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# Contextualising the Impact of COVID-19 Pandemic on Attitudes of People to Follow SOPs: Study of Smart Lockdown across Generation X, Y and Z in Pakistan

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**ABSTRACT**

Pandemics such as the Black Death and cholera in the past sowed doubt among the human population and triggered widespread fear and panic. When it comes to the COVID-19 pandemic, people all around the world seem to have the same reactions. This study aimed to determine if and to what extent people's compliance with SOPs affects the rate at which the disease spreads. This study uses the theoretical underpinnings laid out by the Theory of Planned Behavior (TPB) and the Protection Motivation Theory (PMT) to inquire about people's awareness, understanding, and perspectives. Intentions toward COVID-19 SOPs were investigated by digging into these independent factors. Voluntary and non-voluntary control behaviour intents can be predicted by the independent variables. The research is conducted in two phases and used a combination of methods, i.e., quantitative and qualitative. The findings from Stage I's demographic exploration has been put to the test in Stage II's empirical analysis. Also, the results were compared over three generations (X, Y, and Z) to examine generational differences and determine whether or not adjusting to how individuals of different ages see pandemics will help reduce their societal impact. Among the three selected generations, Gen Z was the most influenced by information and advice campaigns to build a perception of danger that has shaped their protective behaviour, as evidenced by the results of the qualitative study's 42 face-to-face interviews. Yet, Gen Y and Z were more influenced by informal standards. In stage II, the questionnaire (n=510) was used to conduct empirical testing of the topics identified in qualitative thematic analysis, and the results indicated that risk perception was a significant predictor of protective behaviour. No substantial moderating influence of risk perception on knowledge and protective behaviour was found, according to mediation and moderation analysis.



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## 1. Introduction

COVID-19 is a respiratory ailment caused by a newly found coronavirus (WHO, 2020), first identified in December 2019 in Wuhan, China. In addition, on March 11, 2020, a coronavirus pandemic was proclaimed by the (WHO, 2020). Long-term and short-term effects on communities, healthcare systems, and individuals are all tied to this disease (Jiang, Zhou, & Tang, 2020). Uncertainty over the nature of this global pandemic has led to social restrictions, preventative measures, and lockdowns, all of which have been linked to reported physical and mental health problems (Horby et al., 2020). When combating COVID-19, WHO (2020) recommends a combination of quarantine rules, social isolation, and hygiene practices. Staying at least one meter away from other people, covering one's mouth and nose with a tissue while coughing or sneezing, often washing one's hands, and avoiding particular regions are all recommended for preventing the spread of disease. Anxiety and stress management can also

play a role in warding off this illness (Zhong et al., 2020). The availability of accurate health information, investments in a safe and healthy workplace, the physical well-being of workers, and ventilation in confined spaces are all important for preventing disease (Latif, 2020).

So, in the case of Pakistan, as of July 17, 2020, there have been over 5,000 fatalities and 260,000 documented cases despite the government's strict implementation of prevention measures. Unfortunately, conformist clerics and religious activists pushed back against the provincial governments' statewide lockout in early March, insisting that people still go to mosques, as usual, to worship in congregation. Despite widespread publicity about the pandemic, multiple reports of large gatherings have occurred across the country. The rapid spread of the COVID-19 virus is due to the virus's high contagiousness. Tragically, this illness can cause severe breathing problems or even death. While no treatment or vaccine is available for this disease, it is nevertheless essential to take precautions against it (Mubeen, Kamal, Kamal, & Balkhi, 2020). Health behaviour theories help us understand the factors that lead to healthy habits, allowing us to structure health promotion programs more effectively.

For the present study, the most suitable theoretical framework for anticipating safe activities is the Protection Motivation Theory (PMT), first presented by Rogers in 1975. Concerns about one's health, as hypothesised by PMT, motivate preventative behaviour. This is why, during COVID-19, the researcher has employed The Protection Motivation Theory (PMT) to analyse the data collected from interviews (n=42) qualitatively and quantitatively; the survey was conducted (n=510) of selected three different generations about their thoughts, and feelings, actions and perceptions. Moreover, "how to persuade parents to wear masks" web search terms trended on major social media platforms like Instagram and Facebook around the start of the COVID-19 outbreak. There was a widespread consensus among children and teenagers that their parents didn't take the disease seriously. "We might not understand how difficult it is to communicate with our parents if it weren't for this pandemic" (Tang, Chen, & Wu, 2021) was quoted from one person. They still don't put on masks before venturing out, and they poke fun at us for being overprotective. In addition, research shows that young people are more likely to take extraordinary precautions during a COVID-19 outbreak and to express their thoughts online (Moser & Freeman Jr, 2014). Some academics refer to these differences in health behaviour between generations as "intergenerational battles" (Tang et al., 2021). The question is why people's health practices shift over time. What are the reasons for generational disparities, and how do these differences manifest themselves? These are the major assumptions the study has examined.

## 2. Literature Review

The present study reviews the literature based on the themes to be generated, i.e., knowledge, attitude and perceptions of people across three generations during COVID-19 regarding the disease. At the end of the reviewed literature and theoretical underpinnings, the hypothesis has been developed to analyse the data quantitatively.

To better understand what motivates people to take precautions against the spread of the current COVID-19 pandemic, the mediation and moderation model is offered. Knowledge may not directly influence health behaviour, but it may have a predictive effect when mediated by other factors (Raza, Iftikhar, Mohamad, Pembecioğlu, & Altaf, 2020; Tan, Li, Wang, Chen, & Wu, 2004). Risk perception, concern, attention, and self-efficacy have all been proposed as mediators between knowledge and cautious behaviour by (Tan et al., 2004). Risk perception has been accessed by other researchers as a mediator between participants' disease knowledge and protective, preventative, or precautionary behaviour (Iorfa et al., 2020; Wang et al., 2020). In addition, studies have shown that individuals with a deeper understanding of the origins of an illness tend to worry more about contracting it (Vartti et al., 2009). Iorfa et al. (2020) study back up the idea that even people who know a lot about a disease might not take any preventative measures if they don't feel threatened. As a result, it seems likely that there is a connection between education and how seriously one takes risks. Individuals' risk perception is correlated with their propensity to engage in protective behaviours like social isolation and regular hand washing (Abdelrahman, 2022; Zhu et al., 2020), which have a significant impact on slowing the spread of COVID-19. The Health Belief Model (HBM) added that people's propensity to take preventative measures is proportional to the level of danger they attribute to the disease. Therefore, the present study focuses on the knowledge, perceptions and attitudes of people

