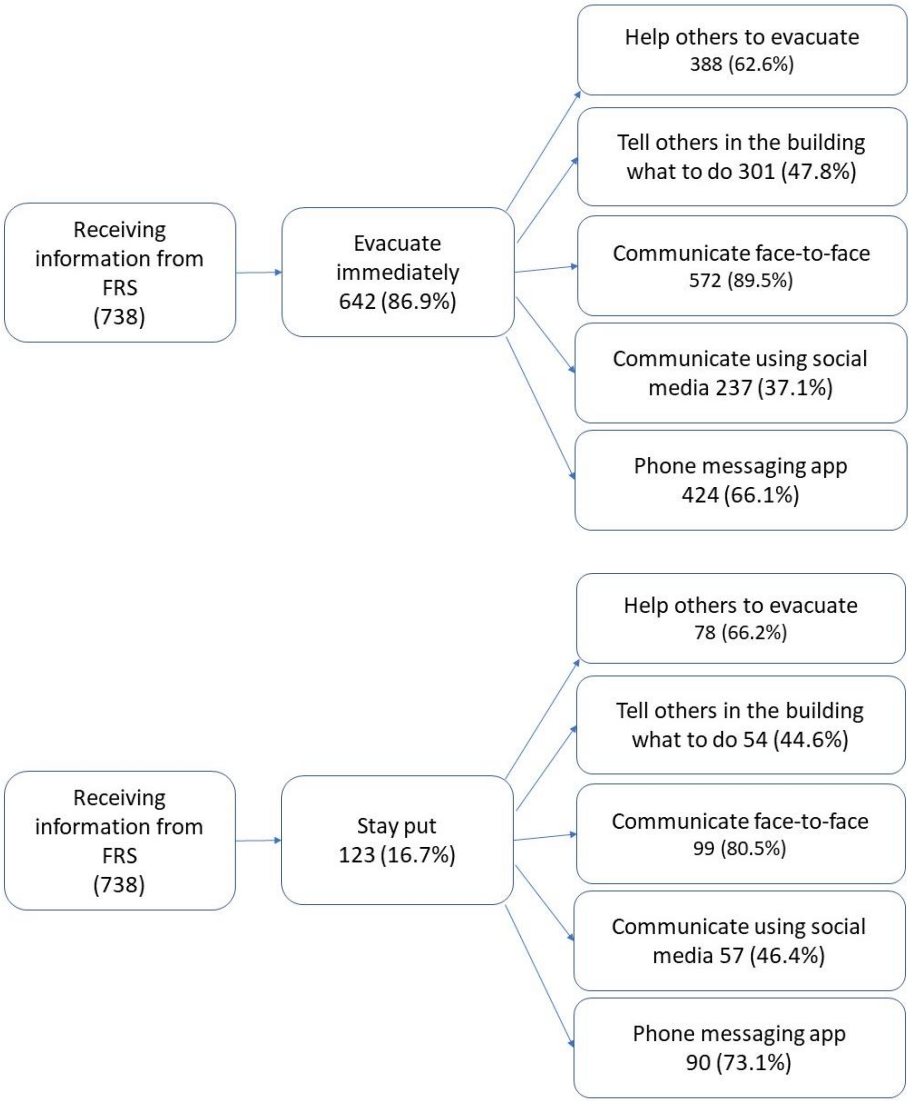


Figure B2-11 The sequence of events from importance of type of message received to actions taken, receiving information from FRS

B2-5.5.5 Likelihood to stay put

Results from the survey indicated whether residents would likely evacuate immediately or stay put in the event of being aware of a fire in their building depending on the location of their flat, such that:

- For those who live in the top area of their building, 116 (87.8%) said they would be likely or very likely to evacuate immediately, and 19 (14.4%) said they would be likely or very likely to stay put,
- For those who live in the middle area of their building, 268 (83.2%) said they would be likely or very likely to evacuate immediately, and 67 (21%) said they would be likely or very likely to stay put,
- For those who live in the bottom area of their building, 90 (86.6%) said they would be likely or very likely to evacuate immediately, and 16 (15.4%) said they would be likely or very likely to stay put.

An expectation might be that residents higher in a building may be more reluctant to travel a longer distance to the ground level. However, the findings suggest that the decision to evacuate immediately is not strongly influenced by the location of the residents.

B2-5.6 Conclusions

The analysis of sequential events will directly inform the evacuation modelling in **Objective A2** by providing the percentage of agents that select behaviours throughout the scenarios. For example, it shows how many residents would be likely to stay put or evacuate immediately, share information on social media, or support others. It is recognised however that the surveys are not able to extract every behavioural nuance that may be present in a way that will be able to be incorporated into the evacuation modelling. For example, the importance of behavioural triggers (fire alarm, neighbour information, FRS information) were asked independently of the questions about what behaviours would be taken. Therefore, the resident surveys do not account for the fact that someone may respond differently to an event depending on whether they were notified by a fire alarm, neighbour, or FRS. Such limitations will be partially addressed in the evacuation modelling by assigning different pre-evacuation delays to residents depending on how they were notified and also through the use of repeated simulations using statistical sampling methods. However, evacuation software tools have their own limitations in what level of behavioural interactions they are able to reproduce. A more detailed survey and having evacuation software that is able to incorporate complex behavioural interactions could be considered for future work in this area.

The results of the indirect effects on trust, social influence and expected support will not directly inform the modelling since such factors are not included in evacuation simulation software. However, they demonstrate the importance of how trust in the guidance and relations with the creators of guidance may impact adherence to the guidance. Moreover, the results show how group relations among residents are related to expectations of help from others and increased likelihood of following how other residents are responding. It suggests that group processes are important components in the extent to which residents follow the guidance and/or coordinate with others in emergencies.

APPENDICES

Appendix A. Study design principles

This appendix sets out the study principles prior to carrying out the interviews and surveys that was circulated to the Building Safety Regulator and Technical Steering Group panel members.

B2-A.1. Study 1: Interviews with fire and rescue service personnel

B2-A.1.1. Overview

Design: We will conduct individual interviews with at least 20 fire and rescue service personnel (across different roles such as protection officers, crew managers, group managers, people with experience of incident command, etc.) to explore their understanding of key factors impacting safe evacuations in high-rise and lower-rise residential buildings and (in)effective guidance (see Section 2.3 for the proposed interview questions). The interview schedule will be semi-structured to guide the conversation but allow sufficient space for participants to raise important issues and skip topics they may not want to discuss. We have selected individual interviews to allow for confidentiality and to explore individual experiences of assisting evacuations in more depth. We anticipate that all interviews will be conducted online using Skype, Teams, Google or Zoom due to COVID-19.

Recruitment: We aim to recruit participants through contacts in the Scottish Fire and Rescue Service, London Fire Brigade, and the National Fire Chiefs Council. Ideally, we would like to also recruit participants in the Greater Manchester area, Birmingham, and other regions which include high-rise residential buildings. **We welcome recommendations from the panel regarding any contacts within local fire and rescue services who can help us to gain participants.**

We will use contacts obtained by UClan during their interviews. We anticipate that snowball sampling (i.e., momentum-based sampling through individual contacts) will also take place between the fire and rescue service staff. We aim to achieve a representative gender balance in participants. The fire fighters should ideally have had prior experience of attending high-rise and lower-rise residential building evacuations, however we will specifically aim to recruit individuals who have managed this type of incident at junior to medium management levels.

Data protection: See Section B2-A.4.1.

Analysis plan: We will use Thematic Analysis[13] to identify key important themes for the respondents, particularly regarding FRS perception of underlying causes or difficulties which would impede residents' ability to follow guidance safely, as well as ideas to improve both guidance of how residents should respond in a fire and how to evacuate. We will identify patterns of (in)effective guidance and compare these to the current guidance given to occupants, and the interview responses from occupants in Study 2 to identify any commonalities or differences.

[13] Braun V, Clarke V. Using thematic analysis in psychology. Qualitative research in psychology. 2006 Jan 1;3(2):77-101. https://doi.org/10.1191/1478088706qp063oa

B2-A.1.2. Participant information sheet and consent form

Information Sheet for participants

Study title:	Perceptions of evacuation guidance in high-rise residential buildings
Principal Investigator:	Dr Anne Templeton
Researcher collecting data:	Dr Anne Templeton or Claire Nash

What is this document? This document explains what kind of study we are doing, what your rights are, and what will be done with your data. You should keep this page for your records.

Nature of the study. You are about to participate in a study which explores effective and ineffective guidance for evacuations of high-rise residential buildings. We will use a semi-structured interview to ask about your experiences of assisting high-rise building evacuations, and your views on current guidance for evacuations. The interview will be conducted online and video recorded so that we can create an anonymised transcription of the interview once the interview is complete. The interview should last between 45 minutes and 1 hour. Please do ask the researcher if you have any questions about this study.

Compensation. Participation is entirely voluntary.

Risks and benefits. There are no known risks to participation in this study. There are no tangible benefits to you, however you will be contributing to our knowledge about (in)effective evacuation guidance to identify avenues and barriers to safer evacuation.

Confidentiality and use of data. All the information we collect during the course of the research will be processed in accordance with Data Protection Law. In order to safeguard your privacy, we will never share personal information (such as names or age) with anyone outside the research team; if you agree and want to be contacted for future studies, we will add your contact details to our secure participant database. Your data will be referred to by a unique participant number rather than by name. We will store any personal data (e.g., audio/video recordings, signed forms) using the University of Edinburgh's secure encrypted storage service and on a password protected USB kept by the researcher. The video recordings (identifiable data) collected during this study will be deleted once the researcher has transcribed the interview (anticipated to take up to 4 weeks) and will be used for research purposes. With your permission, the non-identifiable anonymised data may be used for

research or teaching purposes, and may be shared with other researchers or with the general public (e.g., we may make it available through the world wide web, or use it in TV or radio broadcasts).

