# How far does government communication change customer decision-making and consumer sentiment in periods of panic buying?

## Executive Summary (Abstract):

Most people were acquainted with panic buying during the COVID-19 pandemic by the excessive buying of certain products. This type of herd mentality and behaviour is known to exhibit in times where there is perceived scarcity and anticipated regret that is expedited by communication from the government and media. Using three surveys incorporating government messaging; no communication, good communication and bad communication, this report hypothesises that government communication allays consumers fear which has a direct impact that instils an inclination behaviour to panic buy. Survey data was collected from 76 participants in 2022 after the COVID-19 pandemic that assessed the impact on purchasing behaviour of similar accounts to government messaging that tried to defuse panic buying behaviour. Analysis of these results, by deploying an independent samples t-tests, showed that the nature of government communication had a significant impact on consumer's behaviour. Furthermore, negative consumer sentiment was generated irrespective of what communication was issued. This report expands on the current contribution of this field of research and helps to instigate possible government policy recommendations and solutions that will help stakeholders in the future of ever prevalent panic buying episodes.

# 1. Introduction

Panic buying, notably during the COVID-19 pandemic, has become pertinent to the patterns of modern-day consuming. Consumer sentiment consensus has been driven through the vehicle of social media platforms, or other instant and widespread communication means (Indartoyo et el. 2020, p. 6). Social media has often facilitated growing fear, stockpiling, and consumption displacement when specific goods experience a perceived change in availability (Hall et el. 2021, p. 114). The COVID-19 pandemic provides a unique opportunity to study consumer behaviour as there is more information available for panic buying spending patterns which can be studied and evaluated. Furthermore, from what has been widely exhibited, panic buying during the pandemic has also been unprecedented. As panic buying is a novel issue, there is a lack of comprehensive literature and studies which make panic-buying a field of knowledge that governments and stakeholders still need to refine appropriate responses to. Creating appropriate responses for panic buying periods must be improved to diminish the negative impacts for supermarkets and consumers.

There is a notion that the reaction for both real and perceived dangers associated with uncertainty of supply can be affected by messaging from the government (Chua et el. 2021). Government communication therefore has an intrinsic connection to the concept of panic buying. The psychology and behaviour of consumers and the influence that the government has on this behaviour is not completely understood in relation to these episodes and there are very few existing studies of economic scholarly literature (Keane & Neal, 2021). Due to its 'panic' emphasis, most studies miss government communication and focus instead on policies and intervention. Highlighting the importance of government communication as a factor, communication appears to be central to connect the public and policy decision makers for collaboration and collective actions like intervention public involvement, engagement for policy establishment and initiatives (Kreps and Kim, 2020, p. 404). The quality of government communication can greatly influence panic buying during emergencies and disasters as message framing in the precepts of; transparency, civic engagement, and risk communication, are vital for fostering empowerment (Hyland-Wood et el. 2021, p. 3, 5). These factors can instil consumer's perception and can result in an increase consumption capacity (Hao et el. 2020).

Most panic buying episodes are in the fallout of rare unforeseen events, but it is likely to become increasingly more ubiquitous in nature as an overconsuming mentality can be wired to consumer's behaviour (Hori & Iwamoto, 2020). Furthermore, as raw materials get scarcer, policy and government communication will become imperative to control scarce supply so panic buying issues do not pervade. Therefore, studying consumers decision-making and sentiment in periods of panic can help understand the causes of panic and repercussions for governments.

The extent and nature of government communication intended to manage customer decision-making and consumer sentiment in periods of panic buying can also have various external impacts on stakeholders. During the COVID-19 pandemic supermarkets had to adapt to meet demand spikes by implementing purchasing quotas and adopt more active supply chain management. This also prompted supermarkets to limit the number of items a customer could buy, restrict store opening hours and adjust return policies (Prentice et el. 2020, p. 135). Inflicting on firms' profitability and productivity. Long queues and excessive buying meant that some consumers were excluded from being able to purchase certain essential goods. Stock-outs were particularly costly for vulnerable groups like the elderly and the disabled for whom shopping can be challenging (Keane & Neal, 2021, p. 8).

At present, there is no literature that analyses panic buying with an assessment of the impact of government communication. By studying consumer psychology, government communication, decision-making and consumer sentiment, this thesis documents several key contributions made to the fields of research into panic buying.

This study contributes to current literature by using a confluence of greater theoretical visions and data analysis to create an appropriate method to assess the panic buying attitudes of consumers with response to government messaging. Which will aim to suggest implementations for governments, supermarkets, policy makers and local officials that minimise panic buying and utilise the most optimal responses, while also recommending concepts for future research.

## 2. Literature Review

With the absence of significant and comprehensive literature that studies the impact of government communication in a sufficient capacity during periods of panic buying. This study draws comparable literature that includes antecedents of panic buying together with assessments made of nuanced government messaging. Such messaging consists of announcements from local officials, government policies (like price rationing), or government messaging in the catalyst of media coverage. The main five papers discussed in this section analyse the link between consumer panic with an external vehicle, normally an information distributor, that theorises understanding the link between media information dissemination and contribution that this has on consumer panic behaviour. Chua et el (2021) explores consumer's perception theory and draws on confidence with the government whereas Coleman et el's (2022, p. 7) paper is the only study that involves the UK's withdrawal from the European Union and assesses the impact that media communication has as an expediting device. The House of Common's (2020, p. 3) report on COVID-19 focusses on the government's necessary actions to respond to the impact that the COVID-19 pandemic had on the disruption of food supply systems in the UK, combined with the public and industry's own reactions to the threat. Keane & Neal (2021, p. 86) also assemble data on government policy announcements but is different as it uses daily COVID-19 cases for 54 countries and consumer panic. Kreps and Kim's (2020) paper studying government communication in the USA is significant and can be directly compared with Chua et el's (2021, p. 2) study. The latter explores panic buying in just one country; Singapore, identified to be one of the most uncertainty avoidant countries in the world. As well as the impact of cultural differences between the countries in these studies, Singapore is likely to have communication advantages being just 0.01% the size of the USA.

The papers discussed all identify the different determinants of consumer panic. Following Coleman et el's (2022, p. 2) study, how food supply and demand was portrayed by the British media and governments, impacted consumer panic buying activity. Which can be used to generate data around product trends and frequency. Similarly, the role of communication on behaviour is also covered by Kim & Kreps' (2020, p. 399) argument, that effective government communication performs a major role in informing key public audiences. This is further supported by Hao et el's (2020, p. 469) study which utilises shopping behaviour to better understand the triad of; online supermarkets hoarding,

government policy, and supply chain risk. The House of Commons (2020, p. 6) announced an inquiry supply chain risk through a survey on COVID-19 undertaken to assess whether the measures announced by the government to mitigate the disruptions arising from the pandemic were proportionate, effective and timely. Their hypothesis aims to debunk the panic buying concept by suggesting that increased buying was a predictable response to more home meals. On the other hand, Chua et el's (2021, p. 2) study objective is in-depth analysis of the psychology of panic buying. It aims to expand the theoretical contributions of anticipated regret and perceived scarcity, with the health belief model and study their interrelationships. The anchoring theory is that the facets of the model cause perceived scarcity and anticipated regret which in turn cause panic buying. Whilst these various studies analyse different facets of panic buying determinants. The similarity in their scope means that they can be used to ascertain the impact of; government communication in the context of COVID-19.

Out of the papers analysed, Keane & Neal's (2021, p. 88) and Coleman et el (2022, p. 3) employed secondary data from content analysis around search terms. The former paper uses Google search data on relevant terms from January to April 2020, attributing panic to related search terms and assessing its correlation to government policy with suitable econometrics. The latter screens newspaper (Daily Mail, Guardian, and the Metro) search terms and transposes the identified 506 articles into time series data over the period January 2015 to January 2020. This analysis creates better understanding about how past announcements of government policy correlated with panic. Notably, Keane & Neal (2021, p. 89) identified a frequent input term; 'toilet paper' in its panic index, a serious stock-out situation that has arose during the COVID-19 pandemic. Kreps and Kim's (2020, p. 400) empirical systems theory critically analyses case studies of government communication during the COVID-19 pandemic by identifying problems and suggesting health risk communication strategies. The House of Commons (2020, p. 6) and Chua et el's (2021, p. 1) papers try and surface such problems both by collecting primary data from online survey questionnaires both taken in April 2020. The House of Commons survey encompasses feedback from an adverse range of over 5,500 respondents. Compared to the 508 Singapore respondents surveyed in Chua et el's, whose survey is based on nodes of the expanded Health-Belief model.

House of Commons (2020, p. 52) report ascertained that supermarkets did a better job in adapting to the new onset of conditions created by the pandemic and concluded there should

be better government communication to reduce the panic buying response. Collated from past studies, Hyland et el, (2021, p. 8) proposed communication approaches should gain public trust to harness public cooperation and sustain behaviours, underpinned by transparency and increased civic engagement. The lack of faith in the government can be explained in Chua et el's (2021, p. 5) paper. The study found that perceived scarcity is influenced by the vulnerability consumers perceive themselves having due to their lack of confidence in the government, leading to the overestimated probability of danger and underestimated possibility of help. However, the study concluded that the level of risk perception varies from individual to individual. Kreps and Kim (2020, p. 405:406) found information was dictated firstly by media dissemination or shared through a homogenous group, which in turn, can be elevated by a lack of governmental communication. Amongst the trinity of studies, information overload in Kreps and Kim, (2020, p. 406) contradictory social media messages in Chua et el's (2021, p. 16) and Hyland et el's, (2021, p. 7) all motivated panic or added complexity. Conversely, Coleman et el's (2022, p. 7) findings could not elucidate what impact mixed messaging had on human behaviour, with the evidence showing it was often the act of panic buying itself, rather than disruption to the food supply, that results in product shortages at the consumer-level. This conflicts with the House of Common's hypothesis that deduced the lack of supply was due to supply chain disruption rather than the direct result of consumer behaviour. Keane & Neal's (2021, p. 96) results couple with Chua et el's (2021) research, showing that if a government increases internal restrictions by 1 (on a 0–5 scale), for example by closing schools or restricting gatherings, it causes the panic index to increase by roughly 13% on the same day, followed by a greater increase on the second day and then a gradual decline. Similarly, results from Hao et el (2020, p. 465:468) found significance at a 1% level in both regressions; showing the interdependence of e-commerce and offline shopping, consumers with higher income and who are unprepared tend to be more concerned about a potential food shortage, however only the former have a stronger will to stockpile.