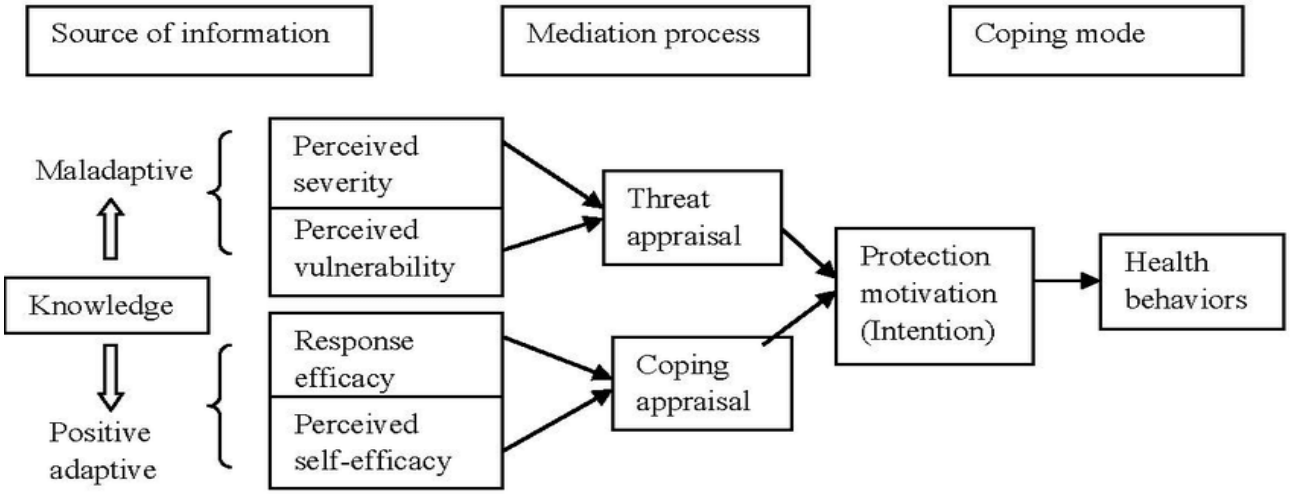
across generations. The study adds to the existing literature because no work has been done from this perspective where peoples' perceptions and attitudes are studied in the context of the COVID-19 pandemic across selected three generations. The present study is both qualitative and quantitative in nature. Qualitatively, interviews were conducted and in the later stage, the questionnaire was designed to test the results empirically. To analyze behaviour, the theory of PMT has been employed.

## 3. Theoretical Framework

In this study, we use the well-established behavioural theory, i.e., the Protection Motivation Theory (PMT) to examine how different generations' attitudes toward COVID-19 containment strategies vary depending on a variety of factors. Independent factors predicted the voluntary and non-voluntary control behaviours. COVID-19 is a highly contagious virus that has the potential to infect large numbers of individuals quickly. This condition has devastating consequences, including acute respiratory difficulties and death. There is currently no cure or vaccination available for this condition; consequently, preventative measures appear crucial (Mubeen et al., 2020). Planning effective health promotion initiatives requires an understanding of the elements that contribute to protective behaviours, and this is where healthy behaviour theories come in. Rogers's Protection Motivation Theory (PMT), first proposed in 1975, is a popular theoretical framework for anticipating protective. According to PMT, one's level of intrinsic motivation to take precautions against potential health risks is a key factor in determining whether or not one does so.

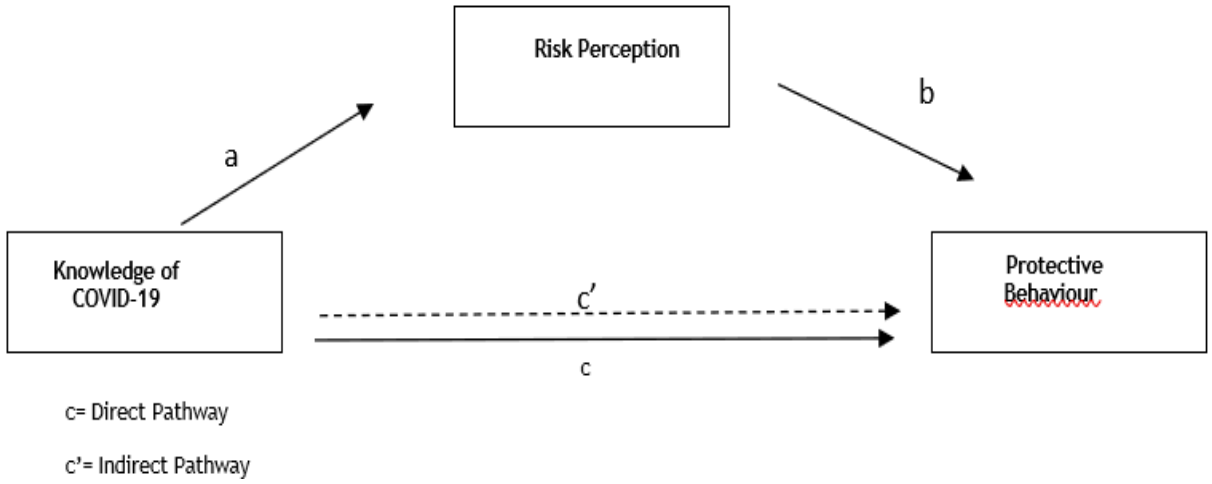
Threat and coping appraisals are cognitive processes that are explained in PMT, and they are used to predict and motivate protective behaviours (ibid, 2020). Appraisals of dangers and ways to cope might lead to either healthy adaptations or harmful maladaptation (Al-Badr & Ajarim, 2018). Perceived severity of the problem, perceived vulnerability to contracting the disease, and perceived rewards from engaging in risky behaviours make up the three parts of threat appraisal in the prevention, mitigation, and treatment (PMT) framework. As a result, a combination of high perceived severity and vulnerability and low perceived benefits increases the motivation to participate in health-promoting behaviours. One's appraisal of coping strategies in PMT includes three components: one's belief in one's ability to manage "protective behaviours" (self-efficacy), one's estimation of the costs (including money, time, and energy) and efforts to perform "protective behaviours" (perceived response cost), and one's evaluation of the protective behaviour's efficacy in "coping with the threat" (response efficacy). Overall, we anticipate that the response efficacy and self-efficacy will strengthen coping evaluation while the response cost will reduce (Fig. 1) (Abdelrahman, 2022).

**Figure 1: The framework of the Protection Motivation Theory (PMT)**




Four interrelated hypotheses form the theoretical framework of this study: (a) the direct effect (i.e., knowledge of COVID-19 among the three generations predicts protective behaviour against the virus), (b) the indirect effect (i.e., knowledge of COVID-19 among the three generations predicts protective behaviour against the virus), and (c) the relationship between risk perception and (d) protective behaviour among the three generations.

**Figure 2: Perceived danger moderates the connection between Knowledge and Protective Behaviour**




This framework applies to the PMT theory. In the present study, the researcher used PMT to examine the intergenerational transmission of COVID-19 knowledge, risk perception, and protective behaviour. And at a later stage, the gap is empirically tested by designing a self-made questionnaire. Based on the literature reviewed and theoretical framework, the hypotheses developed for the present study are:

$H_1$: There is a significant difference in attitudes towards COVID-19 containment measures among Generation X, Y and Z.