What are my data protection rights? The University of Edinburgh is a Data Controller for the information you provide. You have the right to access information held about you. Your right of access can be exercised in accordance Data Protection Law. You also have other rights including rights of correction, erasure and objection. For more details, including the right to lodge a complaint with the Information Commissioner's Office, please visit www.ico.org.uk. Questions, comments and requests about your personal data can also be sent to the University Data Protection Officer at dpo@ed.ac.uk.

Voluntary participation and right to withdraw. Your participation is voluntary, and you may withdraw from the study at any time up until the results of the study have been written up. To withdraw, you should contact the lead researcher Dr Anne Templeton by email at A.Templeton@ed.ac.uk and quote your unique identifier number that will be made during the study. If you withdraw from the study during or after data gathering, we will delete your data and there is no penalty or loss of benefits to which you are otherwise entitled.

If you have any questions about what you've just read, please feel free to ask, or contact us later. You can contact us by email at a.templeton@ed.ac.uk. This project has been approved by PPLS Ethics committee. If you have questions or comments regarding your rights as a participant, they can be contacted at 0131 650 4020 or ppls.ethics@ed.ac.uk.

If you have any questions about what you've just read, please feel free to ask them now.

Thank you for your help! Please complete the consent form on the next page.

Participant consent and agreement to data usage

Study title:	Perceptions of evacuation guidance in high-rise residential buildings
Principal Investigator:	Dr Anne Templeton
Researcher collecting data:	Dr Anne Templeton

PLEASE MARK EITHER 'YES' OR 'NO' FOR EVERY STATEMENT BELOW:

Consent for participation:	Yes	No
I have read and understood the Participant Information Sheet.		
Questions about my participation in this study have been answered satisfactorily.		
I am aware of the potential risks (if any).		
I am taking part in this research study voluntarily (without coercion).		
The anonymised data only may be shared in public research repositories.		
I consent to take part in the above study, including audio/video recording.		

Agreement to identifiable data usage requests:	Yes	No
I agree that recordings of my voice/face can be shared with other researchers in the research team		

Participant name

Today's date

B2-A.1.3. Debriefing sheet

Thank you for taking part in our study. This study was part of a larger body of work which aims to understand public evacuation behaviour. Specifically, we are focusing on the perceived clarity and effectiveness of the guidance, people's confidence in being able to follow the guidance, and identifying any barriers to safe evacuation. With this research, we hope to improve our understanding of public response in evacuations, and facilitate safe, clear, inclusive evacuation guidance for high-rise residential buildings.

If you have any questions about this research, please contact the lead researcher, Dr Anne Templeton, at a.templeton@ed.ac.uk.

B2-A.2. Study 2: Interviews with occupants of high-rise buildings

B2-A.2.1. Overview

Design: We will conduct focus group interviews with at least 40 occupants of high-rise residential buildings in targeted areas (ideally between 5-8 people per focus group). We will use semi-structured interviews to allow occupants to raise important issues that we do not already address in the interview schedule. We have chosen focus groups instead of individual interviews because they enable us to analyse collective meaning-making and decision-making, and crucially to identify sources of commonality and diversion among the participants' views. This is particularly relevant for evacuation research as it can showcase collective processes that may hinder safe evacuation.

The questions will explore the role of group processes and social influence in occupant perceptions of the guidance for evacuations and what to do in the event of a fire, relevant experience of evacuations and fire incidents in high-rise residential buildings, and perceived barriers to following the guidance A key issue will be establishing occupant understanding of the guidance for their building. Thus, we will endeavour to obtain the guidance for each building to assess how accurately the occupants understand the guidance, and to share it with the occupants if there are misunderstandings.

Recruitment: We anticipate that participant recruitment is one of the biggest challenges of this project and as such, we will work together with the technical steering group to recruit an anticipated 10-15 residents, and work with UClan, local authorities, housing associations, and local fire and rescue services to recruit the remaining residents of high-rise buildings. We will also post messages on resident notice boards of identified high-rise residential buildings, any relevant resident group forums connected with the fire and rescue services, and rely on snowball sampling among residents. We aim to achieve a representative gender balance in participants.

We aim to conduct focus groups with residents of the same buildings to better understand group processes within the building. We will aim to target buildings with diverse occupant populations to obtain a representative sample, but we appreciate this may not always be possible. To assist gaining a representative sample, we will conduct focus groups with occupants across buildings of varying size (lower vs high-rise), socio-economic status areas, and region size (e.g., towns, cities), and possibly cladding status. Participants must be over the age of 18 and be a current occupant of a high-rise residential building. Participants with prior traumatic experiences - or who are still heavily negatively impacted by prior experiences - of building evacuations will not be able to participate since the nature of the questions may raise sensitive memories for the participants.

Data Protection: The same data protection procedures will be used as in Study 1 (See Section B2-A.4.1).

Analysis plan: We will use Thematic Analysis[14] to establish themes across the focus groups. Key areas of focus will be:

- The role of group bonds and social influence in barriers to evacuations.
- Occupant understanding of the evacuation guidance for their building.
- Willingness to follow the guidance.
- Confidence in the guidance to ensure safety and confidence in the people making the guidance.
- Beliefs of how others would react.
- Identifying barriers for people with health conditions or impairments.

Particular attention will be paid to commonalities and differences across high-rise residential buildings and local jurisdictions areas. We will also interpret the data to determine complementary or contradictory data to the results of the interviews with fire and rescue service personnel in study 1.

[14] Braun V, Clarke V. Using thematic analysis in psychology. Qualitative research in psychology. 2006 Jan 1;3(2):77-101. https://doi.org/10.1191/1478088706qp063oa

B2-A.2.2. Participant information sheet and consent form

Information sheet for participants

Study title:	Perceptions of evacuation guidance in high-rise residential buildings
Principal Investigator:	Dr Anne Templeton
Researcher collecting data:	Dr Anne Templeton or Claire Nash

What is this document? This document explains what kind of study we're doing, what your rights are, and what will be done with your data. You should keep this page for your records.

Nature of the study. You are about to participate in a study which explores occupant perceptions of safety guidance in high-rise residential buildings. We are conducting semi-structured focus group interviews to ask you and other residents of your building about your views on current guidance for evacuations and what to do in the event of a fire, such as the clarity of the guidance, trust in those giving the guidance, and beliefs about barriers to safe evacuation. The interview will be conducted online and video recorded so that we can create an anonymised transcription of the interview once the interview is complete. The interview should last between 45 minutes and 1 hour. Please do ask the researcher if you have any questions about this study.

Compensation. You will be paid £15 for your participation in this study.

Risks and benefits. There are no tangible benefits to you other than payment for your time, however you will be contributing to our knowledge about safety guidance to identify avenues and barriers to safer evacuation. If you experience PTSD or still heavily affected by experience of a prior emergency evacuation or fire incident, then you cannot take part in this study due to the nature of the topics we will discuss.

Confidentiality and use of data. All the information we collect during the course of the research will be processed in accordance with Data Protection Law. In order to safeguard your privacy, we will never share personal information (like names or dates of birth) with anyone outside the research team; if you agree and want to be contacted for future studies, we will add your contact details to our secure participant database. Your data will be referred to by a unique participant number rather than by name. We will store any personal data (e.g., audio/video recordings, signed forms) using the University of Edinburgh's secure encrypted storage service and on a

password protected USB kept by the researcher. The video recordings (identifiable data) collected during this study will be deleted once the researcher has transcribed the interview (anticipated to take up to 4 weeks) and will be used for research purposes. With your permission, the non-identifiable anonymised data may be used for research or teaching purposes, and may be shared with other researchers or with the general public (e.g., we may make it available through the world wide web, or use it in TV or radio broadcasts)

What are my data protection rights? The University of Edinburgh is a Data Controller for the information you provide. You have the right to access information held about you. Your right of access can be exercised in accordance Data Protection Law. You also have other rights including rights of correction, erasure and objection. For more details, including the right to lodge a complaint with the Information Commissioner's Office, please visit www.ico.org.uk. Questions, comments and requests about your personal data can also be sent to the University Data Protection Officer at dpo@ed.ac.uk.

Voluntary participation and right to withdraw. Your participation is voluntary, and you may withdraw from the study at any time up until the results of the study have been written up and still receive payment. To withdraw, you should contact the lead researcher Dr Anne Templeton by email at A.Templeton@ed.ac.uk and quote your unique identifier number that will be made during the study. If you withdraw from the study during or after data gathering, we will delete your data and there is no penalty or loss of benefits to which you are otherwise entitled.

If you have any questions about what you've just read, please feel free to ask, or contact us later. You can contact us by email at a.templeton@ed.ac.uk. This project has been approved by PPLS Ethics committee. If you have questions or comments regarding your rights as a participant, they can be contacted at 0131 650 4020 or ppls.ethics@ed.ac.uk.

If you have any questions about what you've just read, please feel free to ask them now.

Thank you for your help! Please complete the consent form on the next page.

Participant consent and agreement to data usage

Study title:	Perceptions of evacuation guidance in high-rise buildings
Principal Investigator:	Dr Anne Templeton
Researcher collecting data:	Dr Anne Templeton

PLEASE MARK EITHER 'YES' OR 'NO' FOR EVERY STATEMENT BELOW:

Consent for participation:	Yes	No
I have read and understood the Participant Information Sheet.		
Questions about my participation in this study have been answered satisfactorily.		
I am aware of the potential risks (if any).		
I am taking part in this research study voluntarily (without coercion).		
The anonymised data only may be shared in public research repositories.		
I do not experience PTSD from a prior emergency evacuation or fire incident, nor am I still heavily negatively affected by a prior emergency evacuation or fire incident.		
I consent to take part in the above study, including audio/video recording.		

