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The Impact of Climate Change Coverage on Public Adherence towards Health Threat:
An Empirical Validation of the Health Belief Model

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Abstract

Owing to the emerging challenge of smog and the controversies over its causes and solution, the current study seeks to find out the influence of media messages on health-related behavior and the mediating role of the threat perception and perceived benefits towards health-related behaviors in Pakistan. A cross-sectional research design vis-à-vis survey method was used to investigate the influence of media, perceived threat, and perceived benefits on the health-related behaviors of the public. For this purpose, a survey was conducted in Lahore (including urban, peri-urban areas) using a close-ended questionnaire. A sample of 232 respondents was obtained. Data were analyzed Smart with PLS software to examine the media influence on smog-related health behavior. The findings indicated that media positively influence the smog-related health behavior of the public. It was found that the relationship between media and smog-related health behavior is interceded by perceived benefits and perceived threats. Furthermore, perceived threats were found to be a stronger predictor in determining the media and smog-related health behaviors. The implications of the findings are discussed.

Keywords: Health Belief Model, Empirical Validation, Health Threat, Public Adherence, Perceived Benefits, Climate Change

Introduction

Climate change is an essential issue under debate at a global level. "Human activities and atmospheric conditions cause climate change" (Parry et al., 2007, p.6). As a result of this poor air, human health and the global atmosphere are at high risk (Ghorani-Azam, Riahi-Zanjani, & Balali-Mood, 2016). Damage to the environment is responsible for several physiological severe diseases, like lungs cancer, cardiovascular and respiratory diseases respectively (Colls & Micallef, 1997; Ghorani-Azam et al., 2016; Turner et al., 2011), but also affects the public mentally (Ali, Ullah, & Li, 2018). One of the severe upshot of climate change is smog, as an environmental issue across the south Asian region especially posing significant threats to public health (Khokhar, Yasmin, Chishtie, & Shahid, 2016)

Pakistan, as an essential and urbanized country in South Asia (Ali & Athar, 2010), is among the top ten countries suffering due to extreme climate change for the last many years (Khan, Gao, & Abid, 2020) and is considered as 7th most vulnerable country to climate change in the world (Raja et al., 2018). Air Quality Index (AQI), assessed in Pakistan's major cities, especially Lahore, is unhealthy and dangerous for health. Since 2013, Lahore has been growing at 4% annually, facing many problems every year due to heavy smog. Consequently, it has shifted the attention of all stakeholders to counter its impacts (Ali & Athar, 2010; W. Raza et al., 2020; Sánchez-Triana, Enriquez, Afzal, Nakagawa, & Khan, 2014).

In today's world of mediated realities, media play a significant role in creating awareness of issues, problems, and images to the public (Ji, Hu, & Muhammad, 2016), so the public should be encouraged to take action by changing their behavior and adopting preventive measures (Chen & Cai, 2019). In this regard, studies in the past have emphasized prodding behavioral adaptation between the affected people including the most and the least (Forman, Solomon, Morello-Frosch, & Pezzoli, 2016). Some pragmatic studies have shown that causes of the public concern to change behavior depending upon the way they have been informed about taking prudent decisions (Malhotra & Kuo, 2008). Health communication scholars argue that media helps to attract, highlight perception needs, and eventually result in behavioral changes (McAlister, Srinivasan, Jindal, & Cannella, 2016), pro-

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environmental intentions, and behavior (Lee & Cho, 2020). Therefore, scientists worldwide have shifted their attention to find out the known but veiled influence of climate change hazards on human health. In this regard, many pragmatic studies have documented that poor air quality can damage public health in several ways. However, yet insubstantial apprehension of the behavioral effect of air quality is known and much of this area remains unscrutinized (D'Antoni, Smith, Auyeung & Weinman, 2017). Likewise, Kulmala (2015) discusses this issue by emphasizing that haze or smog requires a deeper understanding of the extraordinary complexity of exposure to smog pollution associated with individual actions, thus reducing severe health effects on people.