$H_2$: Subjective norms have a positive impact on attitudes towards COVID-19 containment measures across Generation X, Y and Z.

$H_3$: Perceived barriers towards compliance negatively affect attitudes towards COVID-19 containment measures across Generation X, Y and Z.

$H_4$: Behavioral intentions towards the COVID-19 crisis positively influence attitudes towards COVID-19 containment measures across Generation X, Y and Z.

$H_5$: Threat appraisal has a positive impact on attitudes towards COVID-19 containment measures across Generation X, Y and Z.

$H_6$: Coping appraisal positively influences attitudes towards COVID-19 containment measures across Generation X, Y and Z.

$H_7$: Religious coping contributes to positive attitudes towards COVID-19 containment measures across Generation X, Y and Z.

$H_8$: Resilience has a positive influence on attitudes towards COVID-19 containment measures across Generation X, Y and Z.

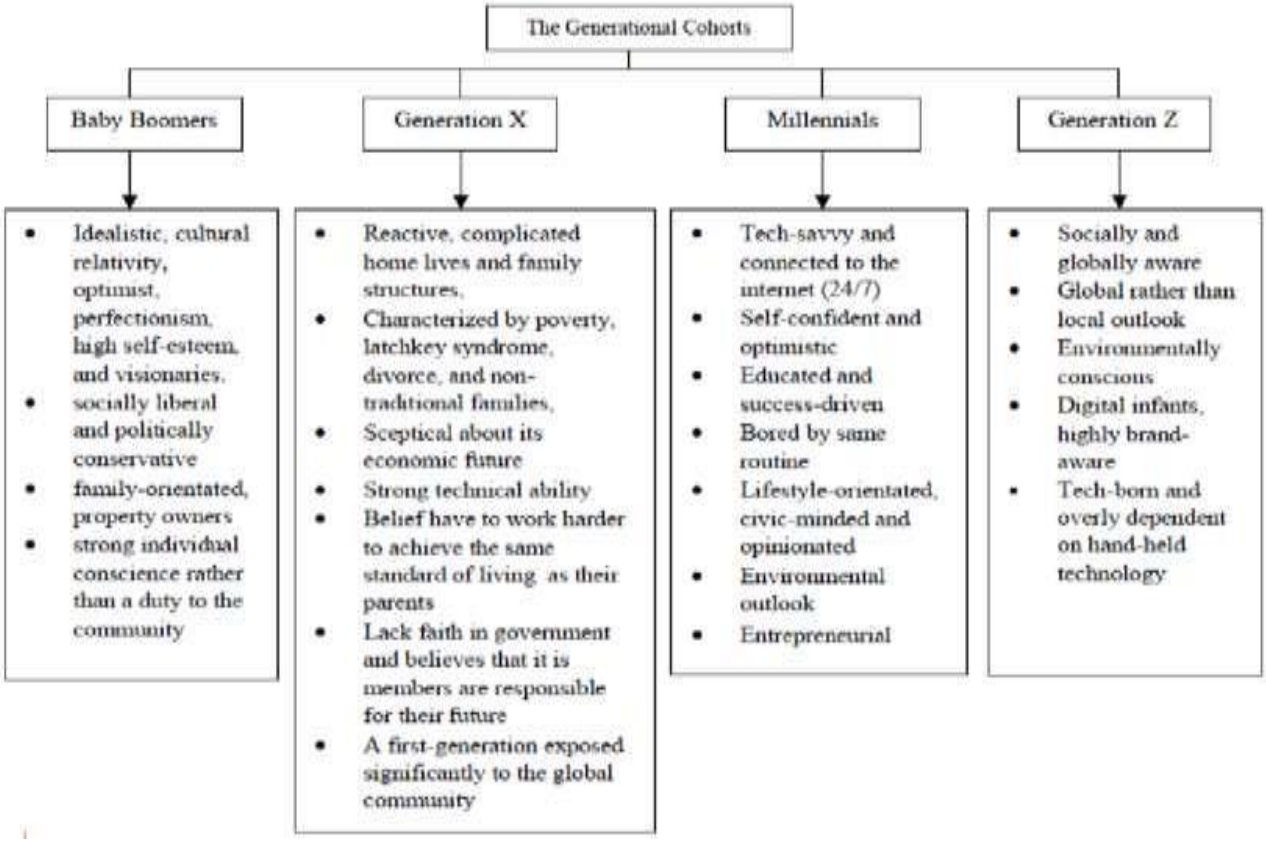
### 3.1. Differences across Generations

A generation is a peer group born over a 20-year period that spans from birth to adulthood and is defined by demographic and life events. Major events such as a financial, political or environmental crisis shape a generation's history and act as reference points for them. Due to this, each generational group or cohort is likely to have unique shared characteristics that influence their behaviour and the decisions they make and that set them apart from other cohorts (Nicole Culos-Reed, Carlson, Daroux, & Hately-Aldous, 2006). These differences have been the subject of numerous discussions and have led to the formulation of policies on the management of workforces guided by different generational characteristics (Jorgensen, 2003).

Currently, there are four distinct adult generations. The silent generation, the baby boomers, Generation X and Generation Y. The youngest generation, Generation Z, is just entering

adulthood. This study focuses on Generations X, Y and Z, and these will be further elaborated on below (Figure 2) (Turner, 2015). Generation X consists of people born between 1963 and 1978. Generation Y is also called Millennials or the Net Generation. They were born between 1981 and 2000 and are the most recent entries into the workforce (VanMeter, Grisaffe, Chonko, & Roberts, 2013). Whereas, Generation Z was born in the mid-1990s to the late 2000s. They are the current youth and are also known as the Generation, Net-Gen and Digital Natives (Turner, 2015).

**Figure 3: The Generational Cohorts**




## 4. Methodology

In this section, I have discussed how to build a research framework and formulate a hypothesis. In addition, the explanation of the research methodology has been employed to carry out the rest of the study included below. Following a review of the study design, I have briefly described the research purpose, research method, and unit of analysis. Following this comes a detailed description of the sampling technique, followed by an examination of the problems inherent in the gathering of data, coding, generating themes using TPB and PMT and an explanation of the administration of the questionnaire. The study is conducted in two stages: In the Stage-I, qualitative analysis was done by employing an interview tool to collect data to learn the perceptions of different people from different generations and in stage II, the data was tested empirically by designing a self-employed questionnaire.