Agreement to identifiable data usage requests:	Yes	No
I agree that recordings of my voice/face can be **shared with other researchers in the research team**		

Participant name

Today's date

B2-A.2.3. Debriefing sheet

Thank you for taking part in our study. This study was part of a larger body of work which aims to understand public evacuation behaviour. Specifically, we focused on the perceived clarity and effectiveness of the guidance, people's confidence in being able to follow the guidance, and identifying any barriers to safe evacuation. With this research, we hope to improve our understanding of public response in evacuations, and facilitate safe, clear, inclusive evacuation guidance for high-rise buildings.

If you would like to learn more about the evacuation procedures in your building, you can find more information from the printed evacuation guidance in your building [e.g., in the main lobby], from the local Fire & Rescue Service, or from your Residents and Tenant's Association. If you feel distressed or uncomfortable due to a prior experience of an evacuation or fire incident then there are a number of people who can offer support. The first option is to contact your GP. Alternatively, there are services dedicated to supporting people who have been affected by emergencies. The British Red Cross have specially trained volunteers to provide emotional support and care for those affected by emergencies. You can contact The British Red Cross by calling 0344 871 11 11 or emailing contactus@redcross.org.uk. The Samaritans can also provide emotional support to people after emergencies. You can call the Samaritans free on 116 123 or email jo@samaritans.org, or visit the website at www.samaritans.org.

If you have any questions about this research, please contact the lead researcher, Dr Anne Templeton, at a.templeton@ed.ac.uk.

B2-A.3. Surveys with occupants of high-rise residential buildings

B2-A.3.1. Overview

Design: We will use an online survey that includes core questions of resident knowledge of existing safety guidance, trust in the guidance, confidence in being able to follow guidance, trust in the information source of the guidance, barriers to successful evacuation, the impact of any previous evacuations, and demographic information. The questions will be designed to quantify of the effects of the variables on behaviour, to inform the computational models later in the project.

Recruitment: We anticipate that participant recruitment is one of the biggest challenges of this project and as such we will aim to recruit and survey at least 600 occupants of high-rise residential buildings in the UK. 200 of the respondents will be targeted case studies to assess the impact of previous experience of fire evacuations; we will focus on both areas near where fires have occurred in high-rise residential buildings and areas remote from recent events. These participants will be recruited using the same methods as in Study 2. We will liaise with Optivo, Clarion,

UCLAN and other housing associations/local authorities to assist with resident recruitment. We also aim to utilise Facebook community groups to disseminate the research advert.

The remaining 400 participants will be recruited through Prolific Academic to obtain a representative sample across demographic categories shown to impact behaviour in emergencies, such as gender[15], disabilities[16], and ethnicity and socio-economic status[17]. The participant numbers are based on estimated power analysis for conducting structural equation modelling with our key variables, but we will not limit the study to 600 respondents should the opportunity arise to involve a larger sample, particularly if a larger sample is needed for the indirect paths in the model. Participants must be over the age of 18 and be an occupant of a high-rise residential building. Participants with prior traumatic experiences of building evacuations will not be able to participate.

Data protection: See Section B2-A.4.2.

Analysis: We will obtain quantified measures of building residents' user perceptions of and confidence in evacuation strategies and relevant fire safety measures in high-rise residential buildings. We will assess the effectiveness of different evacuation strategies for buildings considering our understanding of human behaviour, public perception and confidence. This will particularly focus on the expected impact of confidence, trust, and knowledge in guidance, and trust and confidence in the information source, to obtain the likelihood of the population being aware, willing, and able to follow evacuation guidance in a fire.

We anticipate analysing the data using structural equation modelling, a statistical analysis technique used to identify relationships between constructs and measured variables, to identify the key predictors of behaviour and the importance of each variable (e.g., confidence, knowledge) in adherence to the guidance. Thus, we will be able to quantify the survey responses to inform the behaviour model. We will use the results of the surveys to quantify the expected impact of each factor on

---

[15] Cahyanto I, Pennington-Gray L. Communicating hurricane evacuation to tourists: Gender, past experience with hurricanes, and place of residence. Journal of Travel Research. 2015 May;54(3):329-43. https://doi.org/10.1177/0047287513517418

[16] Hashemi M. Emergency evacuation of people with disabilities: A survey of drills, simulations, and accessibility. Cogent Engineering. 2018 Jan 1;5(1). https://doi.org/10.1080/23311916.2018.1506304

[17] West DM, Orr M. Race, gender, and communications in natural disasters. Policy Studies Journal. 2007 Nov; 35(4):569-86. https://doi.org/10.1111/j.1541-0072.2007.00237.x

evacuation behaviour. This information will be used to operationalise parameters in the computational simulations that will be developed later in the project.

B2-A.3.2. Participant information sheet and consent form

Information sheet for participants

Study title:	Perceptions of evacuation guidance in high-rise buildings
Principal Investigator:	Dr Anne Templeton
Researcher collecting data:	Dr Anne Templeton and Claire Nash

What is this document? This document explains what kind of study we're doing, what your rights are, and what will be done with your data. You should keep this page for your records.

Nature of the study. You are about to participate in a study which explores occupant perceptions of evacuation guidance in high-rise residential buildings. You will take part in an online survey which about your views on current guidance for evacuations, such as the clarity of the guidance, trust in those giving the guidance, and beliefs about barriers to safe evacuation. The study should last between 20-30 minutes. Please do ask the researcher if you have any questions about this study.

Compensation. You will be paid £4.50 for your participation in this study.

Risks and benefits. There are no known risks to participation in this study. There are no tangible benefits to you other than payment for your time, however you will be contributing to our knowledge about evacuation guidance to identify avenues and barriers to safer evacuation.

Confidentiality and use of data. All the information we collect during the course of the research will be processed in accordance with Data Protection Law. In order to safeguard your privacy, we will never share personal information (like names or dates of birth) with anyone outside the research team. Your data will be referred to by a unique participant number rather than by name. We will store the data using the University of Edinburgh's secure encrypted storage service and on a password protected USB kept by the researcher. With your permission, the non-identifiable anonymised data may be used for research or teaching purposes, and may be shared with other researchers or with the general public (e.g., we may make it available through the world wide web, or use it in TV or radio broadcasts).

What are my data protection rights? The University of Edinburgh is a Data Controller for the information you provide. You have the right to access information held about you. Your right of access can be exercised in accordance Data Protection

Law. You also have other rights including rights of correction, erasure and objection. For more details, including the right to lodge a complaint with the Information Commissioner's Office, please visit www.ico.org.uk. Questions, comments and requests about your personal data can also be sent to the University Data Protection Officer at dpo@ed.ac.uk.

Voluntary participation and right to withdraw. Your participation is voluntary, and you may withdraw from the study at any time up until the results of the study have been written up and still receive payment. To withdraw, you should contact the lead researcher Dr Anne Templeton by email at A.Templeton@ed.ac.uk and quote your unique identifier number that will be made during the study. If you withdraw from the study during or after data gathering, we will delete your data and there is no penalty or loss of benefits to which you are otherwise entitled.

If you have any questions about what you've just read, please feel free to ask, or contact us later. You can contact us by email at a.templeton@ed.ac.uk. This project has been approved by PPLS Ethics committee. If you have questions or comments regarding your rights as a participant, they can be contacted at 0131 650 4020 or ppls.ethics@ed.ac.uk.

If you have any questions about what you've just read, please feel free to ask them now.

Thank you for your help! Please complete the consent form on the next page.

Participant consent and agreement to data usage

Study title:	Perceptions of evacuation guidance in high-rise buildings
Principal Investigator:	Dr Anne Templeton
Researcher collecting data:	Dr Anne Templeton and Claire Nash

PLEASE MARK EITHER 'YES' OR 'NO' FOR EVERY STATEMENT BELOW:

Consent for participation:	Yes	No
I have read and understood the Participant Information Sheet.		
Questions about my participation in this study have been answered satisfactorily.		
I am aware of the potential risks (if any).		
I am taking part in this research study voluntarily (without coercion).		
The anonymised data only may be shared in public research repositories.		

B2-A.3.3. Debriefing sheet

Thank you for taking part in our study. This study was part of a larger body of work which aims to understand public evacuation behaviour. Specifically, we focused on the perceived clarity and effectiveness of the guidance, people's confidence in being able to follow the guidance, and identifying any barriers to safe evacuation. With this research, we hope to improve our understanding of public response in evacuations, and facilitate safe, clear, inclusive evacuation guidance for high-rise buildings.

If you would like to learn more about the evacuation procedures in your building, you can find more information from the printed evacuation guidance in your building [e.g., in the main lobby], from the local Fire & Rescue Service, or from your Residents and Tenant's Association. If you feel distressed or uncomfortable due to a prior experience of an evacuation then there are a number of people who can offer support. The first option is to contact your GP. Alternatively, there are services dedicated to supporting people who have been affected by emergencies. The British Red Cross have specially trained volunteers to provide emotional support and care for those affected by emergencies. You can contact The British Red Cross by calling 0344 871 11 11 or emailing contactus@redcross.org.uk. The Samaritans can also provide emotional support to people after emergencies. You can call the Samaritans free on 116 123 or email jo@samaritans.org, or visit the website at www.samaritans.org.

If you have any questions about this research, please contact the lead researcher, Dr Anne Templeton, at a.templeton@ed.ac.uk.