The collated literature found that there was a congruence between the nature of government intervention and panic buying, but there are aspects that still need research. Using the research from these articles alone it cannot be ascertained what part media plays in generating demand; heavily uncertain countries may be more sensitive to this affect and empirical case studies can be more visceral than accurate quantitative data. However, there are symmetries across the significant difference in the locations of studies, as there is a

consensus across the research that the development of low-quality governmental communication can facilitate panic. Thus, these nascent cognitive functions with governmental messaging, are ripe for further speculation.

On reflection, there are significant limitations of each study. The perception of scarcity has a stronger impact in more densely populated areas, as well as regions that are heavily reliant on trade (Hao et el. 2020, p. 463). Using Chua et el's findings, this may heighten a greater perception of scarcity and may trigger stronger anticipation of regret if consumers do not panic buy while they still can. As well as this, it is important to consider population demographics, as a worker's occupation may influence panic buying responses. There is a possibility that an essential worker needing to work long hours may panic buy very differently from those with the flexibility to work from home (Chua et el. 2021, p. 22). To draw meaningful conclusions, a wide demographic profile is needed to be considered, broader than the clientele of newspaper readers (Coleman et el, 2022). A detailed education map is a factor that can infer occupation type and income level without soliciting intrusive questions. The existing research on the panic buying issue is still relatively limited so research is not completely comprehensive for this literature's analysis. Moreover, most of the research articles studied focussed on the impact of media or change of government policy (such as lockdowns) rather than assessing the importance of government communication. There are also issues concerning the accuracy of various survey results, the House of Commons' (2020, p. 52) survey was self-selecting which may have generated more negative results. It is important that surveys should be solicited to unbiased participants, so a self-selection bias is not generated from different groups.

## 3. Data and Information

3.1. *Synthesis of Theory*

For this study, three different types of government communication will be employed to verify how and what communication impacts panic the most: No communication, Good communication, Bad communication and its relationship with control variables. These three types will be used to ascertain how varied types of communication effect customer decision-making and what is the best course of action for future governments. As concluded above from the synthesis of the literature review section. This analysis will be further developed to collate additional demographic data using a demographic form consisting of detailed demographic profiles relevant to participant's age with a detailed examination of education that can infer income and level of occupations. Which are more likely to be concerned about shortages.

Using findings from the literature review, demonstrating the logic of motivation for panic buying can be explained by the first node of the panic buy concept which is the unprecedent event. This is the first prerequisite for panic buying, positive government messaging then acts to reduce perceived scarcity, so consumers do not panic buy. Adopting Chua et el's (2021, p. 18) findings, it is hypothesised that good government communication has a direct effect on perceived scarcity and anticipated regret which in turn, has a positive effect on consumer perception of limited availability. There is an assumption in this assertion that there is a feedback relationship with media – governments can influence media communication and media can influence government communication because of information overload and its complexity. Including conflicting messaging, media presence, consumer sentiment based on other consumer's shopping habits and types of government communication. The fallout of panic buying is mainly concerned by consumer sentiment which is the feedback from consumers and is their reporting reactions of panic buying.

Extrapolating these types of communication with past studies, the first hypothesis outlined below aims to answer the research question in a complete way. It is assumed that low-quality (i.e 'bad') information from the government will tend to facilitate panic from consumers. Therefore, the assumption that ('good') information from governments actively aids consumers. Thus, for this study:

**Hypothesis 1 (H1). –** *Good communication will act to deter panic buying more than bad communication and no communication*

Consumers who have access to media information may be easily influenced by government communications so that they rationalise panic buying (Indartoyo et el. 2020). Younger persons may not need to stockpile as they have a lower incidence of contracting COVID-19 and therefore can shop more frequently. Affluent participants (or better educated individuals) and who are unprepared tend to concern more about the food shortage and may have a higher propensity to stockpile. Based on these findings the second hypothesis is drawn:

**Hypothesis 2 (H2). –** *Respondents that fit a different demographic profile will respond differently.*

Due to the level of risk perception varying from consumers, found in Kreps and Kim (2020, p. 405) there may be a divergence of response with Bad Communication more than Good Communication. Therefore, the third hypothesis confers:

**Hypothesis 3 (H3).** – *To expect a higher variance among worse government communication, as participants react differently.*

The impact of conflicting messages from governments and media could not be ascertained. Most papers analysed concluded that contradicting media will act to create more panic. Therefore, the next hypothesis will aim to explore this further by assessing the impact that good government communication will have when it contradicts social media messaging. Also based on **H2** it is assumed that conflicting messages will create more varied responses from participants.

**Hypothesis 4 (H4).** – *Good government communication, while contradicting other media, will have a more negative effect on the panic response more so than no communication.*

The aim of the feedback from the survey question on Consumer Sentiment is to analyse consumers attitude that the questions do not capture. This is expected to be negative as excluding other consumers from purchasing goods, especially those of the less able is likely to create frustration from others.

> **Hypothesis 5 (H5).** – *Panic buying will generate a negative attitude from all consumers irrespective of any communication*

*3.2. Elements of Measurement*

To analyse the precedent of the research question, three surveys will be implemented to assess the impact of none, good, and bad government communication. The survey will involve similar frames of question with additional passages relevant to specific government messaging.

Implementing a method that exemplifies consumer-based behaviour; the study will include responses of participants in answer to questions about the COVID-19 panic buying period with a survey question that pertains to the nodes of perceived scarcity, capacity, consumer sentiment and conflicting messages (Chua et el. 2021, p. 2).

Comparing the response of these surveys will enable the exploration of the relationship between the variables of interest; the independent variable – communication from the government and the dependent variable – the severity of panic.

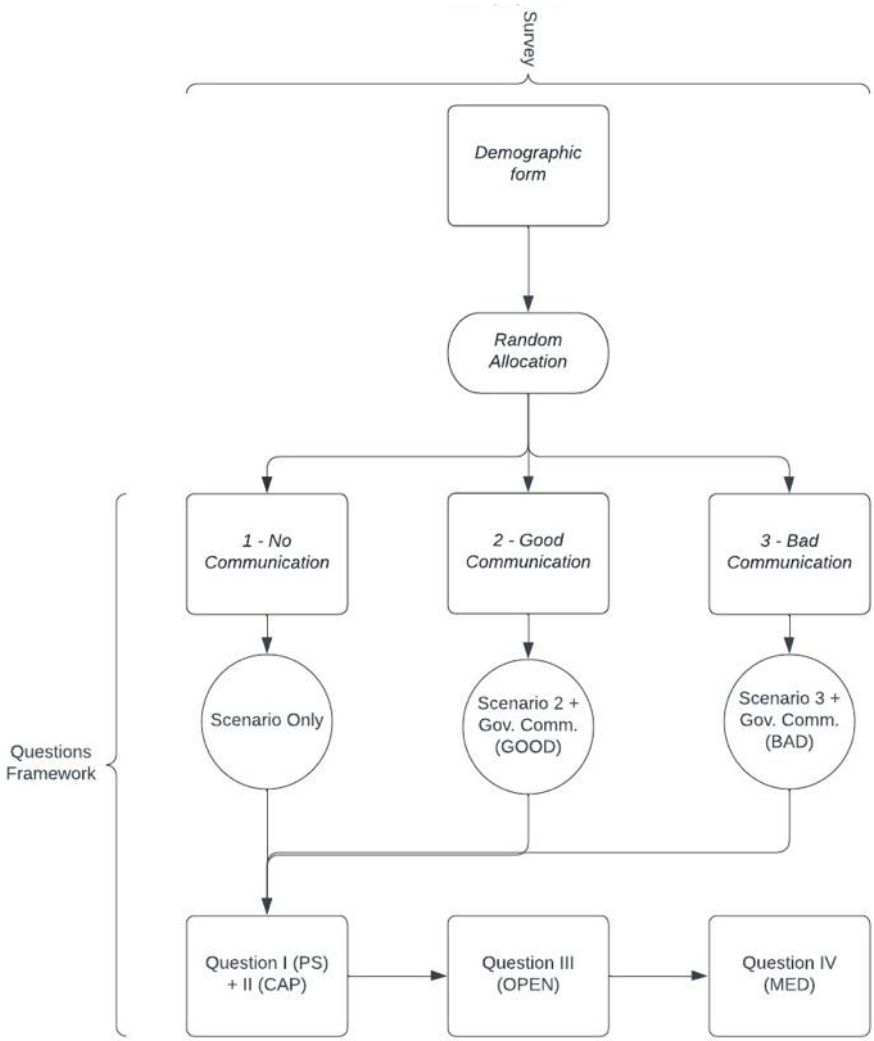
To construct a perception of scarcity that elicits a participant's panic responses, the four main measurement elements were used; creating a scenario of perceived scarcity, capacity of products purchased, using open-ended questions that required text entries without static references, in order that participants could express their own opinions, and based on Kreps and Kim's (2020, p. 405) thesis, whether the respondent's reply in the catalyst of media information increases panic. This will provoke attitudes and subjective states as respondents will be asked to report their actions. Answers were based on a quantifiable 4-point Likert (1932) scale range from 1 (less severe) to 4 (more severe), on the other hand, qualitative results can be review by *NVIVO* coding.

The original frame of questions remains unchanged in each variation as the question frame is derived from the first survey question(s) which is no communication and includes no new passages. To assess the action with government messaging the following amendments were made to the original question frame: Good Communication survey included real statements from the UK government that aimed to discourage panic buying activity and the Bad Communication survey included real statements from the UK governments that conflicted with media and made no attempt to discourage panic.

Toilet roll was identified by Keane & Neal (2021, p. 89) to be a significant phrase or symbol associated with panic buying. Although the level of anticipated regret has been valid to increase with perceived perishability Chua et el (2021, p. 10). Selecting this as a product differs from the research, but it is aligned with other research that indicates that non-perishable items like 'bottled water' have a higher propensity to be stockpiled as they do not spoil (Pan et el. 2020, p. 2371). Because of the ability to stockpile toilet roll, when respondents are asked about this product over others it is expected to create a greater panic-stimulated responses.