### 4.1. Study Design

A mixed-method approach was used in this investigation. To learn the behaviour of all the three selected generations (X, Y, and Z), a questionnaire was developed, and a qualitative technique, i.e., interviews (n=42) based on PMT was used to generate themes of COVID-19 on participants' knowledge, perceptions, and practices during COVID-19. The purpose of this research was to determine if there was a correlation between participants' COVID-19 knowledge and risk perception and protective behaviour across three generations in Pakistan. In addition, the moderating influence of risk perception on the link between knowledge and protective behaviour was examined, and the association between risk perception and the other PMT factors (such as perceived barriers, resilience, subjective norms, threat, religion, and coping assessment) was developed. Empirically, it was tested by disseminating a self-employed questionnaire among people belonging to selected three generations (X, Y and Z). In total, 510 responses were considered to analyze statistically.

### 4.2. Sampling Method

The theoretical Sampling technique was used for subsequent theory generation. The researcher jointly collects codes and examines data to interpret what data to collect next and where to find them. This in turn develops theory as it emerges. The respondents consisted of a representative sample of the target generations X, Y and Z, both male and female. In stage I - Personal face-to-face interviews were conducted with all respondents. More than 30 interviews were conducted following the TPB criteria to meet the saturation point. The interviews start with the interviewer introducing herself, the purpose of the research, the layout of the interview, and reassurance of the confidentiality of the data collected.

In stage II of the study, the theoretical framework generated from the interviews was empirically tested using a questionnaire complying with the ethical standards. This study recruited the general public belonging to three different generations, i.e., Gen X (43 to 58 years old), Y (27 to 42 years old) and Z (11 to 26 years old) as the past study found that people aged between 20 to 24 years old are reported to have a higher infection rate of COVID-19 (Povera, 2020).

### 4.3. Data Collection

The study combined qualitative and quantitative methods. A qualitative technique via content analysis was used to systematically unpack the gathered data in stage-I, as Ajzen and Fishbein suggested. The raw data was then identified, coded, and categorized using the ATT coding for social distance attitudes during COVID-19., SN coding for social networks, and PBC coding for perceived barriers to compliance with safety measures. The TPB framework served as inspiration for these three codes.

The raw data from COVID-19 were identified, coded, and categorized with the help of a coding system that relied on threat appraisal (TA) coding. Safety precautions and the use of CA coding for the evaluation of coping strategies. The PMT framework will serve as the basis for both of these codes. NviVo software was used to conduct a frequency study, which involved keeping track of how often a given code was used. This will make it possible to isolate the most important tenets of each theoretical category.

In Step 2, we used SPSS v18 to analyze the survey data, and the findings are presented in the data analysis section. The Cronbach's alpha analysis confirmed its high degree of consistency. The survey was split into two sections. In the first section, participants filled out questionnaires about themselves, including questions about their age, gender, marital status, and level of education. The second section is concerned with PMT models. A five-point Likert scale (range: 1-5) from "strongly disagree" to "strongly agree" was used to score all PMT components.

### 4.4. Data Analysis

After carefully providing theoretical foundations and designing the questionnaire, the data were analyzed both qualitatively by conducting 42 interviews and quantitatively, a questionnaire (n=510) was designed and analyzed using a Statistical tool, SPSS 18 version and required tests were done to show the relationship between dependent and independent variables and to interpret the results.

## 5. Results and Discussion

Firstly, the results of the qualitative analysis are revealed. In the first stage, a series of interviews were conducted to explore the impact of the COVID-19 pandemic on attitudes towards following SOPs among different generations in Pakistan. The data collected through these interviews were then analyzed using NVIVO software, a powerful qualitative data analysis tool, to identify key themes, sub-themes, and relationships within the data.

The analysis of the interviews revealed several significant findings. First, the gender distribution in the study sample showed a higher representation of males (61.9%) compared to females (38.1%). Second, participants primarily belonged to the younger generations, with Generation Z (born between 1997-2012) comprising the majority (61.9%), followed by Generation Y (Millennials, born between 1981-1996) (28.6%), and Generation X (born between

1965-1980) (9.5%). This generational focus reflects the study's objective of understanding how different age groups perceive and adhere to SOPs in the context of the COVID-19 pandemic.

Table 1 shows the gender of the respondents. It consisted of 26 (61.9%) male participants and 16 (38.1%) female participants. The representation of males was higher than females in the study sample. Besides, this gender distribution suggests that both males and females were included in the study, although males were slightly more represented.

**Table 1: Gender of the respondents from the selected generations (X, Y and Z)**

| Gender | Individuals | Percentage |
|---|---|---|
| Male | 26 | 61.9% |
| Female | 16 | 38.1% |

In addition, the study included participants from various age brackets (Table 2). The age bracket with the highest number of individuals was 25-30, with 9 participants (21.4%), followed by 19-24 with 7 participants (16.7%). The age bracket 56-60 had no participants, indicating that individuals in this age range were not represented in the study sample. Yet, the distribution of participants across different age brackets provides insight into the age demographics of the study.

**Table 2: Age of the respondents from the selected generations (X, Y and Z)**

| Age Bracket | Individuals | Percentage |
|---|---|---|
| 19-24 | 7 | 16.7% |
| 25-30 | 9 | 21.4% |
| 31-35 | 6 | 14.3% |
| 36-40 | 2 | 4.8% |
| 41-45 | 2 | 4.8% |
| 46-50 | 4 | 9.5% |
| 51-55 | 2 | 4.8% |
| 56-60 | 0 | 0% |

Moreover, the study encompassed participants from three generations: Generation X, Generation Y, and Generation Z. Generation Z had the highest representation among all generations, with 26 individuals (61.9%) in the study sample. Generation Y followed with 12 individuals (28.6%), while Generation X had the lowest representation with 4 individuals (9.5%) (Table 3). So, the distribution of participants across different generations highlights the focus on understanding the impact of the COVID-19 pandemic on attitudes towards SOPs among younger generations, particularly Generation Z and Generation Y.

**Table 3: The respondents from the selected generations (X, Y and Z)**

| Generation | Individuals | Percentage |
|---|---|---|
| Generation X (born between 1965-1980) | 4 | 9.5% |
| Generation Y (Millennials, born between 1981-1996) | 12 | 28.6% |
| Generation Z (born between 1997-2012) | 26 | 61.9% |

Using NVIVO software, the data were analyzed through a multi-stage process. The transcribed interviews were coded, with relevant codes assigned to specific data segments based on the research questions and objectives. These codes were then grouped into themes, representing overarching concepts and ideas emerging from the data (Table 4). Sub-themes were further developed to capture more specific aspects and nuances within each theme.

The table (4) outlines the stages involved in the contextualization of the impact of the COVID-19 pandemic on attitudes towards SOPs among different generations in Pakistan. It provides an overview of the key steps taken during the research process, from data transcription to reporting. Each stage contributes to the development of a comprehensive and well-structured analysis that connects the research objectives, questions, and themes, ultimately providing a coherent and evidence-based story.