B2-A.4. Data protection

B2-A.4.1. Data protection guidelines for Study 1 and Study 2

We will obtain video recordings of the interviews and then transcribe them into an anonymised transcription using a pseudonym. The recordings will be stored on the University of Edinburgh GDPR compliant OneDrive and deleted once anonymised transcription of the interviews is completed. We will also note the county/borough in which participants work since some areas (i.e., Kensington and Chelsea) have previously experienced a high-rise building evacuation due to fire that may need to be considered during analysis. Only the lead researcher and research assistant will have access to the identifiable data and they will be shared through OneDrive. The participants will be made aware of this in the Information Sheet that they will be provided as part of the interview procedure.

All participants will create a unique identifier code that they can use when emailing the lead research or research assistant to have their data removed. Participants will be allowed to withdraw up until the point that the study is written up and this will be made clear in the Information Sheet.

B2-A.4.2. Data protection guidelines for Study 3

We will gain anonymised data about participants' understanding of current evacuation guidance, the perceived importance of the guidance, clarity of the evacuation guidance, confidence in ability to follow guidance, and perceptions of the source providing the information. We will also collect information about health conditions or impairments that may hinder evacuations to consider these during data analysis. Data will be stored and shared using the University of Edinburgh's OneDrive, and additionally stored on a password protected USB. The anonymised survey data will be stored using Excel for longevity.

All participants will create a unique identifier code that they can use when emailing the lead research or research assistant to have their data removed. Participants will be allowed to withdraw up until the point that the study is written up and this will be made clear in the Information Sheet.

Appendix B. Interview schedule for fire and rescue service personnel

1. We are interested to find out your level of understanding in relation to current guidance for residents of high-rise buildings in the event of a fire incident. Could you please tell me what you know about this topic?
2. I'm interested to hear your views on current guidance for residents of high-rise buildings in the event of a fire incident. Could you please tell me which parts about evacuation guidance are most effective?
    a. Note: We may provide the participant with sample evacuation guidance that is representative of the guidance in their region and ask about it specifically.
    b. Prompt: What do you think of this guidance?
    c. What do you think makes it effective?
3. We are interested in your current understanding of the 'stay put' guidance in the event of a fire for residents of high-rise buildings. Could you please tell me how you know about this guidance?
    a. Prompts: Could you please tell me more about how well you think residents understand the 'stay put' guidance? Why do you think that? Could you please give any examples of this?
    b. Could the stay put guidance be improved? If so how?
4. We are trying to identify the effectiveness of the evacuation guidance so that we can see if there is any room for improvement. Are there any parts of the guidance that you think could be improved?
    a. Prompts: [if the participant answers yes] Which parts do you think could be improved? Can you tell me why? Based on your experience, how do you think the evacuation guidance could be improved?
5. As shared amenity spaces become more common in residential buildings, we are interested in what you think the fire safety guidance should be for residents using these shared amenity spaces?
    a. Prompt: Why do you think that? Are there any parts of the evacuation guidance around shared amenity spaces which needs to be improved?
6. What, in your opinion, do you think could make evacuations safer?
    a. Prompts: Could you please tell me more? Why do you think that? Could you please give me an example?

7. Are there any challenges that you as a fire fighter have experienced in facilitating safe evacuation?
    a. Prompts: [if the participant answers yes] Could you tell me about the challenges? What do you think was the reason for those challenges?
8. Could you tell me about any additional considerations you encounter when assisting people with vulnerabilities during evacuations?
    a. Prompts: For example, considerations for people with mobility impairments.
    b. Those with mental health considerations.
    c. The elderly.
9. How do you think occupants of high-rise residential buildings typically respond to evacuation guidance?
    a. Prompts: What makes you say that? Why do you think that is?
10. Have you been involved in any resident engagement activities (such as giving fire safety training or evacuation drill/guidance)? If so, can you tell us what they entailed?
    a. Prompts: How did the residents respond? What do you think the relations are usually like between FRS and residents? (positive or negative?)
    b. What makes you say that?
11. Do you think residents who do engage with the FRS have better views of the FRS or are more likely to follow fire safety guidance during a real fire incident?
    a. Prompt: Can you give me an example of why you think this?
12. Can you tell me how frequently you think residents should engage with fire safety and evacuation guidance'
    a. Prompts: Why do you think this is the appropriate amount of engagement?
    b. If engagement levels are low, what do you think would promote engagement?
13. I'm also interested in your opinions on current Fire and rescue operational procedures for fire related evacuations. Which parts of this training/procedure is most effective?
14. Can you tell me if you know about "Approved Document B", which is design guidance for building regulations? If so, how you think construction and design of buildings impact on safe evacuation procedures?

15. Is there anything important about the evacuation or design guidance that you think we haven't covered, that you would like to discuss?
    a. Prompt: [if the participant answers yes] Can you tell me more?

Appendix C. Interview schedule for residents of high-rise residential buildings

1. We are interested in hearing your views on the guidance for your building about how to respond in the event of a fire. Can you please tell me about the current guidance for your building in the event of a potential fire?
    a. Prompt: what does the guidance say?
    b. Prompt: (Show then either building or local specific guidance) Have you seen anything similar to this in your building?
2. Imagine if you were to experience a fire in your building. What would influence your decision about how to react?
    a. Prompt: What do you think would make you aware of the fire? [what were the cues which lead to your awareness?]
    b. Prompt: [If any have been in a fire in your building] How did you react?
    c. Prompt: Why do you think you would act that way?
    d. Prompt: How do you think you would react if you received information by text message? From a neighbour at your door? Or a fire alarm vs visible flames?
3. How do you think others in the building would react in a fire?
    a. Prompt: [If any have been in an evacuation of the building] How did the others react?
4. Some high-rise buildings operate ‘stay put’ guidance during a fire incident. Can you tell me what you understand by ‘stay put’?
    a. Prompt: Are there particular parts about the ‘stay put’ guidance that are clear or unclear? Can you tell me which parts and why you find them clear/unclear?
    b. Prompt: Imagine there was a fire in your building, do you think the ‘stay put’ guidance would be easy to follow?
    c. If not, what would stop you following the ‘stay put’ guidance?
5. We are also interested in hearing your views on the evacuation guidance for your building. According to the building emergency plan, what should you do in the event of a fire?

    a. Prompt: What actions does the plan suggest you should take?

6. How clear do you find the evacuation plan?
    a. Prompt: Are there particular parts that are clear? Unclear? Can you tell me which parts? Why do you find them clear/unclear?
7. How confident would you feel about following the plan?
    a. Prompt: Can you tell me why? What would make you feel confident/unconfident?
8. Who do you think creates this plan?
    a. Prompt: What do you think of them? What makes you say that?
9. Imagine you had to evacuate this building, what do you think are the main challenges you might experience?
10. Do you have a shared amenity space in your building?
    a. [If yes] Imagine if you were in a shared amenity space (provide examples if necessary) how do you think you would respond if there was a fire incident in the building.
    b. Prompt: would being in this space change the way you evacuated? Why do you think you would respond this way?
11. Would anyone here face any particular difficulties following the evacuation guidance?
    a. Prompt: Can you please tell me more about the difficulty? How would this change the way you evacuate?
12. Evacuations from high-rise residential buildings can be particularly challenging for people with health conditions or impairments, especially without the use of a lift. What is the guidance, or what do you think the evacuation guidance should be, for people with health conditions or impairments?
    a. Prompt: For example, considerations for people with mobility issues?
    b. The elderly?
    c. Those with mental health considerations?
    d. Prompt: [if anyone has conditions or impairments that would affect their evacuation] How do you feel about the effectiveness of the evacuation guidance for you? Is there anything that you would change/improve?
13. We want you to now think about your own engagement with fire safety training and guidance. Thinking about the fire safety guidance, how well do you engage with it?

a. What barriers are there to engaging with these materials, and how do you think your levels of engagement could be improved?

14. What do you think of FRS?
15. Is there any way that you think the evacuation guidance for your building could be improved?
16. Is there anything about the guidance that we haven't covered which you want to speak about?

Appendix D. Online survey for residents of high-rise residential buildings

In order to anonymise your data, we need a code which is unique to you. In the box below please write the day and month of your birthday as well as the last 3 digits of your postcode. For example: 3103 1ET

_____

In this section, we will ask you some questions about your current environment and neighbours. Please read the questions carefully and select the response that best matches your opinion.

Do you live in a high-rise building that has six or more floors?

- ○ Yes
- ○ No

How well do you know your neighbours?

- ○ I don't know them at all
- ○ I don't know them well
- ○ Unsure
- ○ I know them well
- ○ I know them very well

I feel a sense of unity with my neighbours

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

I feel a sense of togetherness with my neighbours

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

I think of myself and my neighbours as part of the same social group

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

I think the actions of others would impair my ability to evacuate during a fire incident

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

I think that the others in my building would help me during a fire incident

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

There is great togetherness between the neighbours

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

In your opinion, would a resident in your building support another resident to keep safe in a fire incident?

- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

We would like to know your level of understanding of the **fire safety guidance** in your building. In the textbox below, please state what you should do in your building in the event of a fire. If you are unsure of what to do in the event of a fire, please write 'unsure'.

_____

Some buildings operate stay put guidance in a fire incident. We would also like to know your level of understanding of the **stay put guidance** in your building. In the textbox below, please state what your understanding of **stay put guidance** is. If you are unsure about the stay put guidance, please write 'unsure'.

_____

The guidance below is an extract taken from the London Fire Brigade 'Home Fire Safety Guide':

"If your flat is being affected by fire or smoke and your escape route is clear: Get everyone out, close the door and walk calmly out of the building. Do not use the lift. Call 999, give your address, the number of your flat and state which floor the fire is on.