*3.3. Survey Administration*

The three surveys consisted of seven questions in three sections. The first section introduces the participant to the Data Participation Invitation, Information and Consent Question. This outlines the aim of the research, the purpose of collecting primary data, how anonymity is safeguarded, which is confidential and non-attributable, survey length and the result of uncollected data. The second section assembles the demographic profile for participants consisting of detailed answers of education and age. Lastly, the third section consists of four questions subject to the measurement criteria outlined in Section (3.1.). Table (3.0) shows each question and answer in detail, each question was given an ID for the subject they were researching.




*Note – Question I+II are under one node as they use the same scenario when other questions did not.*

*Figure 3.2.* – Flowchart of the Survey

Figure (3.2.) depicts the flow of the survey; a random allocation of survey questions was automatically assigned to participants after the demographic form.

**Table 3.0.** Survey Construction

| | Question I | | | |
|---|---|---|---|---|
| Element | Field | ID | Value | Answer |
| Perceived Scarcity | S1 - There is a panic buying response from consumers for the purchase of toilet roll and similar substitutes. Reports show empty shelves, hundreds of consumers navigating packed lanes and long queues. From the responses below, how likely are you to react ? | PS1 | 1 | Are you indifferent to this? |
| | | | 2 | Do you feel like you are missing out? |
| | | | 3 | Does this incentivise you to buy products? |
| | | | 4 | Do you feel the need to buy more than you require? |
| | Field | | | Answer |
| | S2 - There is a panic buying response from consumers for the purchase of toilet roll and similar substitutes. Reports show empty shelves, hundreds of consumers navigating packed lanes and long queues. Local officials and industry associations make statements to remind people that all products are locally manufactured and there are plenty of supplies. From the responses below, how likely are you to react ? | PS2 | 1 | Are you indifferent to this? |
| | | | 2 | Do you feel like you are missing out? |
| | | | 3 | Does this incentivise you to buy products? |
| | | | 4 | Do you feel the need to buy more than you require? |
| | Field | | | Answer |
| | S3 - There is a panic buying response from consumers for the purchase of toilet roll and similar substitutes. Reports show empty shelves, hundreds of consumers navigating packed lanes and long queues. The government has declared the COVID-19 pandemic a national emergency. From the responses below, how likely are you to react ? | PS3 | 1 | Are you indifferent to this? |
| | | | 2 | Do you feel like you are missing out? |
| | | | 3 | Does this incentivise you to buy products? |
| | | | 4 | Do you feel the need to buy more than you require? |
| | Question II | | | |
| Element | Field | ID | Value | Answer |
| Capacity of products purchased | S1 - Q2 - How much of the product do you think you would buy in this scenario ? | CAP1 | 1 | Normal amount |
| | | | 2 | Twice as much |
| | | | 3 | More than three times as much |
| | | | 4 | Buy as much to fill your trolley |
| | Field | | | Answer |
| | S1 - Q2 - How much of the product do you think you would buy in this scenario ? | CAP2 | 1 | Normal amount |
| | | | 2 | Twice as much |
| | | | 3 | More than three times as much |
| | | | 4 | Buy as much to fill your trolley |
| | Field | | | Answer |
| | S1 - Q2 - How much of the product do you think you would buy in this scenario ? | CAP3 | 1 | Normal amount |
| | | | 2 | Twice as much |
| | | | 3 | More than three times as much |
| | | | 4 | Buy as much to fill your trolley |
| | Question III | | | |
| Element | Field | ID | Value | |
| Consumer Sentiment | S1 - Q3 - Some people have purchased more toilet roll than they need. In a few words describe how you feel about this consumer behaviour ? | OPEN1 | | Open-ended |
| | Field | | Value | |
| | S2 - Q3 - The government has communicated that there is no reason to panic buy and there will be enough for everyone. | OPEN2 | | Open-ended |
| | Field | | Value | |
| | S3 - Q3 - The government has communicated that there is no reason to panic buy and there will be enough for everyone however, this messaging is conflicted by supermarkets imposing a purchasing limit | OPEN3 | | Open-ended |

| Element | Question IV<br>Field | ID | Value | Answer |
|---|---|---|---|---|
| Media Influence | S1 - Q4 - You hear news-reports/social media reports that there is a shortage of toilet roll. How would you react ? | MED1 | 1 | I would not change my shopping habits |
| | | | 2 | Make a note for my shopping trip |
| | | | 3 | I would go immediately to the shop before supplies run out |
| | Field | | | Answer |
| | S2 - Q4 - The government reassures consumers that there will be plenty of toilet roll if people buy normally, there are just issues of getting it into the supermarkets. | MED2 | 1 | I would not change my shopping habits |
| | | | 2 | Make a note for my shopping trip |
| | | | 3 | I would go immediately to the shop before supplies run out |
| | Field | | | Answer |
| | S3 - Q4 - The government release late information condemning panic buying consumers as there is a danger of depletion. | MED3 | 1 | I would not change my shopping habits |
| | | | 2 | Make a note for my shopping trip |
| | | | 3 | I would go immediately to the shop before supplies run out |

After creation, a third-party member was asked to pilot the test and check the validity of questions, the alternative route of the questions, the overall survey design and prediction of participants responses.

Requiring 45 participants – a minimum of 15 participants for each survey was essential for a *t*-statistic analysis. The different sample groups were randomly assigned when the survey was accessed. By asking family and friends, 82 participants responded that varied in age and education. This was a sufficient sample size on which to basis the analysis and was an ungeneralised sample which increased the precision and accuracy of the population.

### *3.4. Relation to the Question*

This outlined survey will yield results to answer whether there is a significant change in panic behaviour because of government messaging. By aggregating the survey data, it will be possible to determine a consensus on how a general consumer would respond to perception of scarcity. Further additional analysis will be conducted to highlight other research areas.

## 4. Results and Analysis

Presented in this section are the results from the *Qualtrics* survey consisting of 76 valid responses. Separated into three sections, the first analysis uses the t-statistic model to assess the interrelationships between the independent variables. The second part of the analysis examines qualitative answers. Lastly, the indirect and total effects of demographic variables are analysed.

### *4.1. Model and Data Analysis*

To test the hypothesis that the different communication levels were associated with statistically significantly different mean panic stimuli, an Independent-Samples T-test was performed. This was done by comparing the means of the responses of interest with different sub-populations. Levene's test for equality of variance, analyses if the two means from the two sample populations have an equal variance. Sub-populations require Levene's test significance assumption, which verifies the assumption that samples have a similar distribution shape in terms of equal variances. For this test, a *Sig.*-value of ($\leq 0.05$) indicates that there is enough variance in the sample to account for possible mean differences. The *p*-value reported for Levene's equality variance is denoted in the tables below, and where above the threshold, equal variance is assumed. Where the equal variances are assumed, the significant *p*-value indicates whether results are statistically significant. Which is used that corresponds to the equal variances. The independent sample *t*-statistic measurement results are depicted in Tables (4.0-4.3). The null hypothesis: that variances are not statistically significantly different is accepted with a value that exceeds ($p < 0.05$).

**Table 4.0.** Results for Question 1.

| | | | | | *Levene's Test* | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | *None* | | *Good Comm.* | | | | | | |
| | ***M*** | ***SD*** | ***M*** | ***SD*** | ***Sig.*** | ***df*** | ***t*** | ***p*** | ***Cohen's d*** |
| **1. None & Good Comm. test** | 1.863 | 1.037 | 1.774 | 1.055 | .525 | 51 | .306 | .761 | 0.085 |
| | *None* | | *Bad Comm.* | | | | | | |
| **2. None & Bad Comm. test** | 1.863 | 1.037 | 2.043 | 1.147 | 0.85 | 43 | -.551 | .585 | -.164 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Good Comm.* | | *Bad Comm.* | | | | | | |
| **3. Good Comm. & Bad Comm. test** | 1.774 | 1.055 | 2.043 | 1.147 | .178 | 52 | -.893 | .376 | -.246 |

**Note. M = mean, SD = standard deviation. For Levene's test the Sig. value represents the p value which indicate normal distribution of variances, "df" = degrees of freedom, and t = t values.*

**Table 4.1.** Results for Question 2.

| | | | | | *Levene's Test* | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | *None* | | *Good Comm.* | | | | | | |
| | ***M*** | ***SD*** | ***M*** | ***SD*** | ***Sig.*** | ***df*** | ***t*** | ***p*** | ***Cohen's d*** |
| **1. None & Good Comm. test** | 1.318 | .476 | 1.193 | .401 | .052 | 51 | 1.030 | .308 | .287 |
| | *None* | | *Bad Comm.* | | | | | | |
| **2. None & Bad Comm. test** | 1.318 | .476 | 1.434 | .506 | .145 | 43 | -.794 | .432 | -.237 |
| | *Good Comm.* | | *Bad Comm.* | | *(Levene's test rejected).* | | | | |
| **3. Good Comm. & Bad Comm. test** | 1.193 | .401 | 1.434 | .506 | **.001** | 40.779 | -1.885 | .067 | -.537 |

**Table 4.2.** Results for Question 4.

| | | | | | *Levene's Test* | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | *None* | | *Good Comm.* | | | | | | |
| | ***M*** | ***SD*** | ***M*** | ***SD*** | ***Sig.*** | ***df*** | ***t*** | ***p*** | ***Cohen's d*** |
| **1. None & Good Comm. test** | *1.590* | *.590* | *1.483* | *.569* | *.906* | *51* | *.664* | *.510* | *.185* |
| | *None* | | *Bad Comm.* | | | | | | |
| **2. None & Bad Comm. test** | *1.590* | *.590* | *1.782* | *.671* | *.937* | *43* | *-1.015* | *.216* | *-.303* |
| | *Good Comm.* | | *Bad Comm.* | | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **3. Good Comm. & Bad Comm. test** | *1.483* | *.569* | *1.782* | *.671* | *.860* | *52* | *-1.766* | *.083* | *-.486* |