**Table 4: Thematic Analysis Checklist (Braun and Clarke, 2006)**

| Stage | Description |
|---|---|
| 1. Transcription | Data has been transcribed in detail, ensuring accuracy and fidelity to the recorded data. |
| 2. Coding | Coding has been performed, considering all the collected data and applying relevant codes that align with the data. |
| 3. Themes | Themes have been generated based on the coded data, ensuring they are grounded in the data and exhibit internal coherence and distinctiveness. Themes are cross-checked against each other and verified against the original data. |
| 4. Significant statements | Relevant significant statements have been carefully identified and sorted to correspond to the themes. |
| 5. Analysis | The analysis goes beyond mere description and involves making sense of the data. It provides a conceptual depth to the identified themes and significant statements, connecting them to the research questions. The analysis presents a well-organized, evidence-based analytical narrative. |
| 6. Reporting | The research findings are reported adequately, demonstrating consistency among the research objectives, questions, methodology, and analysis. The researchers actively engage in the process and reporting, including the emergence and interpretation of themes with reflexive journaling. |

**Table 5: Knowledge, Attitudes and Perceptions of People across three Generations**

| Themes | Gen X | Gen Y | Gen Z |
|---|---|---|---|
| Knowledge | Familiar with COVID-19, its origin, and global impact | Familiar with COVID-19, its origin, and global impact | Familiar with COVID-19, its origin, and global impact |
| Attitude towards Covid-19 | Recognize it as fatal and dangerous, especially for older adults | Varying opinions on its fatality, some believe it depends on exposure | Recognize it as fatal and contagious |
| Coping Appraisal | Emphasize the need for social distancing and following SOPs | Recognize the importance of social distancing but struggle with its impact on daily life | Highlight the impact of social distancing on mental health and social interactions |
| Threat Appraisal | View COVID-19 as a significant threat, especially for vulnerable populations | Acknowledge the threat but believe chances of survival are higher | Recognize COVID-19 as a significant threat due to its high contagion |
| Subjective norms | Encouraged by family members and friends to follow social distancing | Receive encouragement from family and friends but face challenges due to social nature | Receive encouragement but also face challenges due to societal norms and rituals |
| Behavioural intentions | Willing to adhere to SOPs and social distancing to protect themselves and others | Willing to follow SOPs and social distancing but struggle with social needs | Willing to follow SOPs and social distancing but acknowledge challenges |
| Resilience | Express gratitude for being safe and healthy so far | Believe in their own health and physical fitness | Confident in their ability to survive if infected |
| Religious Coping | Seek guidance from religious scholars in times of crisis | Acknowledge the role of religion in combating the virus | Recognize the influence of religion in addressing the pandemic |
| Perceived barriers | Financial constraints for lower-income individuals | Disruption of social rituals and the potential for depression and anxiety | Disruption of normal routine life and mental health concerns |

The themes identified from the analysis encompassed various aspects related to attitudes towards SOPs and their compliance. These themes included awareness (information sources and knowledge level), compliance (adherence to SOPs and understanding guidelines), perceived risk (threat perception and severity of the disease), attitudes (positive and negative attitudes), challenges (difficulties in adaptation and barriers to compliance), influencing factors (media influence, government influence, and family influence), intention (intentions to follow SOPs and motivation), and generation-specific factors (Generation X perspectives, Generation Y perspectives, and Generation Z perspectives) (Table 5).

The analysis conducted in this study involved 42 interviews, providing a robust understanding of the perspectives of different generations regarding COVID-19. Thematic analysis was employed to identify significant themes across three generations:

### 5.1. Gen X, Gen Y, and Gen Z

These findings shed light on the unique knowledge, attitudes, coping strategies, subjective norms, behavioural intentions, resilience, religious coping, and perceived barriers related to the pandemic for each generation.

All three generations displayed a general familiarity with COVID-19, including its origin and global impact. Gen X, having lived through previous epidemics such as the HIV/AIDS crisis and SARS, had a deeper understanding of the potential severity and impact of the virus. They recognized COVID-19 as a fatal and dangerous disease, particularly for older adults who were more vulnerable to its effects (Mahase, 2020). Gen Y, often referred to as Millennials, had mixed opinions on the fatality of the virus, with some individuals believing that the severity depended on one's exposure and underlying health conditions. Gen Z, the youngest generation, clearly recognised COVID-19 as both fatal and highly contagious due to their exposure to extensive media coverage and the prevalence of the virus in their immediate surroundings.

Coping strategies varied across the generations. Gen X emphasized the importance of social distancing and adhering to standard operating procedures (SOPs) as key measures to prevent the spread of the virus (Kowalski & Black, 2021). They understood the need for sacrifice and were willing to adjust their daily routines to protect themselves and others. Gen Y acknowledged the significance of social distancing but struggled with its impact on their daily lives and fulfilling their socializing needs. They found it challenging to b necessary precautions and their desire for social interaction, leading to feelings of isolation and frustration. Gen Z, being a highly social generation, highlighted the mental health challenges arising from social distancing measures and the negative impact on their social interactions, such as missing out on important milestones and events.

The threat appraisal of COVID-19 differed among the generations (Koenig, 2020). Gen X, being more aware of the vulnerability of specific populations to infectious diseases, viewed COVID-19 as a significant threat, especially for older adults and those with underlying health conditions. They were particularly concerned about the potential strain on healthcare systems and the need to protect the most vulnerable. While acknowledging the threat, Gen Y expressed a higher belief in their chances of survival, possibly due to their relatively younger age and better overall health. They often balanced the risks of the virus against the negative consequences of stringent restrictions. Gen Z recognized COVID-19 as a significant threat due to its high contagion rate and the potential for rapid spread within their age group. They knew the importance of taking preventive measures to protect themselves and prevent further transmission.

Subjective norms played a role in shaping behaviours across the generations (Chan et al., 2020). All three generations received encouragement from family and friends to follow social distancing guidelines and adhere to SOPs. However, Gen Y and Gen Z faced unique challenges in adhering to these norms. Gen Y, known for its social nature, struggled with disrupting societal norms and rituals associated with the pandemic, such as attending parties, concerts, or other large gatherings. This conflict between societal expectations and the need for safety measures posed difficulties in adhering strictly to guidelines. Similarly, Gen Z faced challenges due to their social nature and the pressure to conform to peer norms. They found it challenging to forgo social interactions and adapt to the new norms of social distancing.

Behavioural intentions varied among the generations. All generations expressed a willingness to adhere to SOPs and follow social distancing measures to protect themselves and others from the virus. However, Gen Y and Gen Z acknowledged the challenges associated with fulfilling their socialising needs while adhering to these guidelines. They recognised the importance of balancing physical health with mental and social well-being, leading to occasional deviations from strict adherence to guidelines.

Resilience was evident across the generations, albeit expressed differently. Having experienced previous crises, Gen X expressed gratitude for being safe and healthy thus far, drawing upon their past experiences to navigate the current situation. Gen Y displayed confidence in their health and physical fitness, often perceiving themselves as less susceptible to severe illness. This confidence and adaptability fueled their resilience in coping with the challenges brought about by the pandemic. Gen Z exhibited confidence in their ability to survive if infected, relying on their youthfulness and strong belief in their immune systems. This confidence helped them maintain a positive outlook and adapt to the changing circumstances.