If there is a fire or smoke inside your flat and your escape route is NOT clear: It may be safer to stay in your flat until the fire brigade arrives. Find a safe room, close the door and use soft materials to block any gaps to stop the smoke. Go to a window, shout “HELP, FIRE” and call 999. Be ready to describe where you are and the quickest way to reach you.

If there is a fire in another part of the building: Purpose-built blocks of flats are built to give you some protection from fire. Walls, floors and doors can hold back flames and smoke for 30 to 60 minutes. You are usually safer staying put and calling 999. Tell the fire brigade where you are and the best way to reach you. If you are within the common parts of the building, leave and call 999"

If your escape route is blocked by fire, what should you do?

- ○ Find a different route
- ○ Stay put until the fire brigade arrives
- ○ Pick up your valuables

The following questions will ask you about the guidance to stay put that was suggested in the London Fire Brigade extract in the previous page.

The stay put guidance about how to react in the event of a fire provides sufficient practical information about what to do

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

The stay put guidance gives me enough information about how to react safely

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

I understand what actions are expected of me in the event of a fire

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

The stay put guidance will help to keep residents safe

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

The stay put guidance will help residents to respond efficiently in the event of a fire

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

In your opinion, how likely is a fire in your building?

- ○ Very unlikely
- ○ Unlikely
- ○ Neither likely nor unlikely
- ○ Likely
- ○ Very likely

In my building, there are sufficient measures in place to allow safe response to a fire

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

The building is equipped to enable residents to safely follow the stay put guidance

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

I trust the designers of the stay put guidance know how to keep residents safe in the event of a fire

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

The people who wrote the stay put guidance are competent in their knowledge of fire safety

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

I am willing to follow the stay put guidance

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

If there was a fire incident, I would adhere to the proposed stay put guidance

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

I feel able to follow the actions proposed in the stay put guidance

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

I would be concerned that others in my buildings would not follow the stay put guidance

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

The average resident in my building would follow the stay put guidance

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

The average resident in my building would intervene if they saw another person not following the stay put guidance

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

Most residents in my building think it’s important to follow the stay put guidance

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

How likely is it that you would stay put during a fire incident?

- ○ Very unlikely
- ○ Unlikely
- ○ Unsure
- ○ Likely
- ○ Very likely

How likely is it that other residents would stay put during a fire incident?

- ○ Very unlikely
- ○ Unlikely
- ○ Unsure
- ○ Likely
- ○ Very likely

How clear do you think the stay put guidance for a fire incident is?

- ○ Very unclear
- ○ Unclear
- ○ Unsure
- ○ Clear
- ○ Very clear

Please rate the extent to which you agree or disagree with each statement

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I believe my building is built to be safe in the event of a fire	○	○	○	○	○
I believe that staying put is safer than exiting the building in the event of a fire	○	○	○	○	○

We are interested in what might influence your decision to stay put in a fire incident. Please rate the following statements on how much or how little they would influence your decision.

	Not at all	A little	A moderate amount	A lot	A great deal
I would want to evacuate	○	○	○	○	○
I would want to stay put	○	○	○	○	○
I would follow what others were doing	○	○	○	○	○
I would follow the fire safety guidance	○	○	○	○	○
I would follow instructions for fire rescue services	○	○	○	○	○
I am unsure how I would respond	○	○	○	○	○

We would like to know your level of understanding of what you should do in your building when you are asked to **evacuate in the event of a fire**. In the textbox below, please describe what the guidance for your building says you should do to **evacuate in the event of a fire**. If you are unsure of what to do in an evacuation situation in the event of a fire, please write 'unsure'.

_____

You are about to be asked a series of questions about the evacuation guidance in your building. When answering the following questions, please answer as best you can based on your knowledge of the evacuation guidance that is in place for your building.

The evacuation guidance for my building provides sufficient practical information about what to do when leaving the building

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

The evacuation guidance for my building gives me enough information about how to leave the building safely

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

I understand what actions are expected of me during an evacuation of my building

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

The evacuation guidance will help to keep residents safe

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

The evacuation guidance will help residents to evacuate efficiently

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

In my building, there are sufficient measures in place to allow safe evacuation

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

My building is equipped to enable residents to evacuate safely

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

I trust the creators of the evacuation guidance know how to keep residents safe in the event of an evacuation

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

I feel that the creators of the evacuation guidance are open about the actions they have taken to keep residents safe

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

The people who wrote the evacuation guidance are suitably competent in their knowledge of evacuation safety

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

I am willing to follow the evacuation guidance

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

If there was an evacuation, I would adhere to the proposed evacuation guidance for my building

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

I would be concerned that others in my buildings would not follow the evacuation guidance

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

The average resident in my building would follow the evacuation guidance

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

The average resident in my building would intervene if they saw another person not evacuating

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

Most residents in my building think it’s important to follow the evacuation guidance

- ○ Strongly disagree
- ○ Somewhat disagree
- ○ Neither agree nor disagree
- ○ Somewhat agree
- ○ Strongly agree

The following questions will ask you about how you would respond in the event of a fire in your building. Please try to answer as realistically as possible.

If you became aware of a fire in your building, how likely would you be to perform the following actions.

	Very unlikely	Unlikely	Unsure	Likely	Very likely
Evacuate immediately	○	○	○	○	○
Stay in place	○	○	○	○	○
Wait for more information	○	○	○	○	○
Continue your activities as normal	○	○	○	○	○
Start preparing to evacuate	○	○	○	○	○

The following question lists a selection of factors which might alert you to a fire. How important would each factor be when deciding how to respond to the fire?

	Very unimportant	Unimportant	Neither unimportant or important	Important	Very important
Seeing flames	○	○	○	○	○
Seeing smoke	○	○	○	○	○
Seeing others evacuating	○	○	○	○	○
Receiving instructions from the police	○	○	○	○	○
Receiving instructions from Fire and Rescue Services	○	○	○	○	○
Family telling you how to respond	○	○	○	○	○
Friends telling you how to respond	○	○	○	○	○
Neighbours telling you how to respond	○	○	○	○	○
Fire alarms	○	○	○	○	○
Outdoor siren	○	○	○	○	○

How unlikely or likely would you be to perform the following actions before evacuating?

	Very unlikely	Unlikely	Neither likely or unlikely	Likely	Very likely	Not applicable
Reunite with family members	○	○	○	○	○	○
Reunite with friends	○	○	○	○	○	○
Reunite with neighbours	○	○	○	○	○	○
Prepare others in the home to evacuate	○	○	○	○	○	○
Secure your home (e.g., turning off the gas)	○	○	○	○	○	○
Pack items to take with you	○	○	○	○	○	○
Tell others inside the home what they should do	○	○	○	○	○	○
Tell others in the building what they should do	○	○	○	○	○	○

Help others prepare to evacuate	○	○	○	○	○	○
Seek information from others in your home	○	○	○	○	○	○
Seek information from others in the building	○	○	○	○	○	○

How unlikely or likely would the following actions be in preventing you from evacuating?

	Very unlikely	Unlikely	Neither unlikely or likely	Likely	Very likely	N/A
Being told by fire and rescue services to stay put	○	○	○	○	○	○
Seeing others not evacuating	○	○	○	○	○	○
Wanting to protect your home	○	○	○	○	○	○
Needing to take care of another person	○	○	○	○	○	○

Page Break

If you wanted to communicate about the fire with others, how likely would you be to use the following modes of communication?

	Very unlikely	Unlikely	Neither unlikely or likely	Likely	Very likely
Email	○	○	○	○	○
Face-to-face	○	○	○	○	○
Social media	○	○	○	○	○
Telephone call	○	○	○	○	○
Text message	○	○	○	○	○
Phone messaging app (e.g., WhatsApp)	○	○	○	○	○

End of Block: Imagine

Start of Block: Shared amenity spaces

It is becoming more common for residential buildings to have a shared amenity space, such as a shared living area, kitchen, gym or laundry. Do you have a shared amenity space in your building?

- ○ No
- ○ Unsure
- ○ Yes

How frequently do you use these spaces?

- ○ Never
- ○ Rarely
- ○ Occasionally
- ○ A moderate amount
- ○ Very frequently

Imagine you were in a shared amenity space and became aware of a fire in the building. How likely would you be to perform the following actions?

	Very unlikely	Unlikely	Neither unlikely or likely	Likely	Very likely
Stay put until told to evacuate	○	○	○	○	○
Evacuate the building straight away	○	○	○	○	○
Return to my residence	○	○	○	○	○
Seek advice from others	○	○	○	○	○
Follow others	○	○	○	○	○

Is the fire safety guidance in your building clear on what to do in a fire emergency if you are in a shared amenity space?

- ○ No
- ○ Unsure
- ○ Yes

How frequently do you engage with the fire safety guidance for your building?

- ○ Never
- ○ Rarely
- ○ Occasionally
- ○ A moderate amount
- ○ Very Frequently
- ○ Only when I moved into the premises

Have you or others in your household taken any of the following measures to protect your residence? Please select all that apply.

- No measures have been taken
- Flat fire alarms / sounders are fitted
- I have an emergency bag prepped and by the door
- I have home fire safety equipment such as a fire blanket/extinguisher
- I don't know

Do you have a household emergency plan in case of a fire incident?

- ○ Yes
- ○ No
- ○ I don't know

If yes, what is the ultimate goal of this household emergency plan?

- ○ The goal is to stay put until told otherwise
- ○ The goal is to evacuate immediately
- ○ I don't know or remember

Please write your age in the box below

_____

Which of the following options best describes your gender identity?

- ○ Male
- ○ Female
- ○ Transgender Male
- ○ Transgender Female
- ○ Non-binary
- ○ Prefer not to say

How would you define your ethnicity?