In the current era, studies highly endorse the use of media to stimulate the public emotionally and motivate their behavior to recognize the public's risk perception (Oh, Lee, & Han, 2021), which has been manifested in Pakistan during numerous health campaigns, especially in the case of dengue (Raza, Iftikhar, Mohamad, Pembecioğlu, & Altaf, 2020). The present study is based on the notion of 'information processing' regarding health behavior. Skov et al. (1991) established that one of the two types of health behavior is "actions aimed at self-protection" behavior in response to smog alerts. The studies on the role of mass media in the health sector to change public behavior towards climate change, particularly air pollution /smog, are few (Wang, Kim, Moon, & Song, 2020). Media has the power to influence human behavior by persuading people effectively (Wojdynski & Evans, 2016). In Pakistan, where media access and exposure are open to the public, it is yet to be probed how media alerts affect the health behavior of the people. This study, therefore, intends to understand the extent to which smog warnings and indices from mass media influence the protective behavior of the general public in Lahore.

Literature Review and Theoretical Framework
Smog and its impact on Health
Smog has been declared the most deadly form of air pollution across the globe. This hazardous smog has become the novel cause of acute health risks for the South Asian region. In the South Asian region, Pakistan is under the smog blanket for the past few years (Peng, Xiao, Wang, & Zhang, 2020). During the 2012 to 2015 winter tenure, Pakistan experienced denser to moderated fog turns smog chiefly because of transboundary pollution from India. As a result, Pakistan's vulnerability to climate change is increasing by many factors. It needed to be addressed by creating societal awareness to influence public adherence to mitigate health threads due to environmental degradation (Rauf et al., 2017). In the world ranking of the most populated cities of the world, Lahore is ranked at 16th and biggest metropolitan city of Pakistan affected by fog (Saleem et al., 2019; Raza et al., 2020). Moreover, it is further investigated that Pakistan air pollution has an annual PM 2.5 average of 74.3 μg/m³ and smog has become a fifth season. A study revealed that Lahore which is the second-largest city in Pakistan has been badly affected by the smog (Raza et al., 2020). Lahore was severely hit by smog.

Role of Media in health awareness
Mass Media is consistently identified as a powerful, quick, and central tool to inform the masses. It constructs reality for the public (Yousaf, 2018) and creates awareness, and frames conflicts in our mediated societies (Yousaf, Rahman, & Yousaf, 2020). In the contemporary era from the past many decades, mass media access and reach have enormously enhanced due to technological advancements about all of the social concerns (Raza, Zaman, & Iftikhar, 2021). Similarly, Debahuti & Tilak (2020) noted that mass media is the best choice in shaping public opinion on environmental issues and their solutions.

Media has been reported as a central source for climate change that shapes public understanding and guides the public about climate change threats and practical solutions to be adopted by the public to address the problem highlighted by the media (Shapiro & Bolsen, 2018). İnci, Sancar, & Bostancı (2017) found that mutual collaboration of various forms of mass media information is needed to influence the behavior of the public. Media content does shape public opinion and behaviors (Christen & Huberty, 2007; Gunther, 1998; Gunther & Christen, 2002; Raza et al., 2020; Raza, Zaman, Iftikhar, & Shafique, 2021).

D'Antoni, Smith, Auyeung, & Weinman, 2017; Littlejohn & Foss (2008) contended that precautionary information about air quality and its adverse effects could quickly be reported when air quality reaches specific dangerous levels. Inconsistent with this, it is noted that media brings behavioral changes on air pollution in the form of content based on storylines to define climate

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problems (Shapiro & Bolsen 2018). Media coverage corresponds to behavioral changes (Georgiadis, 2013). It plays the role of a bridge between people and government. In other words, media form and gauge public opinion in favor or against any cause, movement, or activity. Communication keeps on debating the importance of media information and reporting, which encourages the public to adopt precautionary behavior and reduce the alarming situation related to health (Raza et al., 2020).