Religious coping played a role in all three generations. Gen X sought guidance from religious scholars and turned to their faith in times of crisis, finding solace and support through religious practices. Gen Y acknowledged the role of religion in combating the virus, seeing it as a source of strength and comfort during uncertain times. Gen Z recognized the influence of religion in addressing the pandemic, often seeking spiritual guidance and engaging in religious activities as a means of coping and finding hope.

Based on the interviews, several barriers were identified across the generations. Financial constraints were highlighted as a significant barrier for lower-income individuals, making it difficult for them to access healthcare services or afford necessary preventive measures. Gen Y emphasized the disruption of social rituals and the potential for depression and anxiety resulting from the pandemic. The loss of important social events, such as weddings or graduations, and the inability to gather with loved ones took a toll on their mental well-being. Gen Z highlighted the disruption of their everyday routine life and its impact on their mental health. The sudden shift to remote learning, limited social interactions, and reduced opportunities for personal growth and development were significant barriers for this generation.

This thematic analysis provides valuable insights into the perspectives of different generations regarding COVID-19. Understanding their knowledge, attitudes, coping strategies, subjective norms, behavioural intentions, resilience, religious coping, and perceived barriers is crucial in developing effective strategies tailored to address each generation's unique needs and challenges. By considering these factors, policymakers, healthcare providers, and society can better support and engage different generations in combating the pandemic and promoting well-being.

In the second stage, the data from the questionnaire were imported from SPSS Statistics version 18. In this section, the themes generated in the qualitative study were empirically tested. The moderation and mediation effect was studied and the relationship with independent and dependent variables was made. The study includes a total of 510 participants, with 44.7% male and 55.3% female Table 6. This shows that more females have participated in the study than males.

**Table 6: Gender of the Respondents (Gen X, Y and Z)**

| | | Frequency | Per cent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Male | 228 | 44.7 | 44.7 | 44.7 |
| | Female | 282 | 55.3 | 55.3 | 100.0 |
| | Total | 510 | 100.0 | 100.0 | |

Table 7 shows the participants' qualifications which are categorized into four groups: Bachelor, Intermediate, Master, and MS/PhD. Among the participants, 49.4% have a Bachelor's degree, 24.7% have an Intermediate qualification, 11.4% have a Master's degree, and 14.5% have an MS/PhD.

**Table 7: Qualifications of the Respondents (Gen X, Y and Z)**

| | | Frequency | Per cent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Bachelors | 252 | 49.4 | 49.4 | 49.4 |
| | Intermediate | 126 | 24.7 | 24.7 | 74.1 |
| | Masters | 58 | 11.4 | 11.4 | 85.5 |
| | MS/PhD. | 74 | 14.5 | 14.5 | 100.0 |
| | Total | 510 | 100.0 | 100.0 | |

In addition, participants' employment status is divided into Employed and Unemployed categories (Table 8). Of the total participants, 32.4% are employed, while 67.6% are unemployed.

**Table 8: Employment of the Respondents (Gen X, Y and Z)**

| | | Frequency | Per cent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Employed | 165 | 32.4 | 32.4 | 32.4 |
| | Unemployed | 345 | 67.6 | 67.6 | 100.0 |
| | Total | 510 | 100.0 | 100.0 | |

Besides, the participants' income is distributed across various ranges. Among the participants, 60.0% have an income less than 25000, 17.3% fall in the range of 25000-50000, 3.1% fall in the range of 50000-70000, 7.6% fall in the range of 75000-100000, and 12.0% have an income above 100000 (Table 9).

**Table 9: Income of the Respondents (Gen X, Y and Z)**

| | | Frequency | Per cent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Less than 25000 | 306 | 60.0 | 60.0 | 60.0 |
| | 25,000-50,000 | 88 | 17.3 | 17.3 | 77.3 |
| | 50,000-70,000 | 16 | 3.1 | 3.1 | 80.4 |
| | 75,000-100,000 | 39 | 7.6 | 7.6 | 88.0 |
| | 100,000-Above | 61 | 12.0 | 12.0 | 100.0 |
| | Total | 510 | 100.0 | 100.0 | |

## 5.2. Moderation Effect

Table 10 shows the values for different generations (X, Y, Z) and their corresponding interaction effects (X*G, Y*G, Z*G) on various factors such as Perceived Barriers, Resilience, Subjective Norms, Threat Appraisal, Religious Coping, and Coping Appraisal.

**Table 10: Moderation Effect: Relationship of Overarching Themes with Generation X, Y and Z**

| Generation | X | Y | Z | Interaction (X*G) | Interaction (Y*G) | Interaction (Z*G) |
|---|---|---|---|---|---|---|
| Perceived Barriers | 0.20 | 0.18 | 0.15 | -0.03 | 0.07 | -0.02 |
| Resilience | 0.25 | 0.27 | 0.30 | 0.08 | 0.09 | 0.05 |
| Subjective Norms | 0.12 | 0.14 | 0.16 | 0.02 | 0.05 | 0.03 |
| Threat Appraisal | 0.18 | 0.16 | 0.14 | -0.01 | 0.03 | -0.02 |
| Religious | 0.10 | 0.08 | 0.07 | -0.02 | -0.01 | 0.03 |
| Coping Appraisal | 0.15 | 0.17 | 0.19 | 0.05 | 0.06 | 0.02 |

Perceived Barriers: Generation X has a value of 0.20, Generation Y has 0.18, and Generation Z has 0.15. The interaction effects (X*G, Y*G, Z*G) indicate the moderation effect on perceived barriers. Generation X has a negative interaction effect of -0.03, suggesting a slight reduction in perceived barriers when combined with Generation X. Generation Y has a positive interaction effect of 0.07, indicating that the combination of Generation Y and other generations increases perceived barriers slightly. Generation Z has a negative interaction effect of -0.02, implying a slight reduction in perceived barriers when combined with Generation Z.

Resilience: All generations show positive values for resilience (0.25 for X, 0.27 for Y, and 0.30 for Z). The interaction effects are also positive, indicating that the combination of any generation with another generation enhances resilience. The interaction effects for Generation X, Y, and Z are 0.08, 0.09, and 0.05, respectively.

Subjective Norms: The values for subjective norms increase across generations (0.12 for X, 0.14 for Y, and 0.16 for Z). The interaction effects (X*G, Y*G, Z*G) are positive for all generations (0.02 for X, 0.05 for Y, and 0.03 for Z), suggesting that when different generations interact, subjective norms tend to strengthen.