_____

Do you reside at the top of your building, in the middle or near the bottom?

- ○ Top
- ○ Middle
- ○ Bottom
- ○ Prefer not to say

How long have you lived in high-rise buildings?

- ○ Less than 1 year
- ○ 1-2 years
- ○ 3-4 years
- ○ 5-10 years
- ○ 10 or more years
- ○ I don't know or don't remember

How long have you lived in your current high-rise building?

- ○ Less than 1 year
- ○ 1-2 years
- ○ 3-4 years
- ○ 5-10 years
- ○ 10 or more years
- ○ I don't know or don't remember

Do you currently own or rent your flat?

- ○ I currently own
- ○ I currently rent
- ○ I don't know

Is English your first language?

- ○ Yes
- ○ No
- ○ Prefer not to say

What is your first language?

_____

Do you have a health condition, impairment, or learning difficulty?

- ○ Yes
- ○ No
- ○ Prefer not to say

If yes, please tick the relevant box

- ○ Visual (Blind/partially sighted
- ○ Hearing (Deaf/ hearing impairment)
- ○ Wheelchair/mobility problem
- ○ Personal support needs
- ○ Mental health difficulty
- ○ 'Unseen' disability: Asthma, Diabetes, Epilepsy
- ○ Multiple disabilities
- ○ Disability other than listed

Do you have any dependents?

- ○ Yes
- ○ No
- ○ Prefer not to say

Overall, how easily do you think your dependent(s) would be able to evacuate on their own?

- ○ Extremely easy
- ○ Somewhat easy
- ○ Neither easy nor difficult
- ○ Somewhat difficult
- ○ Extremely difficult

Appendix E. Demographic information for FRS participants

	Gender	Age	Location	Rank / Role
1	Male	45	Greater Manchester	Group Manager
2	Male	41	Staffordshire	Crew Manager
3	Male	39	Staffordshire	Fire Engineer
4	Male	46	Kent	Fire Fighter
5	Female	46	West Sussex	Senior Fire Inspection Officer
6	Male	44	Tyne and Wear	Group Manager
7	Male	48	Norwich	Station Manager
8	Male	24	Warwick	Crew Commander
9	Male	42	Salford	Crew Manager
10	Male	47	Bolton	Watch Manager
11	Male	51	Greater Manchester	Station Manager
12	Male	45	Staffordshire	Station Manager
13	Male	52	Humberside	Station Manager
14	Male	31	Suffolk	Watch Manager
15	Male	34	Greater Manchester	Watch Manager
16	Male	51	Newcastle under Lyme	Watch Manager
17	Male	45	Ipswich	Station Commander
18	Male	50	West Sussex	Group Commander

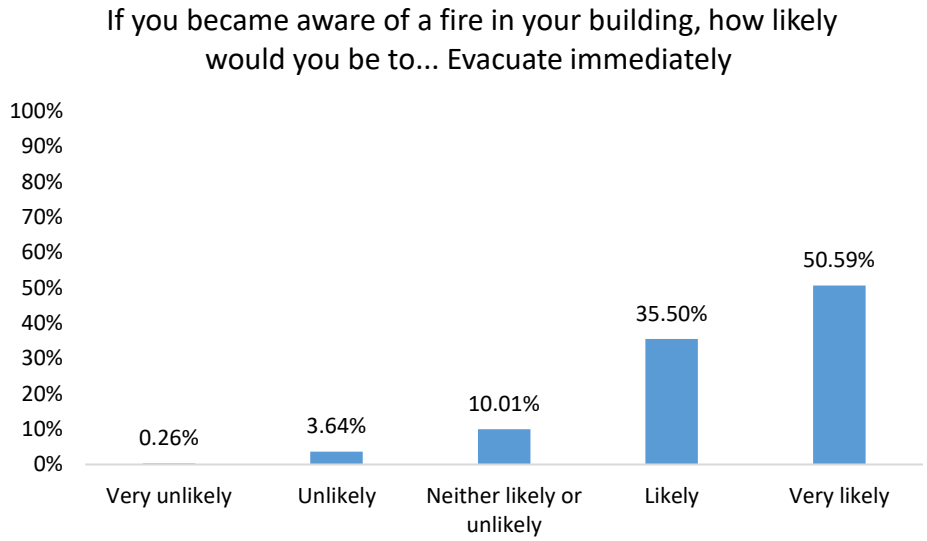
19	Male	46	Staffordshire	Fire Fighter
20	Female	31	Kent	Fire Safety Inspector
21	Male	54	Suffolk	Station Manager
22	Male	44	Gloucestershire	Fire Safety Inspector
23	Male	48	Preston	Crew Manager

Appendix F. Demographic information for residents

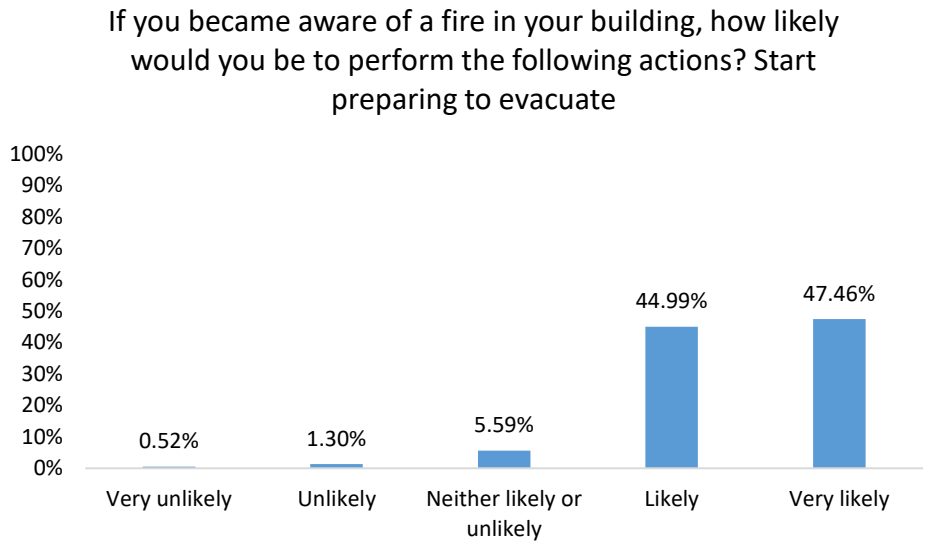
	Focus group number	Gender	Age	Location	No of floors in building	Position in building
1	FG1	Male	NA	Manchester	21	Upper
2	FG1	Male	27	London	5	Lower
3	FG2	Male	27	Aberdeen	7	Lower
4	FG2	Male	30	London	11	Upper
5	FG3	Male	27	Leeds	9	Middle
6	FG3	Female	30	Reading	5	Lower
7	FG3	Female	NA	Manchester	19	Lower
8	FG4	Female	39	Manchester	18	Lower
9	FG4	Male	31	Manchester	8	Lower
10	FG4	Female	33	Manchester	19	Lower
11	FG4	Female	36	Birmingham	16	Upper
12	FG5	Female	42	Manchester	5	Upper
13	FG6	Female	59	London	7	Middle
14	FG6	Female	25	Sheffield	7	Lower
15	FG6	Female	74	London	12	Upper
16	FG6	Female	36	Edinburgh	7	Lower
17	FG7	Female	32	London	6	Upper
18	FG8	Female	32	Salford	7	Middle

19	FG8	Male	31	Birmingham	20	Upper
20	FG9	Male	NA	London	7	Upper
21	FG9	Male	56	Leicester	9	Upper
22	FG9	Male	35	London	7	Lower
23	FG10	Female	32	Bristol	7	Middle
24	FG10	Male	30	Glasgow	11	Upper
25	FG10	Female	31	Birmingham	6	Middle
26	FG10	Male	67	Ipswich	4	Lower
27	FG10	Male	73	Portishead	7	Upper
28	FG11	Male	30	Liverpool	7	Middle
29	FG11	Female	30	Birmingham	16	Middle
30	FG12	Male	38	Glasgow	21	Lower
31	FG12	Female	24	Manchester	9	Middle
32	FG12	Male	34	Glasgow	25	Upper
33	FG13	Female	27	Ipswich	7	Middle
34	FG14	Male	70	Rochdale	16	Upper
35	FG14	Male	32	Birmingham	16	Upper
36	FG15	Female	25	London	10	Upper
37	FG15	Female	23	London	10	Upper
38	FG15	Female	38	London	9	Lower
39	FG16	Female	24	London	10	Upper
40	FG16	Female	24	Edinburgh	15	Lower

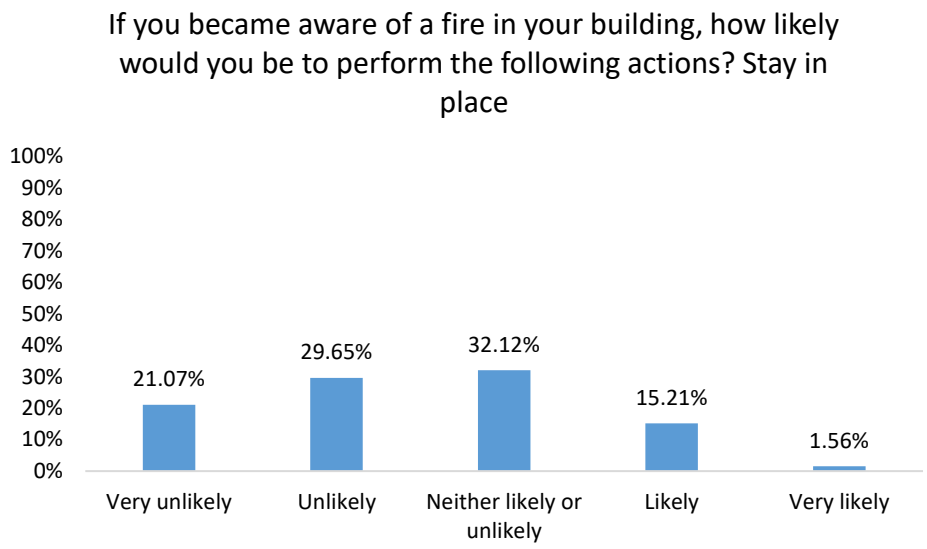
Appendix G. Selected results from resident survey