**Table 4.3.** Aggregate Results.

| | | | | | *Levene's Test* | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | *None* | | *Good Comm.* | | | | | | |
| | ***M*** | ***SD*** | ***M*** | ***SD*** | ***Sig.*** | ***df*** | ***t*** | ***p*** | ***Cohen's d*** |
| **1. None & Good Comm. test** | *1.689* | *.862* | *1.564* | *.850* | *.862* | *157* | *.907* | *.366* | *.146* |
| | *None* | | *Bad Comm.* | | | | | | |
| **2. None & Bad Comm. test** | *1.689* | *.862* | *1.884* | *.970* | *.219* | *133* | *-1.230* | *.221* | *-.212* |
| | *Good Comm.* | | *Bad Comm.* | | | | | | |
| **3. Good Comm. & Bad Comm. test** | *1.564* | *.850* | *1.884* | *.970* | *.131* | *160* | *-2.225* | *.027* | *-.354* |

According to the aggregated results in Table (4.3.) figures of descriptive statistics propose that Good Comm. (N = 31) had the numerically lowest panic-induced response (M = 1.564). In comparison to None (N = 22) which was associated with a marginally higher response (M = 1.689) while also Bad Comm. (N = 23) had a greater response than both former variables (M = 1.884). With the same attention of these results, Good Comm. had little variety in responses (SD = .850) which shows evidence of a less of a panic-induced result than None (SD = .862) which in turn had less panic than Bad Comm (SD = .970). Overall, preliminary statistics for Good, None and Bad Comm. indicate a greater panic stimulus in the presence of bad government communication respectively in that order. A graphical representation of the means and the 95% confidence intervals is displayed in Figure (4.0.).

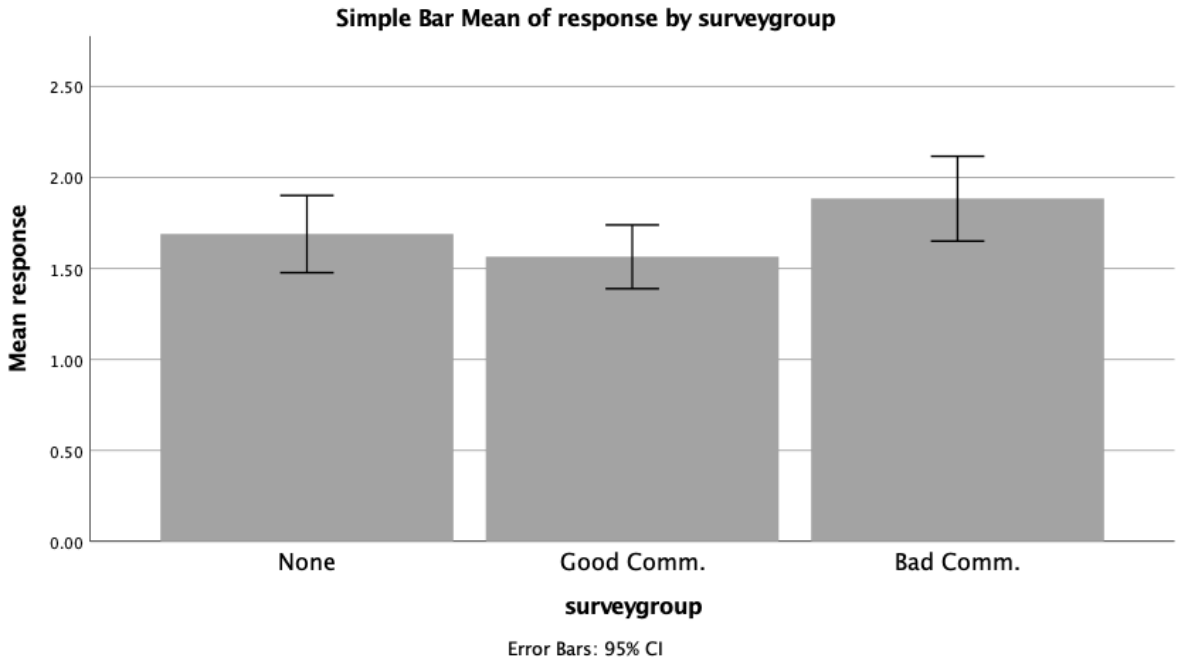



*Figure 4.0.* – Mean responses bar graph (with 95% CIs)

An independent t-test was used to determine and test the hypothesis that these three variables were associated with statistically significantly different panic response. Tests were conducted between the array of questions. The data's statistically significant difference between question answers expresses certain doubts concerning the veracity of the dataset. As can be seen in Table (4.1.) – Test 3, the distribution was not sufficiently normal for conducting a *t*-test, $F(52) = 11.53$, $p = 0.01$ and therefore the assumption of homogeneity of variances was not sufficiently normal. Instead, an unequal variance measurement was interpreted. Except for this, the assumption of homogeneity of variances was tested and satisfied in every other test performed via Levene's test.

The type of communication had no statistically significant difference as the value of the traditional two-sided $p$ significance threshold ($\leq 0.05$) was not identified in any test. However, it can be identified that there is more of a statistically significant relationship between the response of questions that included Bad Comm. The greatest divergence of statistical difference came between Good Comm. and Bad Comm. In Table (4.1) – Test 3; $t(40) = -1.88$, $p = 0.67$ and in Table (4.2) – Test 3; $t(52) = 1.76$, $p = 0.083$, (see results table). Both notably involve Bad Comm. and Good Comm. Subsequently, None was not a sufficient device to have a statistical significantly difference against Good Comm. or Bad Comm. However, with Bad Comm. the first tests generate much higher values ($p = .585$, .432 and

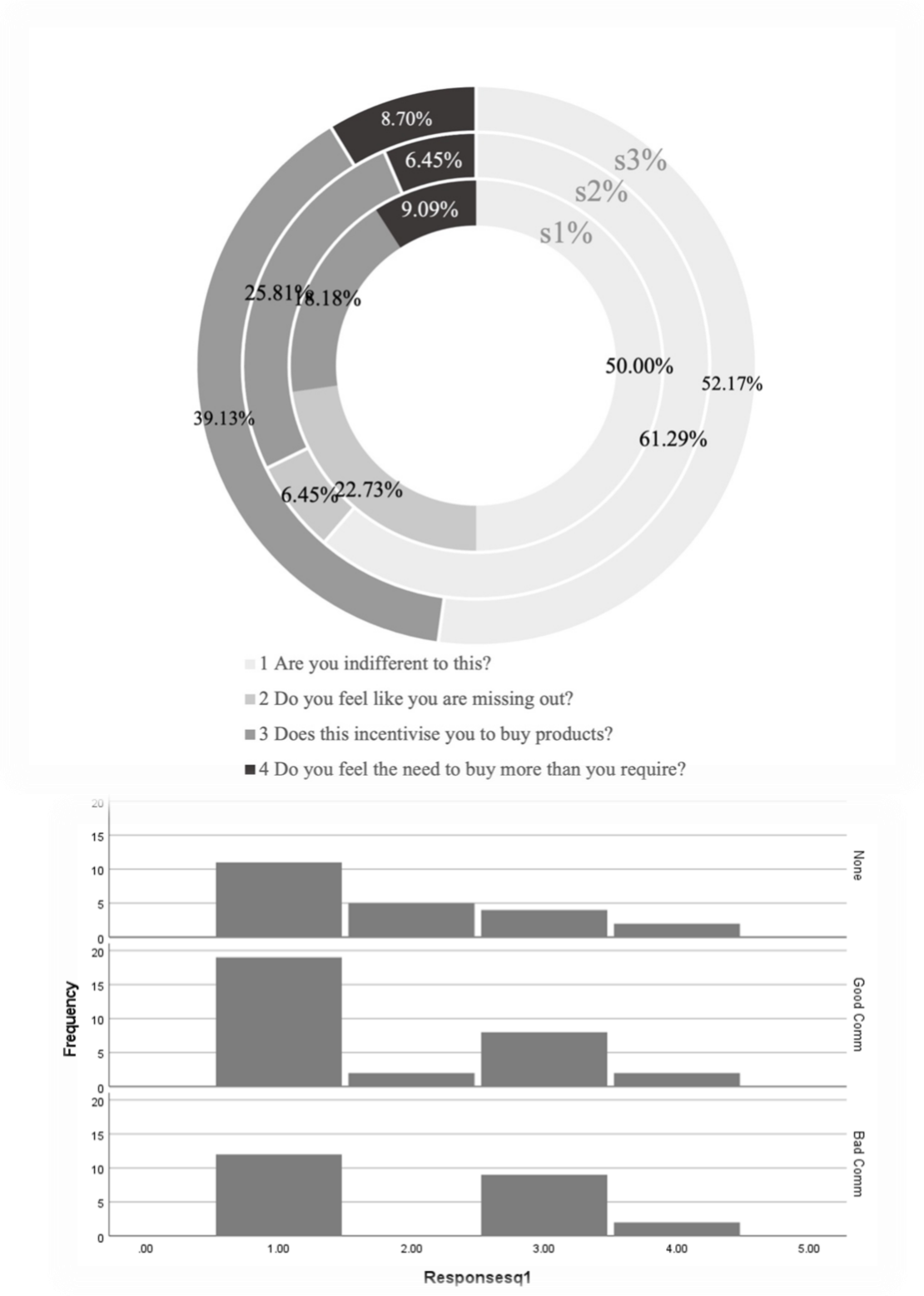
.216). Notably, None had a greater insignificance to Bad Comm. in two of the three questions than Good Comm.

Exploring the significant pairing affinity of Good Comm. and Bad Comm. further. This relationship is more endemic in the aggregation of the survey. As Q4 had less answers, the code values for these questions were weighted to respect the value of the first two questions. This is only employed for the t-tests in Table (4.3) as such slippage of weights in between question analysis was redundant. There is significance at a $t(160) = -2.22$, $p = 0.027$ value, meaning the hypothesis of Good Comm. and Bad Comm. is accepted as it is significant statistically different. Whereas the hypothesis associated with None and Bad Comm. and None and Good Comm. are rejected as they are insignificant. Moreover, Cohen's D (1992) estimates the standard deviation difference of the various datasets. As can be seen from the results table, this difference increases with Bad Comm. and has minimal effect on none and Good Comm. Throughout all the surveys Bad Comm. has a greater effect than Good Comm. which is in turn higher than None.