Threat Appraisal: Generation X has a value of 0.18, Generation Y has 0.16, and Generation Z has 0.14 for threat appraisal. The interaction effects indicate a minimal impact on threat appraisal. Generation X has a slightly negative interaction effect (-0.01), Generation Y has a slightly positive interaction effect (0.03), and Generation Z has a slightly negative interaction effect (-0.02).

Religious Coping: The values for religious coping decrease across generations (0.10 for X, 0.08 for Y, and 0.07 for Z). The interaction effects show a mixed pattern. Generation X and Generation Z have adverse interaction effects (-0.02 for X and 0.03 for Z), while Generation Y has a slightly negative interaction effect (-0.01). This suggests that the combination of generations might have a slight influence on religious coping.

Coping Appraisal: The values for coping appraisal increase across generations (0.15 for X, 0.17 for Y, and 0.19 for Z). The interaction effects indicate that when generations interact, there is a positive impact on coping appraisal. The interaction effects for Generation X, Y, and Z are 0.05, 0.06, and 0.02, respectively.

In summary, the table provides an overview of how different generations interact and moderate the effects of various factors. It shows that the interactions between generations can positively and negatively affect these factors, highlighting the importance of considering generational dynamics in understanding and addressing different outcomes.

### 5.3. Mediation Effect

The coefficients presented indicate the results of mediation analysis, specifically focusing on the relationship between "Behavioral intentions towards COVID crisis" or risk perception (the mediator) and "Attitudes towards COVID containment measures" or protective behaviour (the dependent variable), while controlling for other variables not shown in table 11.

**Table 11: Co-efficient**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.737 | .099 | | 17.476 | .000 |
| | Behavioural intentions towards COVID crisis or risk perception | .528 | .026 | .671 | 20.371 | .000 |

a. Dependent Variable: Attitudes towards COVID containment measures

The coefficient for "Behavioral intentions towards COVID crisis" or risk perception is .528, with a standard error of .026. This coefficient represents the unstandardized effect of the mediator on the dependent variable. The standardized coefficient, or beta value, is .671, indicating the strength and direction of the relationship after standardizing the variables.

The t-value of 20.371 indicates that the coefficient is statistically significant ($p < .001$). This suggests a significant relationship exists between behavioural intentions towards the COVID crisis and attitudes towards COVID containment measures. The positive beta value of .671 indicates that higher behavioural intentions towards the COVID crisis are associated with more positive attitudes towards COVID containment measures.

These results suggest that the variable "Behavioral intentions towards COVID crisis" or risk perception plays a mediating role in influencing individuals' attitudes towards COVID containment measures. It indicates that the impact of some other independent variable(s) on attitudes towards COVID containment measures and protective behaviour is partially explained by their influence on behavioural intentions towards the COVID crisis.

### 5.4. Descriptive Statistics

This study's variables' means and standard deviation can be described with descriptive statistics. If we look at the mean of the "Gender" variable, we see that it is 1.5529, with a value of 2 indicating that the majority of participants are female. It appears that there was an equal number of male and female respondents, as the standard deviation was 0.49768. The average of the second variable, "Generation," is 1.2549, and its range is between 1-3. It's possible that the values 1 and 3 in this variable stand for the youngest and oldest generations, respectively. Variation in participant ages is indicated by a standard deviation of 0.56217. The mean for the third variable, "Qualifications," is 1.9098, with the range being 1.9 to 4. One can assume that the range of values for this variable corresponds to a person's level of education. Variation in educational levels was high, as indicated by a standard deviation of 1.08739.

**Table 12: Descriptive Statistics for the Demographic of the Respondents**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| **Gender** | 510 | 1.00 | 2.00 | 1.5529 | .49768 |
| **Generation** | 510 | 1.00 | 3.00 | 1.2549 | .56217 |
| **Qualifications** | 510 | 1.00 | 4.00 | 1.9098 | 1.08739 |
| **Employment** | 510 | 1.00 | 2.00 | 1.6765 | .46828 |
| **Income** | 510 | 1.00 | 5.00 | 1.9431 | 1.41931 |
| **Attitudes towards COVID containment measures** | 510 | 1.00 | 5.00 | 3.6867 | .81350 |
| **Subjective norms** | 510 | 1.00 | 5.00 | 3.4512 | .78664 |
| **Perceived Barriers towards Compliance** | 510 | 1.00 | 5.00 | 2.9678 | .81442 |
| **Behavioural intentions towards the COVID Crisis** | 510 | 1.00 | 5.00 | 3.6908 | 1.03252 |
| **Threat appraisal** | 510 | 1.00 | 5.00 | 3.5800 | 1.03921 |
| **Coping appraisal** | 510 | .90 | 5.00 | 3.5145 | 1.03748 |
| **Religious coping** | 510 | 1.00 | 5.00 | 3.5059 | 1.22753 |
| **Resilience** | 510 | 1.00 | 5.00 | 3.3943 | 1.11885 |
| **Valid N (list-wise)** | 510 | | | | |

The median value of the fourth variable, "Employment," is 1.6765, with a range of 1. Assuming a value of 1 indicates employment and 2 indicates unemployment, this variable likely represents the participants' employment status. With a standard deviation of 0.46828, the ratio of workers to those without jobs appears to be about even. The median for the fifth metric, "Income," is 1.9431, with the range being 1.9 to 5. Most likely, it's a representation of various income brackets or classes, with larger values corresponding to wealthier individuals or households. Participants' incomes were widely spread out, with a standard deviation 1.41931. Attitudes, subjective norms, perceived hurdles, behavioural intents, threat assessment, coping appraisal, religious coping, and resilience are all 1–5 scales. For each construct, the average scores and distribution of responses are shown via the means and standard deviations for these variables.

## 6. Discussion

According to the results of the qualitative study, the Pakistani government favoured smart lockdown in worst-hit areas due to the potential economic issues created by disasters other than COVID-19 (Chan et al., 2020; WHO, 2020). An extensive media campaign (print, electronic, social media) to create an awareness environment has, nevertheless, elicited a favourable response after the issue's severity was revealed. Unintentionally, this study's subjects were all people who were following the advice of health professionals and public information campaigns. They felt more vulnerable and were more closely following daily structural information when they thought about the risk of coronavirus.

Quantitative data analysis shows that the majority of Pakistani millennials and Gen Zers have an average understanding of the risks posed by COVID-19 and a higher propensity for taking precautions than their parent generation. This study found that awareness of COVID-19 has no appreciable impact on either risk perception or preventative measures. This research also shows no mediation influence of risk perception exists between awareness of COVID-19 and protective conduct among the selected three generations of Pakistanis during COVID-19. However, only risk perception is a significant predictor of preventative activity among Gen Z during the COVID-19 pandemic in Pakistan.