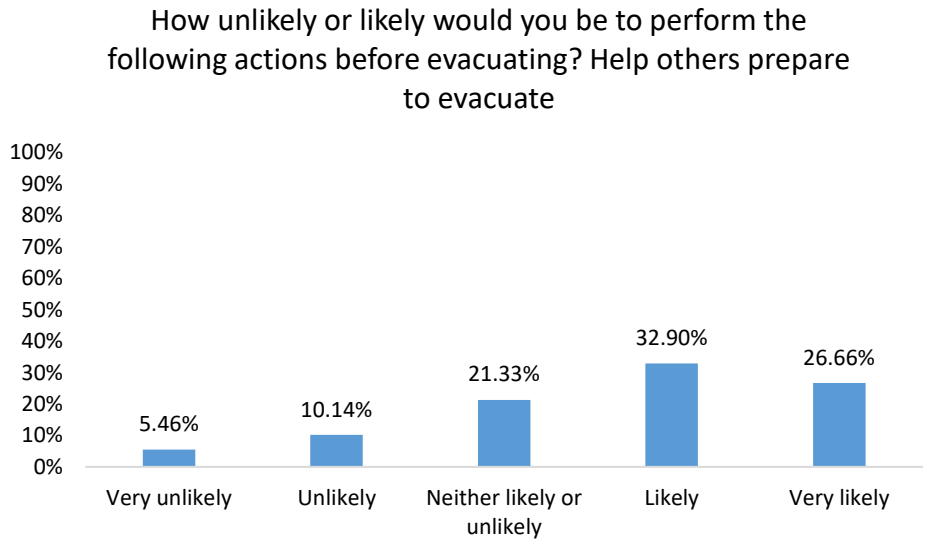
Very unlikely = 2, Unlikely = 28, Neither unlikely or likely = 77, Likely = 273, Very likely = 389



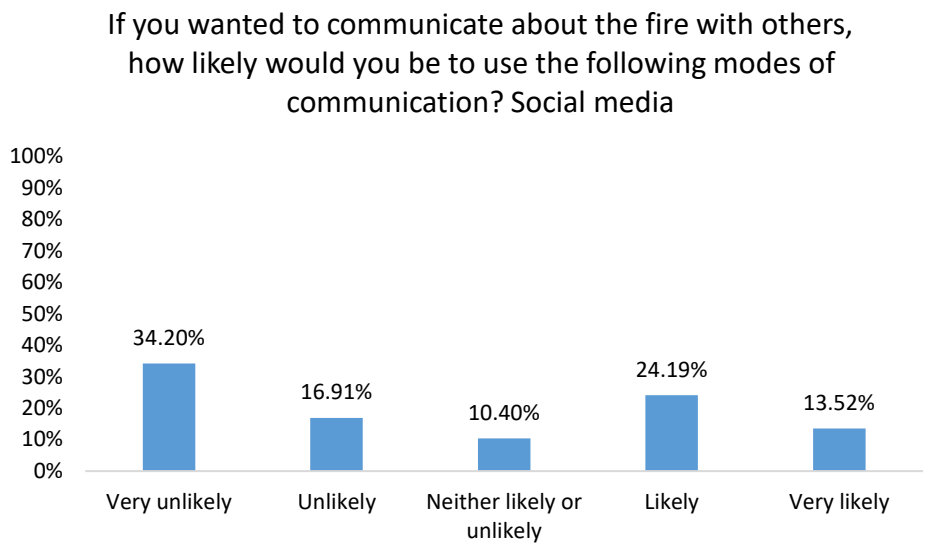
Very unlikely = 4, Unlikely = 10, Neither unlikely or likely = 43, Likely = 346, Very likely = 365, Did not respond = 4



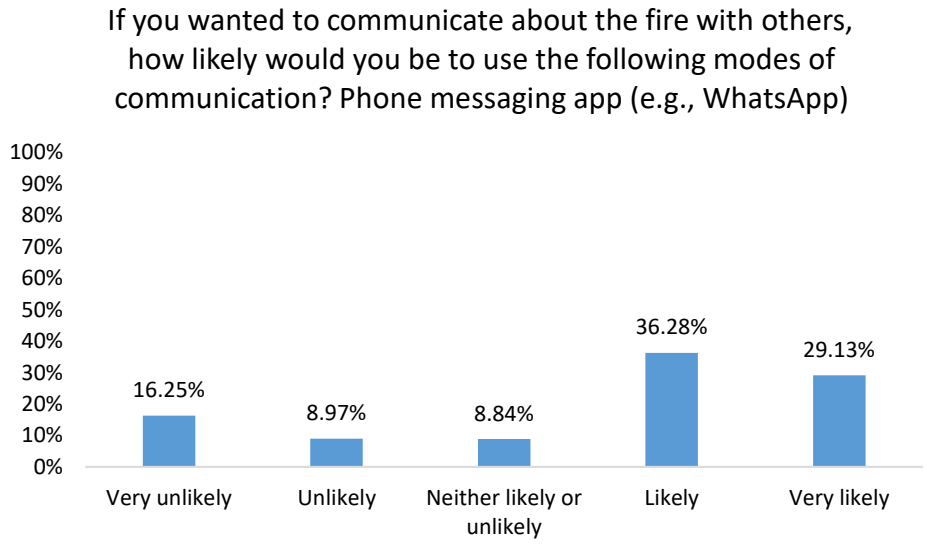
Very unlikely = 162, Unlikely = 228, Neither unlikely or likely = 247, Likely = 117, Very likely = 12, Did not respond = 3



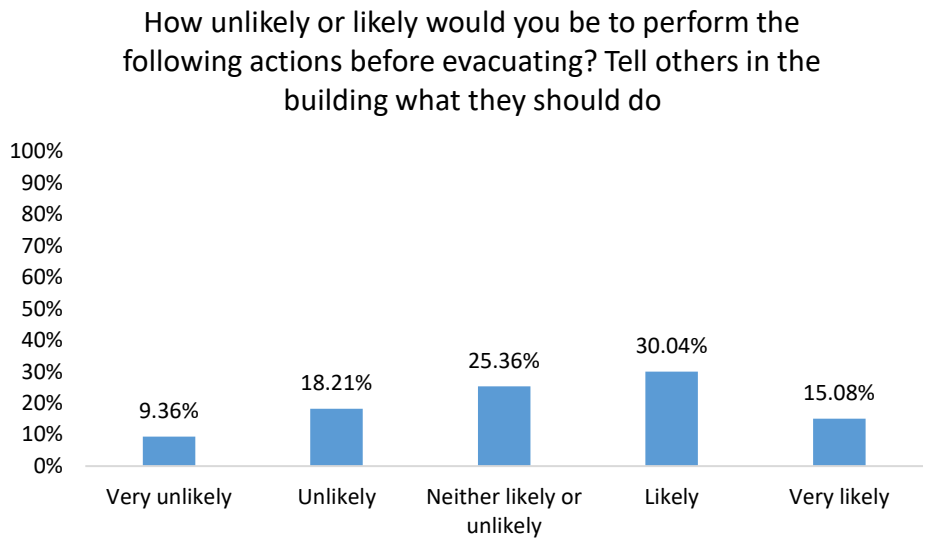
Very unlikely = 42, Unlikely = 78, Neither unlikely or likely = 164, Likely = 253, Very likely = 205, Did not respond = 27



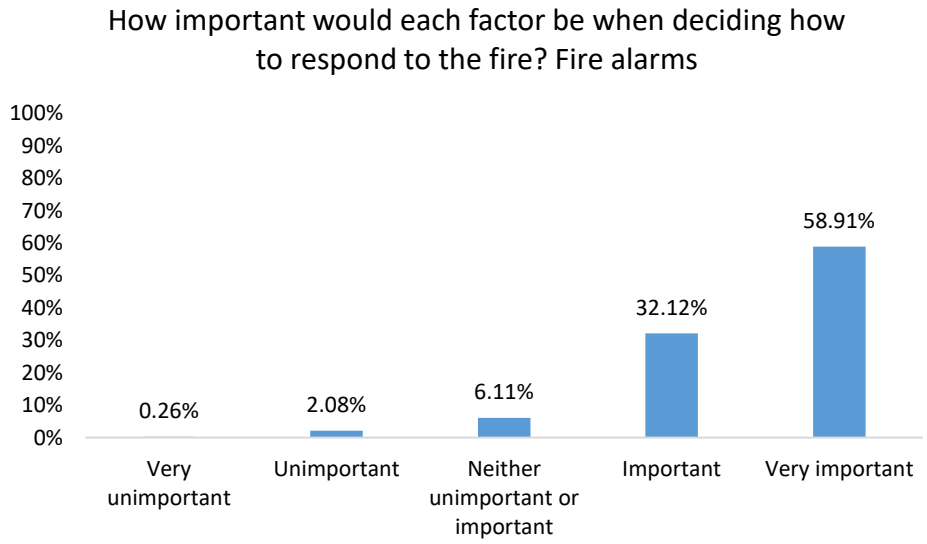
Very unlikely = 263, Unlikely = 130, Neither unlikely or likely = 80, Likely = 186, Very likely = 104, Did not respond = 6