Cohen's D effect became progressive for None and Good ($d = .146$), then None and Bad Comm. ($d = .212$). to Good Comm. and Bad Comm. ($d = .354$). While employing Cohen's (1992) rule for Good Comm. and Bad Comm. the effect is 'small' to 'medium' but not negligible. Therefore, on average the pooled standard deviation would be ($0.354 \times$ standard deviation) higher. This indicates that Bad Comm. acts as greater panic stimulus device than the other two communications.

*7.2. Participation & allocation of responses*

The Figures (4.0.-4.2.) are constructed for a better visualisation of the difference of the means. Percentages of darker colours are more prominent in the *s3%* and *s1%* figures. Anomalies can be identified in Figure (4.1.) where there is a more panic-induced response (4 = 3.23%, F = 1) in *s2%* that does not feature as a response as expected in *s3%* (4 = 0.00%, F = 0). As it can be seen, Question 4 elicited the most panic responses followed by Question 1 and then Question 2. The divergence of results is also more prevalent here as *s3%* (M = 1.782) than *s2%* (M = 1.483).




**The letter 'S' denotes the survey and '%' is the percentage distribution of the results.*

*Figure 4.1.* – Answer allocation – Q1 – PS

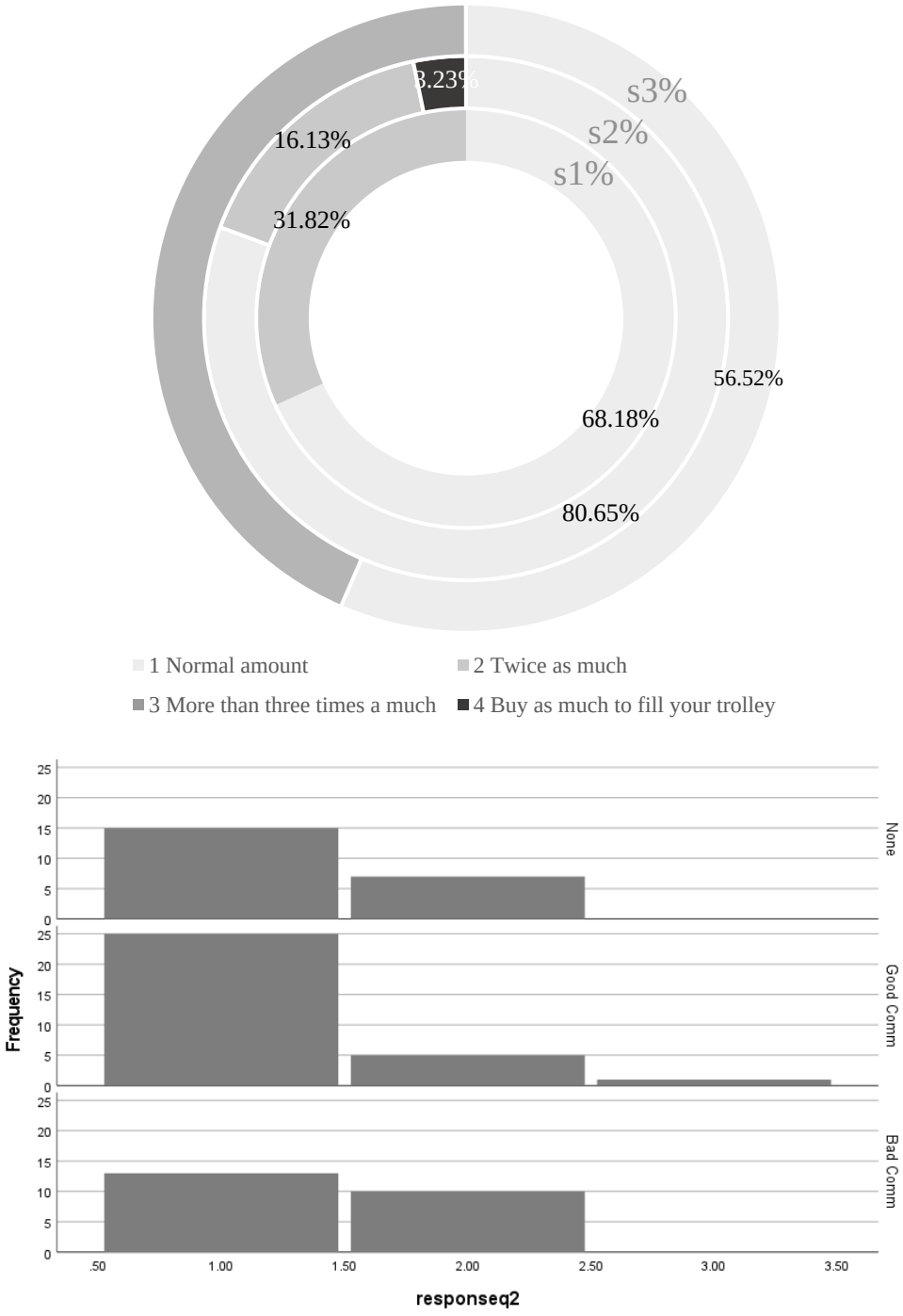



*Figure 4.2.* – Answer allocation – Q2 – CAP

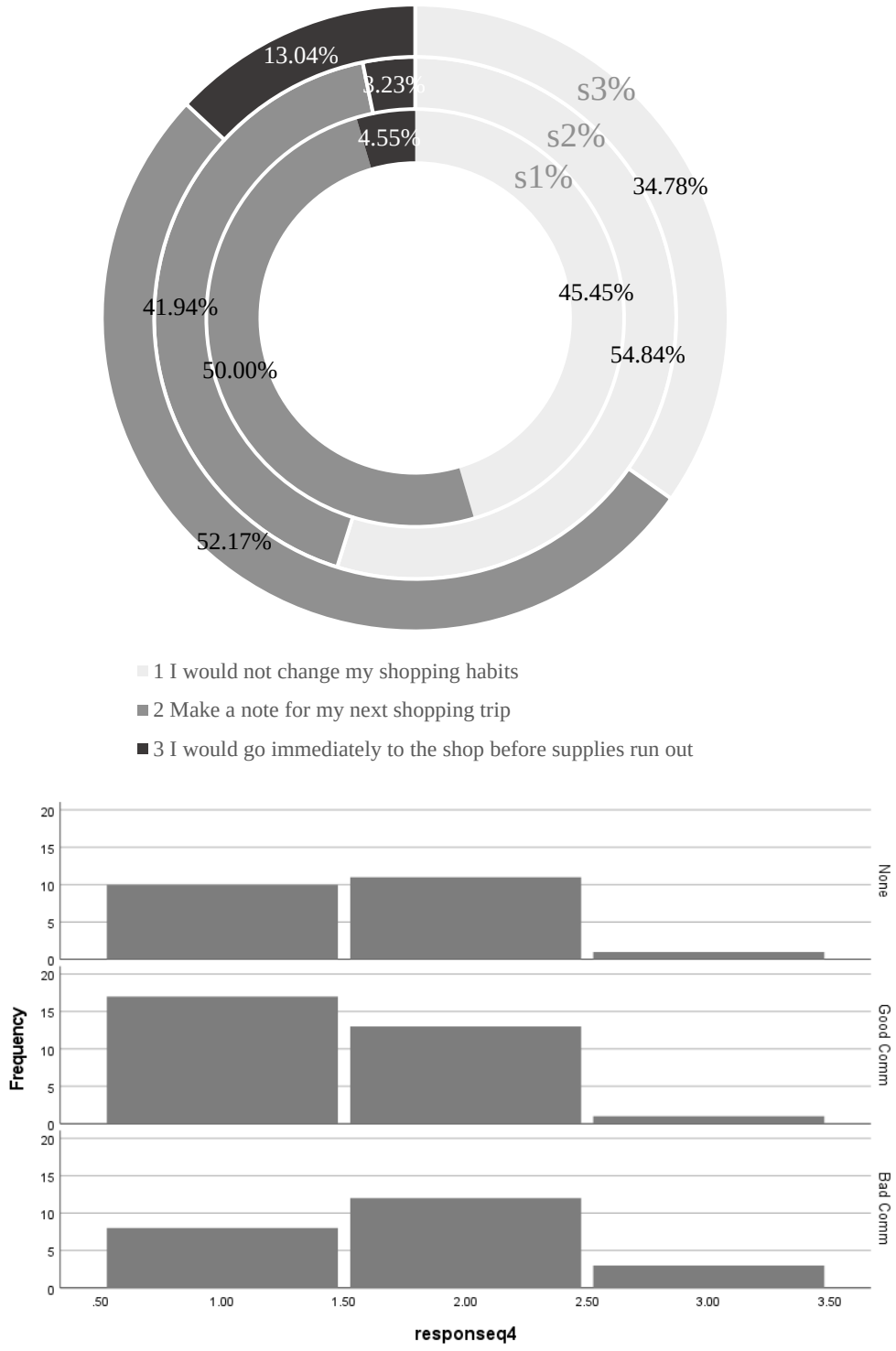



*Figure 4.3.* **–** Answer allocation – Q4 – MED

*4.3. Qualitative Code Map*

Question 3 produced qualitative data results. Analysing this data involved the analysis of short written terms or sentences that respondent's input. Data was exported from *Qualtrics* and processed using *NVivo*.

**Table 4.4.1** – Common word query

| Word | Length | Count | Weighted Percentage |
|---|---|---|---|
| **selfish** | 7 | 31 | 9.20% |
| **people** | 6 | 14 | 4.15% |
| **buy** | 3 | 9 | 2.67% |
| **need** | 4 | 9 | 2.67% |
| **panic** | 5 | 9 | 2.67% |
| **behaviour** | 9 | 8 | 2.37% |
| **buying** | 6 | 7 | 2.08% |
| **roll** | 4 | 6 | 1.78% |
| **toilet** | 6 | 6 | 1.78% |
| **unnecessary** | 11 | 5 | 1.48% |

Table (4.4.2.) shows the frequency of qualitative code – the summarisation of words or phrases that capture the essence of themes in the survey's qualitative data – (Question 3). This shows analysis using Built in Coding and Sentiment Themes in *NVivo*.