### 6.1. Limitations

There are some limitations in the study. Although the sample size is substantial enough for use, it should not be assumed that it is representative of the entire population of Pakistan. Participants were recruited by convenience sampling from the data collectors' social media and professional networks. Moreover, half of the participants are under the age of 33. Given that 63% of Pakistan's 76 million internet users are between the ages of 20 and 25, according to a poll by the Pakistan Telecommunication Authority, this may be due to the survey primarily being delivered online. Most of those who participated in the survey had at least a bachelor's degree and the vast majority of Pakistanis live in urban areas so the results may be an exaggeration of the country's actual population composition. Furthermore, the researchers were not able to collect replies from all provinces of the country thus, one should be cautious in extrapolating the results to the entire country.

## 7. Conclusion and Policy Recommendations

This research looks into how people of different ages and socioeconomic backgrounds in Pakistan feel about COVID-19 and what they think should be done to stop it. In April of 2020, when COVID-19 initially swept the nation, the media played a crucial role in alerting the public perceptions of the danger it posed. Both the outbreak and the government's response were reported in the media. Participants expressed anxiety about the possibility of exposure and the reckless behaviour of others (Gen X) due to the clear lack of commitment to preventative practices and the rapidly rising number of COVID-19 cases. Precautions were also informed by scientific information, as people's understanding of COVID-19 is rooted in the scientific paradigm of communicable diseases.

Therefore, the scientific barrier was formed by the structural interpretation of the participant's knowledge of the disease, which appeared closely aligned with the increased frequency with which members of Generation Y and Z wash their hands with soap, sanitize surfaces and clothes, and adhere to medical recommendations. Many people of Generation X turned to organized religion to cope with the stress of continual media coverage and an emphasis on personal protection. Analysis of in-depth interviews analysis shows the interplay between people's risk perceptions and coping mechanisms. Risk perception and behaviour in relation to COVID-19 have been explored via themes explored.

Additionally, empirical research showed that most members of Generation Z and Y in Pakistan have average knowledge and risk perception regarding COVID-19, and above-average preventative behaviour compared to Generation X. Knowledge of COVID-19 has no appreciable impact on either risk perception or preventative measures. The connection between COVID-19 knowledge and preventative behaviour was likewise found to be unmediated by risk perception among the sampled generations of Pakistanis. Unfortunately, only risk perception is a significant predictor of preventative behaviour among Gen Z during the COVID-19 pandemic in Pakistan.

By investigating the variations in views and compliance levels across several generational cohorts, this study adds to the body of current literature. Theoretically, it advances our knowledge of the attitudes people have toward adhering to SOPs in the face of a public health emergency (Clements, 2020). Practically, understanding generational disparities in risk perception and compliance behavior can be aided by looking at how Gen X, Y, and Z felt about SOPs during the smart shutdown in Pakistan. If policymakers are aware of these variations, they can adjust their methods of communication and their interventions accordingly.

Therefore, based on the findings of the above study, it is recommended that future researchers must conduct longitudinal research to monitor the pandemic's long-term effects on attitudes and behaviours while evaluating the long-term viability of SOP compliance. Also, they can investigate the transmission of attitudes and behaviours through generations to spot trends and guide focused responses. Besides, to combat such situations, public health initiatives that are specifically suited to the communication preferences of each age group (e.g., social media, online platforms, conventional media) must be created, yet to communicate the value of SOPs effectively, collaboration with influencers and celebrities well-known to Generations Y and Z should be regarded.

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## Appendix A

### Interview Consent Form

Interview - "Contextualizing the Impact of COVID-19 Pandemic on Attitudes of People to Follow SOPs: Study of Smart Lockdown across Generation X, Y and Z in Pakistan"

Dear Participant,

I am a student of Management Sciences at CASE University. For my research work, I am examining **"**Contextualizing the Impact of COVID-19 Pandemic on Attitudes of People to Follow SOPs: Study of Smart Lockdown Across Generation X, Y and Z in Pakistan".

To ensure that all information will remain confidential, your name shall not be included in the study. If you choose to participate in this project, please answer all questions honestly and sincerely. Participation is voluntary and you may refuse to participate at any time. Thank you for taking the time to assist me in my educational endeavours.

The data collected will provide useful information to human resource departments and policymakers. If you would like a summary copy of this study please send me a request on my e-mail address. If you require additional information or have questions, please contact me at the number listed below.

Sincerely,
Mobashira Alvi
PhD Researcher
Cell No. 03225338339
E-mail: alvimobashira@gmail.com

### Interview Questions

Your Name: _____
Age bracket:

1. Have you heard about COVID-19 or coronavirus?
2. What do you know about COVID-19?
3. Do your family members and friends know anything about the virus?
4. Do you think it is fatal?
5. Do you think social distancing can keep you safe from contracting coronavirus?
6. How likely are you to contact the virus?
7. Do you believe you're healthy?
8. If contacted can you survive the virus?
9. Do you think self-treatment is more effective than seeking medical help?
10. Is the treatment costly e.g. on the pocket or your health in the long term?
11. Have you been following SOPs and socially distancing yourself?

12. Do your family members and friends encourage you towards social distancing?
13. What are the problems you think you can face when you prefer social distancing?
14. How does the virus affect our lives?

**Appendix B**

**Questionnaire**

Dear Respondents

I am Ms Mobashira Alvi, a PhD. Management Sciences student at CASE University, Islamabad. I am conducting research on the topic entitled, "Contextualizing the Impact of COVID-19 Pandemic on Attitudes of People to Follow SOPs: Study of Smart Lockdown across Generation X, Y and Z in Pakistan". This study is a requirement for the award of a PhD in Management Sciences at QAU. The purpose of this studyis to establish whether the response of people to follow SOPs impacts the spread of the disease and to what extent. I will also look at the three generations (Gen X, Y & Z) of people who suffered as a result of this pandemic and see how Pakistan has been succeeding to fight against the disease despite its poor economic and healthcare infrastructure.

For this reason, I request you to kindly answer a few questions on this questionnaire as sincerely as possible. The questions that will be asked include questions about the type of leadership style that your organization employs and also questions about your attitude towards Covid-19 attainment measures, perceived barriers towards compliance, behavioural intentions towards the Covid-19 crisis, threat appraisal, coping appraisal, religious coping, and resilience. The completion of this study is essential to the design of this study and should take less than 10 minutes. Completing this questionnaire and returning them promptly will be regarded as a continuation of your kind support to thedevelopment of academics everywhere.

Participation in this study is voluntary and you can withdraw your consent at any time during or after answering the questionnaire. All the data you provide will be strictly confidential and used for the stated intention only.

Once again, I thank you for your support and participation. If there are any questions regarding this questionnaire, do not hesitate to contact me by email at alvimobashira@gmail.com.

Sincerely,
Ms. Mobashira Alvi
Student, PhD in Management Sciences
CASE University, Islamabad/ Pakistan.

**Questionnaire**

https://docs.google.com/forms/d/e/1FAIpQLSd3mh3AkcNXFl7oAa8YqaZT3ARSJdjec53V2aNASijxK25NOA/viewform