Media effects on behavior are a source of debate for several decades (Tewksbury & Scheufele, 2009), that "currently three renowned theories of media effects include agenda-setting, framing, and priming" (p.17-30). Awareness of smog corresponds to preventive measures and consequently plays a vital role in bringing betterment regarding healthcare in any given community (Saleem et al., 2019). Media create awareness among the public about expected risks and the threat of smog, making their perception in the continuity of building public perception about health risks (Wang et al., 2017).

Media and its influence on how people evaluate think, and the act of citizenry towards climate change is a fertile area of research (Eurobarometer, 2009; Lorenzoni & Hulme, 2009; Ryghaug, Holtan Sørensen, & Næss, 2011; Wei, Zhu, Marinova, & Wang, 2017). In Pakistan, many studies have been conducted to examine the role of media in motivating people to adapt to pro-healthy behavior (Hingorjo & Memon, 2019; Iftikhar, Aziz, & Yousaf, 2019; Iftikhar & Mughal, 2017; Obregón et al., 2009; Raza et al., 2020). However, in Pakistan, media give marginal coverage to human development issues such as health, environment, and pollution (Kamboh & Yousaf, 2020). Therefore, there is a need to persuade media practitioners to pay attention to these issues vis-à-vis advocacy campaigns to increase the coverage of these issues in media

The above argument is enough to indicate the imperative need to carry studies in Pakistan regarding public health behavior regarding air pollution issues in the most affected area, i.e. Lahore (Ali & Athar, 2010; Sánchez-Triana et al., 2014). Thus, this current study bridges the gap in the existing research, especially in Pakistan's context, to investigate media coverage on public adherence towards health threats due to smog in Pakistan. This elucidation calls for the media's role as an independent factor to influence public environmental health behavior. The current study is based on the Health Belief Model (HBM), which is one of the primary notions to prognosticate health behavior (Abraham & Sheeran, 2005) to understand better the widespread failure of screening programs for tuberculosis (Carpenter, 2010; Glanz, Rimer, & Viswanath, 2008; Rosenstock, 1974a).

Health beliefs and behavior

In the last twenty years, with the help of value expectancy theories such as HBM and the Theory of Reasoned Action (TRA) and its extended version, the Theory of Planned Behavior (TPB), a considerable effort has been made to understand the antecedents of behavior change (Glanz et al., 2008). The health belief model (HBM) has been applied in numerous studies to find out the factors of particular behavioral outcomes based on the major facts: the adherence to reduce health threat (for example illness or infection) and the perception of the efficiency of adopted behavior that can prevent the threat (Becker et al., 1978; Raamkumar, Tan, & Wee, 2020). The study related to health behavior is an important area for both healthy and unhealthy populations' behavior to improve the health conditions. The study of health behaviors in healthy and unhealthy populations is an important area where health-related strategies can improve health (Conner & Norman, 2017).

Health behavior change can be optimal if an individual successfully perceives a series of constructs that may alter his behavior (Jones et al., 2015). From the individual's point of view, the prospect of health-related behavior is modifying human behavior to minimize environmental pollution which in turn affects human health (Brody, Zahran, Vedlitz, & Grover, 2008). Thus, the individual avoids an adverse health condition (Jiya & Agbola, 2018; Rosenstock, 1974a). All human beings get more or less motivation from their surroundings directly or indirectly. Spreading information and awareness at the public level to adopt protective measures are few major factors that develop pro-environmental behavior (Rauf et al., 2017). Smog has affected the well-being of humans and other living creatures, travel, and other aspects of finances.