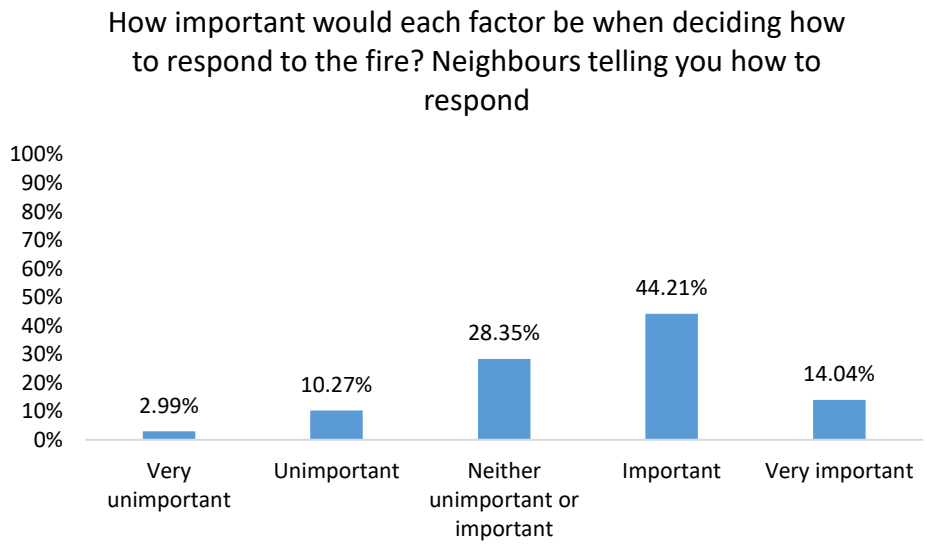
Very unlikely = 125, Unlikely = 69, Neither unlikely or likely = 68, Likely = 279, Very likely = 224, Did not respond = 4



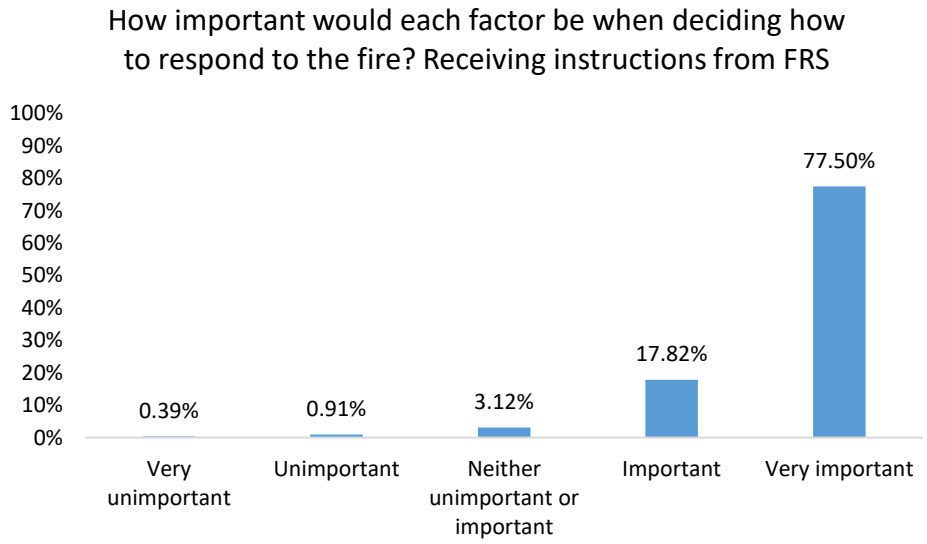
Very unlikely = 72, Unlikely = 140, Neither unlikely or likely = 195, Likely = 231, Very likely = 116, Did not respond = 15



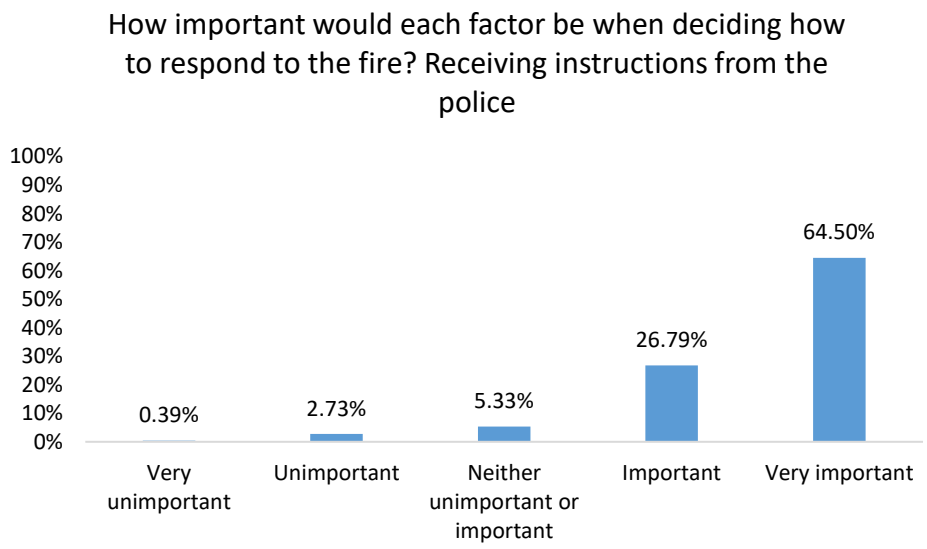
Very unimportant = 2, Unimportant = 16, Neither unimportant or important = 47, Important = 247, Very important = 453, Did not respond = 4



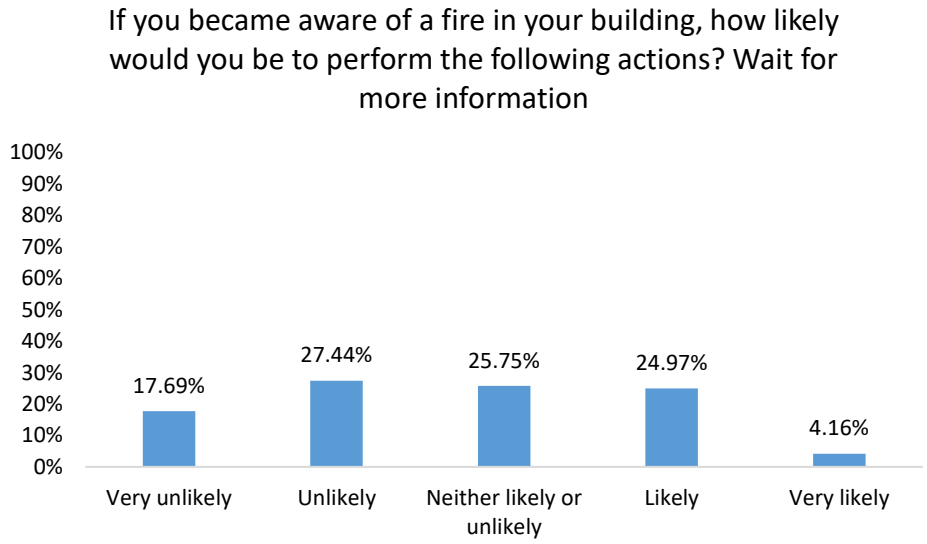
Very unimportant = 23, Unimportant = 79, Neither unimportant or important = 218, Important = 340, Very important = 108, Did not respond = 1



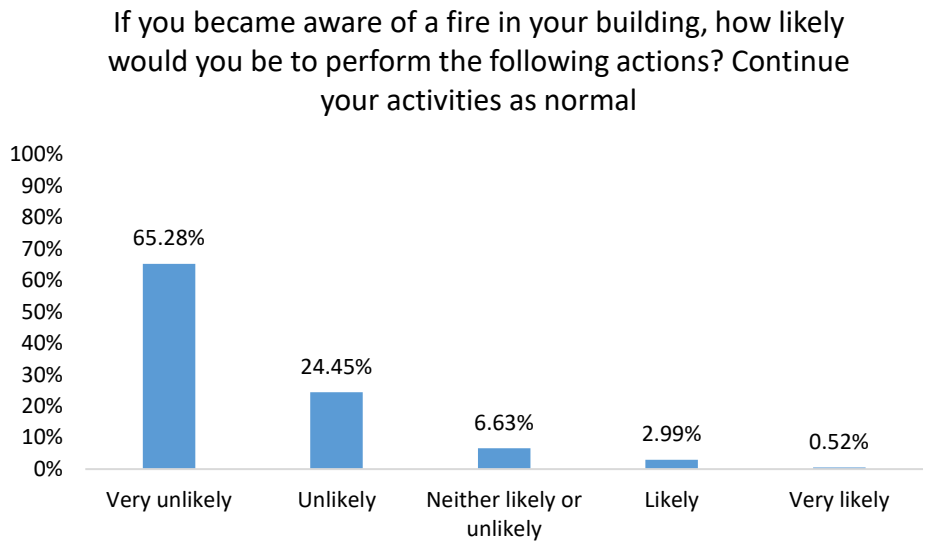
Very unimportant = 3, Unimportant = 7, Neither unimportant or important = 24, Important = 137, Very important = 596, Did not respond = 2



Very unimportant = 3, Unimportant = 27, Neither unimportant or important = 41, Important = 206, Very important = 496, Did not respond = 2



Very unlikely = 136, Unlikely = 221, Neither unlikely or likely = 198, Likely = 192, Very likely = 32



Very unlikely = 502, Unlikely = 188, Neither unlikely or likely = 51, Likely = 23, Very likely = 4, Did not respond = 1