Capturing consumer sentiment required the subjective view of statements that were attributed to 14 headings in Table (4.4.2). This attribution process was based of (i). similarity between sentiment, (ii). suggested emotions, (iii). feelings or (iv). description of cognitive functions like 'herd behaviour'. Supplementary, to capturing and processing feelings and emotions, etc. NVivo also calculated the most common words written by participants which are shown in Table (4.4.1.) The top five of the most frequent words were: selfish, people, buy, need, and panic.

**Table 4.4.2** – Frequency of Qualitative Code

| | A : Survey_1 | B : Survey_2 | C : Survey_3 |
|---|---|---|---|
| 1 : Amusement | 1 | 1 | 0 |

| | | | |
|---|---|---|---|
| 2 : Crazy Behaviour | 6 | 1 | 0 |
| 3 : Desperate | 1 | 2 | 2 |
| 4 : Greedy | 1 | 1 | 0 |
| 5 : Herd Mentality | 3 | 4 | 1 |
| 6 : Irrational | 1 | 2 | 0 |
| 7 : Inconsiderate | 0 | 5 | 0 |
| 8 : Inconvenient | 1 | 2 | 1 |
| 9 : Irresponsible | 2 | 5 | 6 |
| 10 : Irritated | 4 | 8 | 4 |
| 11 : Frustrated | 1 | 2 | 2 |
| 12 : Pointless / Unnecessary | 1 | 4 | 2 |
| 13 : Selfishness | 9 | 9 | 13 |
| 14 : Understandable | 0 | 2 | 2 |
| TOTAL | 31 | 48 | 33 |

Presented in Table (4.4.2.) are the 112 distinguished nodes of key themes from the survey, Survey 2 (= 48), which developed the most responses compared to Survey 1 (= 31) and Survey 3 (= 33). The key themes developed were negative although there were some indifferent answers that attribute to the concept being pointless or unnecessary. Selfishness (= 31) was the most reported answer from Question 3 followed by Irritation (=16) and Irresponsibility (=13). Other notable distinguishes are that between the surveys, the theme of being Inconsiderate (=5) was only mentioned in the Good Comm. and overwhelmingly Crazy (=6) was mentioned the most in None. Figure (4.4.) shows that participants associate the incidence of panic buying as negative as common words were negatively associated emotions.

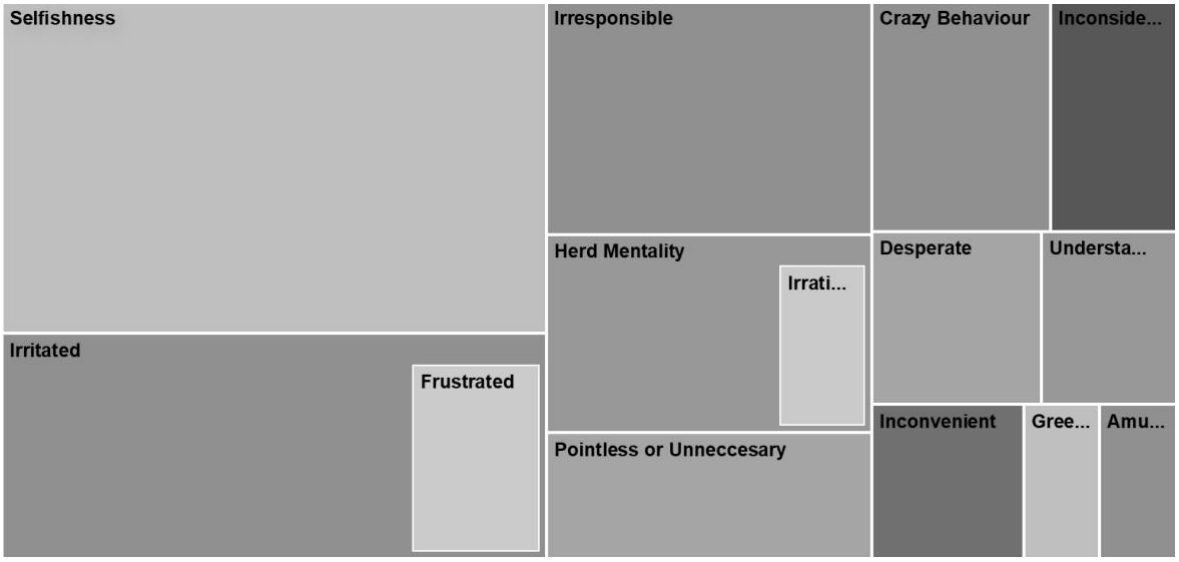



*Figure 4.4.* – Hierarchy chart of common codes.

*4.4. Respondents' Demographics*

The 76 questionnaire participants' demographic profiles have been highlighted in Table (4.5.). Noticeably, the ratio of 50-59 (40%) to 20-29 (33.75%) of participants is partially representative and relatively comparable of education percentage split of Bachelor's degree (31.25%) to A-Levels (23.75%).

**Table 4.5.** Demographic Profile.

| Characteristics | Frequency | Proportion (%) |
|---|---|---|
| **Education** | | |
| No schooling completed | 0 | 0.00 |
| Attained GCSEs | 3 | 3.94 |
| A-levels | 18 | 23.68 |
| Vocational training | 2 | 2.63 |
| Professional qualification | 17 | 22.36 |
| Bachelor's degree | 25 | 32.89 |

| | | | |
|---|---|---|---|
| Master's degree | | 8 | 10.52 |
| Doctorate degree | | 3 | 3.94 |
| | **Total** | 76 | 100.00 |
| **Age** | | | |
| 16-19 | | 2 | 2.63 |
| 20-29 | | 26 | 34.21 |
| 30-39 | | 5 | 6.57 |
| 40-49 | | 8 | 10.52 |
| 50-59 | | 30 | 39.47 |
| 60-69 | | 1 | 1.31 |
| 70+ | | 4 | 5.26 |
| | **Total** | 76 | 100.00 |

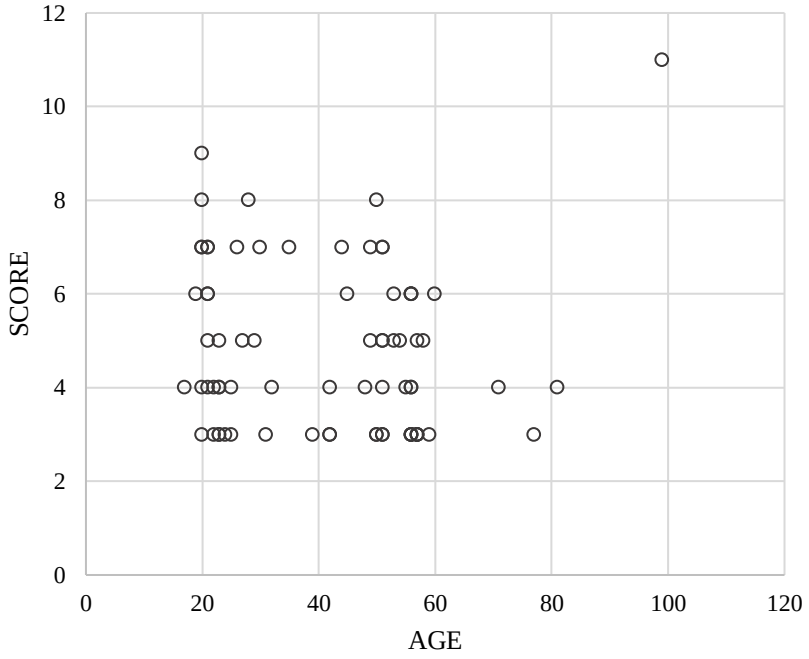



*Figure 4.5.1.* – Scatter graph of score against age.

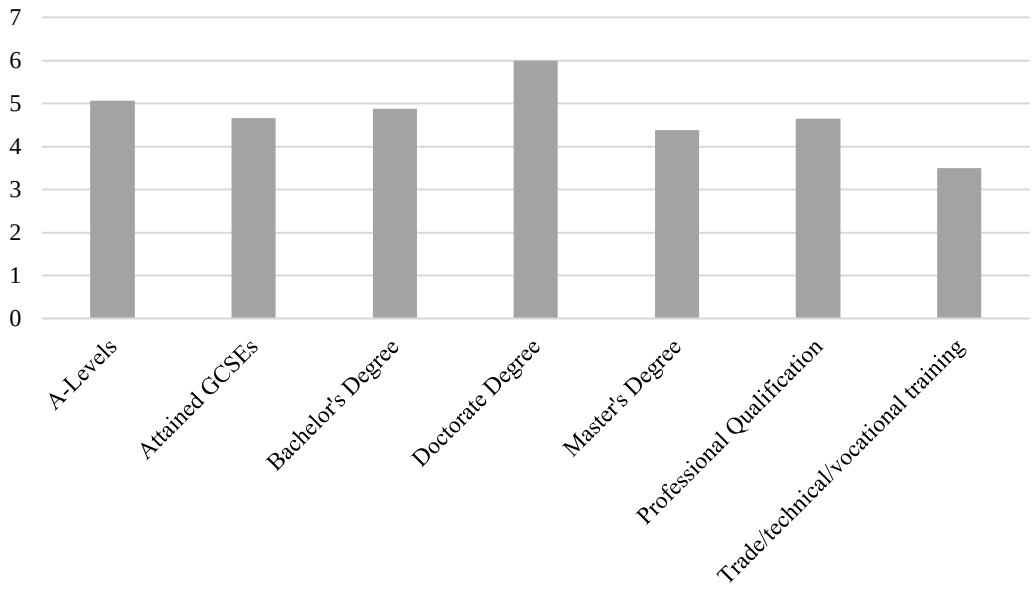



*Figure 4.5.2.* – Bar graph of mean 'panic buying score' with education.

*4.4 Demographic Analysis*

Scores of participants were derived from the total of the coded values of individual participant's scores. This creates the 'panic buying score,' which is then regressed against the 'control variables' (including age and education). This panic score of participants was regressed against their age normally, comparatively with education, the type of education was quantified and then regressed. To show the differences that varied for each type of education Figure 7.5. shows the mean score. Alternatively, when operating regression analysis; education was regressed on the quantified certifications in accordance with their level in government qualification in Department of Education and Learning, (2022). These estimates generated correlation coefficients for age and education of 0.054 and 0.027, and regression significant *p*-values of 0.639 and 0.814, respectively. With the visual aid of Figure (4.5.1. and 4.5.2.) what is observed is that the influence of age and education is not significant.

# 5. Limitations and Recommendations

*5.1. Summary and Critical Reflection*

The objective of this study was to ascertain the extent of government communication and its impact on customer decision-making and consumer sentiment in periods of panic buying. By employing the t-statistic test and finding significant differences between surveys, the key finding is that customer decision-making is influenced and directly affected by both types of good and bad communication. Subsequently, there was not enough evidence for no communication to have an impact. Importantly, good communication from the government has the largest positive impact on customer decision-making where bad communication has a largest negative impact. This is consistent with **Hypothesis 1** where Good communication would act to deter panic buying more than Bad communication.

The increased variance in answers from no communication through good communication to bad communication infers that additional government communication had an impact as it resulted in more divergent responses based on individualistic beliefs (Kreps and Kim, 2020, p. 405:406). In the literature, larger survey samples were more prone to these individualistic responses and values and therefore personal influences and trends may expand inconsistencies in the dataset. However, based on the dataset from my survey, individualistic responses were significant as variances were greater with communication rather than none. However, variances were higher amongst both types of communication as no communication had the lowest variance in response, which suggests that any form of communication elicits a fragmentation of responses. From this it is possible to conclude that poor government communication resulted in a greater range of responses from survey participants than no communication and therefore **Hypothesis 3** is partially accurate. **Hypothesis 3,** although with a progressive SD, failed to reflect that additional communication had a divergent impact on personal response.

With the between question analysis, there was no notable impact on responses for mixed messaging between media and government communication, where there is no change in capacity or perceived scarcity. These results for sub-criteria measures still could have occurred by chance as there is not enough statistically significant difference amongst results.

This indicates that the impact of positive government communication, which contradicts media messaging, still needs more research before **Hypothesis 4** can be proven.

The outcome of qualitative results in the survey indicated that selfishness, irritation, and irresponsibility were common attributes when participants were asked to provide a response to examples of other consumers panic buying. This occurred consistently across all survey variants regardless of the level of government communication provided. The consensus amongst the respondents was that there was a negative attitude in lieu of few positive responses, this aligns with **Hypothesis 5** which was that panic buying behaviour generates a negative emotional/sentiment response in all cases**.**

What is unanticipated, is that there was not any significant difference noted between educated or different age groups outline in **Hypothesis 2**. The difference in education or age of participants did not instil a tendency to base purchasing and behave in ways that conform with other consumer's panic behaviour rather than as individuals. Neither did higher educated participants, with a higher propensity to stockpile, do so more than lower educated consumers. Likewise, younger participants did not respond different. The tendency for younger consumers to shop more frequently and not need to stockpile certain goods (**H2**) was not true.

Good communication helps consumers to rationalise decision-making more so than no communication and bad communication, but variances in consumer behaviour still needs to be accounted for. Not only does positive government communication impact consumers behaviour directly and influence their buying habits, but it also supports the strain on supermarket supply chain which felt the burden during the Covid-19 pandemic and had to make decisions like limits on products.

### *5.2. Limitations*

The research of this study has four main limitations. Firstly, the participants of the study are not fully representative of the population at large. As the survey was canvassed through family and friends, respondents are more likely to share similar opinions. These results may differ from other sample groups namely in other countries that may have different cultural attitudes to risk and have experienced more significant panic buying episodes. From the responses to the survey, it is hard to determine how education had an impact and how

responses may differ between lower educated individuals and higher educated individuals because there is not a big enough sample set of lower-educated individuals. In addition, the responses may be impacted by an individual's perception of scarcity as this maybe different as well. There is no way to ascertain the impact of this with these results.

Secondly, another limitation is that the survey received anonymous feedback from an individual suggesting that certain questions were suggestive towards answers, however it cannot be proved which part of the survey that the certain individual undertook. Therefore, it is hard to measure which survey was more suggestive than others and what may have skewed results and what to compensate for if the survey were to be redesigned.

Thirdly, some survey samples had larger samples than others. Notably the second survey had 31 participants compared to 22 for the first survey and 23 for the third. As mentioned, individualistic beliefs will be more prevalent with larger samples which may skew results.

The fourth a limitation concerns the level of cognitive dissonance generated by the length of survey questions. According to Alwin & Beattie's, (2016, p 2-3) principles and rule on survey length, question should not exceed more than 20 words as this increases survey comprehension from the participant. Future studies should keep questions length to a minimum.

### *5.3. Policy Recommendations*

As this is a policy report, based on this model's analysis of government communication and its consequential impact. This report has bridged knowledge by using government communication and a new methodology. Therefore, there are several valid policy recommendations that aim to establish effective government communication and contribute to knowledge. This study focusses on overall messaging and panic buying, so as a priority, communication from relevant stakeholders to the public need to understand the importance of communicating with consumers, whether this is local officials, governments or supermarkets issuing policy, lockdowns, or general messaging. As communication from the stakeholders outlined has a direct impact on consumer's capacity to panic buy, it should always be considered.

This can be achieved by creating an attentive response to panic episodes that consider influxes of demand for certain goods in supermarkets. As found in this study, communication is a key factor for panic stimulated responses, therefore there should be a critical analysis that good communication is used instead of bad communication. While also ensuring that information is distributed to all, like minority groups. For example, if the government announces a national emergency, a situation that has been shown to create panic, this should be coupled with information that supports that the government is in control.

For this reason, when governments communicate it is imperative their information maintains consistency, relevant and an effective response to impending panic stimulated periods. This should forestall impacts that this may have for consumers as information should reduce consumer's perceived scarcity.

Moreover, trust between governments and consumers is a factor that needs to be reconciled. Media communication should reinforce government messaging that helps gain faith from consumers, rather than contradicting it. Which lowers information overload from consumers, contains clear-cut messages and portrays the government as though they can manage a shortage (Arafat et el. 2021, p. 2290). Messages free of ambiguity, uncertainty and negativity are a factor of good information, while convoluted messages that do not collaborate with supermarkets and add unnecessary complexity should be avoided. Like avoiding negative words; 'danger of depletion,' releasing late information and verbose communication. Therefore, supermarkets and governments should liaise and communicate with other stakeholders effectively, so information is the same.

Furthermore, there are more extreme measures that bypass communication and should be used as a last resort. These act to directly compensate for a perceived scarcity in a product which can include varying distribution times and stock shelves should be implemented so the supply of product is distributed throughout the day and not just to people who get there first (Chua et el. 2021, p. 20). Promoting a civic duty for consumers is essential, as this will hope to diminish the negative sentiment that panic buying creates. Encouraging togetherness and solidarity through consistent government messaging by disseminating messages about supplies and the harm caused by over-buying as well as the social costs of such behaviour to society. Should increase the consideration of fellow consumers and act to deter panic buying behaviour.

## 6. Conclusion

As part of this research study, several gaps in previous literature have been bridged, particularly the novelty of government communication in a context pertinent to panic buying. By implementing a t-statistic based on the importance of government communication and consumer decision-making, this report has identified the effects and problems of different types of government communication and the public's responses, by drawing on similar events that happened during the COVID-19 pandemic. This provides in-practice policy recommendations for future governments to implement. Although the subjects of this report have been of a specific clientele, the recommendations that have been outlined can be utilised by governments to create better consumer decision making.

Communication may not be a recognised predecessor for panic, but it has been shown in this report that the quality of communication can create an effect that can evade panic and or heighten panic. Whether it has or can be impacted by media information, conflicting messaging is still uncertain. However, panic has a significant negative impact on consumer sentiment and thus government policies should be adjusted to aid this.

By pioneering the way for research in this field, future studies can explore and build on the omissions in this study. Governments have the power and duty to achieve much more. In particular, collaborate with supermarket and stakeholders and share wisdom, short of sacrificing commercial information and resources. Which in helping themselves, will help everyone.

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## 8. Ethical Approval

# Ethical opinion form for Faculty of Business and Law (BAL) taught undergraduate and postgraduate students (except MRes)

## Instructions to student

The questions on this form should be completed by the student on relevant dissertation / project modules requiring the completion of an ethics form, regardless of whether you are collecting primary or secondary data. Refer to the Guidance Notes that accompany this version of the form and the 'Research ethics – issues to consider' checklist, also to be found as an appendix to the Guidance Notes, for more information on completing the form and the process you must follow to get ethical approval. The Guidance Notes should be on the same Moodle site as you found this ethics form. If not, you can find a reference copy in the 'Taught student' section of the BAL Faculty - Ethics Information Moodle site.

If you are not collecting primary data or data that are identifiable with individuals, then you still most likely need to complete an ethics form, but will only need to answer Qs 1-3, then Q10 and as many of the questions between Qs 11-18 as are relevant in your case. The completed form, and any supporting documentation you intend to issue to participants, should then be passed to the supervisor. If your supervisor is satisfied that your application is capable of review, the usual procedure is that he / she will send it to an appointed independent reviewer to decide whether ethical approval can be supported. The reviewer, in conjunction with the supervisor, is responsible for approving the ethical dimension of your project, although you may be asked to amend your documentation to the satisfaction of the reviewer before a favourable ethical opinion can be granted.

**No data collection or recruitment of potential participants must be undertaken before a final version of this form has been approved. A final signed and dated version of this form must be included in the file of the dissertation you are required to submit electronically. The form MUST be signed and dated by 1) the student, 2) the supervisor and 3) the peer ethics reviewer (unless the University has specifically previously agreed that the supervisor alone can sign off). If the dissertation is submitted without a fully completed, signed and dated ethics form, containing a BALTAUGHT/… ethics reference number, it will be deemed to be a fail. Second attempt assessment may be permitted by the Board of Examiners.**

**TITLE OF YOUR RESEARCH PROJECT – Panic buying – how government communication can change behaviour biases**

## Ethics questions

1. What are the objectives of the dissertation / research project?

- **Government communication and its intrinsic connection to the concept of panic buying**
- **What different types of good, bad and no government communication action influence panic buying during emergencies and disasters**
- **How communication affects herd panic behaviour during emergencies and how this perpetuates existing problems**
- **The role of media in amplifying panic buying impacts and government communication messaging**
- **How communication can prevent panic buying in the context of disaster preparedness**
- **Prospects and challenges for governments monitoring during disasters**

2. Does the research involve any of the following organisations? ~~YES~~ / **NO** (please delete as applicable). If YES, please specify which one(s).

National Health Service (NHS)

Ministry of Defence (MoD)

HM Prisons and Probation Service

Any other organisation with its own policy and procedures for the ethical review of research?

If YES to any of the above, you must first discuss your proposal with your supervisor, module coordinator, and/or course Leader as appropriate, and consult the Guidance Notes for this ethics form. If you are not sure whether the organisation in which you intend to research either has its own ethics policy, or whether any such ethics policy applies to your intended research, you must check first, before answering the question. See the Guidance Notes to this form for further information.

3. Do you intend to collect *primary data* from human subjects or data that are identifiable with individuals? (This includes, for example, questionnaires and interviews.) **YES** / ~~NO~~ (please delete as applicable)

If you do not intend to collect such primary data then please go to question 10.

If you do intend to collect such primary data then please respond to ALL the questions from Q4 onwards. If you feel a question does not apply then please respond with 'n/a' (for 'not applicable').

4. How will the primary data contribute to the objectives of the dissertation / research project?

- **The primary data will aim to ask questions about consumers which aims to gather data and sentiments about consumer behaviour in relation to different government communication to determine the intrinsic connection between government and panic buying behaviour**
- **The objectives of the dissertation and the research project will be met by collecting questionnaire data and interpreting it by cross-referencing the results from the different types of government communication in the three separate surveys which will determine how government communication can have an impact on consumers to panic buy.**
- **Specific questions in the survey cater towards consumers perception and reaction of herd behaviour with messaging which will help answer questions about panic herd behaviour and media as an amplifying facet with respect to government communication on buying impacts.**
- **This will aim to determine how communication can help prevent panic buying in the context of disaster preparedness prospects and challenges for governments including monitoring during disasters.**

5. What is/are the *population(s) you are researching*?

**The research will use a demographic research sample that aligns to the public. The population will be members of the general public who are residing in the UK, of 18 Years of age or above. I will be surveying family members and friends which covers a vast demographic in respect to age diversity. Age has been highlighted before as a key component to differing opinions about panic buying so prioritising this as a factor is essential. I will try to gather participants within the 'Research Volunteers' pool at the University of Portsmouth, as sentiment is likely to be similar in friend groups and families.**

6. a) How big is the *sample* for each of the research populations, and b) how was this sample arrived at? (Please answer *both* parts of this question.)

**I intend to sample at least 45 people in total which is sufficient to use three surveys all with different types of government communication. As a bare minimum, a composition of 15 people per treatment group for analysis like the t-test from three independent samples. In total a minimum of 45 participants are needed so that the population**

**variance can be estimated. This will help to create accurate data so that there is different opinions and a clear consensus which should decrease the degree of noise when interpreting the data.**

7. How will respondents be a) *identified* and b) *recruited*? (Please answer *both* parts of this question.)

**a) A potential pool will be identified by recruiting participants from friends, family and participants from the 'Research Volunteer's' pool and then reach them directly through email addresses with either of the three surveys.**

**b) Anyone residing in the UK above the age of 18 are eligible to be recruited and participate in the survey.**

8. What steps are proposed to ensure that the requirements of *informed consent* will be met for those taking part in the research? If an Information Sheet for participants is to be used, please attach it to this form. If not, please explain how you will be able to demonstrate that informed consent has been gained from participants.

**General information about the aims of the survey and reassurance of anonymity will be provided at the start of the survey. Participant who then decide to continue their participation in the survey must give their explicit consent in order to be directed to the actual survey questions**

9. How will *data* be *collected* from each of the sample groups?

**Surveys will be created in Qualtrics. A link to the Qualtrics survey will be sent to friends, family members, and members of the pool of 'Research Volunteers' at the university. After the data is collected, for data analysis EViews will be used to interpret.**

10. a) How will *data* be *stored* and b) what will happen to the data at the end of the research? (Please answer *both* parts of this question.)

a) **During the research project, the data will be stored on a secure private or university-owned PC and a backup will be stored on a network storage (e.g. Google Drive, N Drive, Microsoft One Drive, but not Dropbox). All electronic means of storage will be password protected and physically secured. All**

**hardcopies will be physically secured (e.g., in a locked room, cabinet or drawer) with no public access.**

**b) After the end of the project, the data will be uploaded to a protected Dropbox on the dissertation unit's Moodle website. The unit coordinator will transfer this to a secure university server where it will be securely retained for 10 years. This will be the only version of the data stored, I will destroy all data in my personal possession (electronic and physical copies) after the dissertation has been marked.**

11. What measures will be taken to prevent unauthorised persons gaining access to the data, and especially to data that may be attributed to identifiable individuals?

**Any hardcopies of data (including draft printouts of the dissertation) will be stored in a lockable environment to which only I have a key. Electronic data will be protected by password protection and backup copies will be held in a secure virtual drive (e.g. Google Drive, N drive, Mircosoft OneDrive, but not Dropbox). Access permissions will be restricted to just the project team and those who have been allowed to monitor the results. This information will then be securely kept in a separate place to the research to itself.**

12. What steps are proposed to safeguard the *anonymity* of the respondents?

**My data set does not contain any data that would make individuals identifiable. Participant's anonymity will be protected and will not be identified. Personal data will be kept securely and will never become publicly identifiable.**

13. Are there any *risks* (physical or other, including reputational) *to respondents* that may result from taking part in this research? ~~YES~~ / **NO** (please delete as applicable).

If YES, please specify and state what measures are proposed to deal with these risks.

14. Are there any *risks* (physical or other, including reputational) *to the researcher or to the University* that may result from conducting this research? ~~YES~~ / **NO** (please delete as applicable).

If YES, please specify and state what measures are proposed to manage these risks.

15. Will any *data* be *obtained from a company or* other *organisation*? ~~YES~~ / **NO** (please delete as applicable) For example, information provided by an employer or its employees.

16. What steps are proposed to ensure that the requirements of *informed consent* will be met for any organisation in which data will be gathered? How will *confidentiality* be assured for the organisation?

**N/a**

17. Will the proposed research involve any of the following (please put a √ next to 'yes' or 'no'; consult your supervisor if you are unsure):

| | | | | |
|---|---|---|---|---|
| • Potentially vulnerable groups (e.g. adults unable to consent, children)? | YES | | NO | √ |
| • Particularly sensitive topics? | YES | | NO | √ |
| • Access to respondents via 'gatekeepers'? | YES | | NO | √ |
| • Use of deception? | YES | | NO | √ |
| • Access to confidential personal data (names, addresses, etc)? | YES | | NO | √ |
| • Psychological stress, anxiety, etc.? | YES | | NO | √ |
| • Intrusive interventions? | YES | | NO | √ |

If answers to any of the above are "YES", please explain below how you intend to minimise the associated risks.

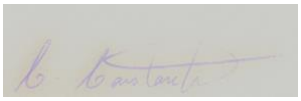
**I have outlined how confidential data will be stored securely so third parties cannot gain access to it or influence it.**

18. Are there any other ethical issues that may arise from the proposed research?

**N/a**

| | Print name | Signature | Date signed |
|---|---|---|---|
| Student | MATTHEW BABER | MATTHEW BABER | 21/01/2022 |

I / we grant a favourable ethical opinion and the supervisor confirms that the ethical approval details have been entered on the University's Google Drive register of ethically approved research and in the box below:

| | | | |
|---|---|---|---|
| Supervisor | Federica Alberti | Federica Alberti | 05/02/2022 |
| Peer reviewer (unless University has agreed that supervisor can sign off) | Collin Constantine |  | 12/02/2022 |

FOR SUPERVISOR'S USE ONLY. Supervisor to enter details of research onto Faculty spreadsheet on Google Drive (https://docs.google.com/spreadsheets/d/13Kkb_1bRXg1dgb9BdPP_zpPWcib1uHKyR8veFt2Qz60/edit?usp=sharing), using next available reference number, and enter number in the space below.

**Student's ethical approval reference for this research:** BALTAUGHT/249]

The student should ensure that the above ethics reference is included on any documentation issued to research participants (e.g. preamble to survey questionnaire, information sheet, consent form, instructions to participants about the research, etc.).

AMENDMENTS

If you need to make changes please ensure you have permission before recruiting any participants and any primary data collection. If there are major changes, fill in a new form if that will make it easier for everyone. If there are minor changes then fill in the amendments (next page) and get them signed before the primary data collection begins.

# CHANGES TO ETHICS PERMISSION

VERSION: ____

Please describe the nature of the change and impact on ethics:

| | Print name | Signature | Date signed |
|---|---|---|---|
| Student | | | |
| I / we grant a favourable ethical opinion: | | | |
| Supervisor | | | |
| Peer reviewer (unless University has agreed that supervisor can sign off) | | | |

(please cut and paste the next section, together with the heading at the top of this page, as many times as required)

VERSION: ____

Please describe the nature of the change and impact on ethics:

| | Print name | Signature | Date signed |
|---|---|---|---|
| Student | | | |
| I / we grant a favourable ethical opinion: | | | |
| Supervisor | | | |
| Peer reviewer (unless University has agreed that supervisor can sign off) | | | |

## 9. Declaration

I hereby declare that this dissertation is substantially my own work;

- I do consent to my dissertation in this attributed format (not anonymous), subject to final approval by the Board of Examiners, being made available electronically in the Library Dissertation Repository and/or Department/School/Subject Group digital repositories. Dissertations will normally be kept for a maximum of ten years;
- I understand that if I consent, this dissertation will be accessible only to staff and students for reference only;
- This permission may be revoked at any time by e-mailing data-protection@port.ac.uk.