To improve and save the public from climate hazards (Forman et al., 2016), "endorsement of alteration in human behavior among most as well as the least privileged public" Therefore, more efforts should be shifted towards communication and education with the targeted public to bring alteration in their attitudes and behaviors (p.1). Moreover, a person's belief about available and effective choices of action determines individual's it is an individual's beliefs about the availability

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and effectiveness of various courses of action that determine a health behavior (Ng, Kankanhalli, & Xu, 2009). Rosenstock (1974b) explains that human behavior relies on the significance of various alternatives available to them. Similarly, Forman, Solomon, Morello-Frosch, & Pezzoli (2016) noted that "more efforts should be shifted towards transformations in attitudinal and behavioral alteration emphasized on coordinated public communication and education" (p.1). In this regard, information-based alerts by media and some other information sources can produce behavioral changes in protective behavior regarding asthma (Wen, Balluz, & Mokdad, 2009). Public education to adopt protective behavior against climate change threats by providing the information has also contended (Sajjad, Asmi, Chu, & Anwar, 2020). In the light of the above literature, we hypothesize that;

H1: *There is a highly positive relationship between media coverage and preventive behavior towards smog.*

Perceived Threat towards Smog

The "perceived threat" component combines two concepts, 'perceived susceptibility and 'perceived severity in the Health Belief Model. This combined construct has relevant to public health-related behaviors. In this regard, Becker et al.(1978) and later on Abraham & Sheeran(2005) defined that discussed that "the representation of individual's health and health behavior is based on two concepts; "Perceived Threat" was the perceived susceptibility of sickness or illness and its predicted severity of the bad results of illness" (p 31). Champion and Skinner (2008) define perceived severity as' "feeling of illness which gives serious medical issues that result in disability or health hazards that can hinder social interactivity" (p. 47). A feeling of illness give serious medical issues that result in disability or health hazards that can hinder the social interactivity

In comparison, Perceived Severity is related to a person's subjective belief that how many diseases can harm him (McCormick-Brown, 1999). To this end, Champion and Skinner (2008) noted that when people are confronted with severe uncertain conditions, this may diminish the effect on other variables of HBM (Jones et al., 2015). When one believes that one is susceptible to any health problem that can be serious and in return, person adheres or accept the protective behavior (Champion & Skinner, 2008; Haghighi et al., 2017). Therefore, in many health contexts like climate change, the perceived threat is a component that originated by combining two constructs: perceived susceptibility and perceived severity (Jones et al., 2015).

However, for the future findings and significance of this concept, Glanz et al. (2008 recommend that "in near future, any challenges related to studying of HBM will include detailed testing of the relation between other constructs" (p. 6). The level of a perceived threat to an individual's health is different in response to smog climate change conditions, like smog (Wei et al., 2017). Moreover, it is also observed that higher intention to adopt a particular action to adopt a precautionary action threat perception during smog (Liu, Ouyang, & Cheng, 2019; Wang, Fang, & Law, 2018). Perceived threats refer to the perception of a disease and its potential hazards that vary from individual to individual. In case of any suspected illness, people always build their perception about susceptibility and severity. These two are combined to form perceived threats (Glanz et al., 2008; Yu et al., 2020).

Many studies conceptualize this construct as a "perceived threat" of one's perception, mainly in environmental phenomena (Akompab et al., 2013; Klimanska, Klymanska, & Haletska, 2020; Rollins et al., 2018). Evidence shows that 'Perceived Threat' has been widely used in the literature explaining that people take action to prevent illness as one construct perceived threat in the context of the environment (Glanz et al., 2008; Jones et al., 2015; Lindell, Huang, Wei, & Samuelson, 2016; Radisic et al., 2016; Wei et al., 2017; Yu et al., 2020).

A fact to be recognized is that environmental pollution is becoming severe and is assumed to intensify in the future (Wang, Kim, Moon & Song, 2020). Individuals use (individual when understanding the threat to oneself, he opted to wear face mask due to his perceived severity and susceptibility to the threat)face masks based on perceptions of the severity, the susceptibility of the risk, and how fully one understands the risks to oneself (Shapiro & Bolsen, 2018). Still, individuals always possess their perception of threat, enabling them to know their subjective assessment of the danger, which eventually becomes one's determinant of protective actions against bad outcomes (Lindell & Perry, 2012; Liu et al., 2019).

There is often a supporting connection between media and perceived threat and people's behavior, verified by previous findings in the literature about Health Belief Model (HBM). For

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example, a study was conducted in the USA and found a significant relationship between media and constructs of the Health Belief Model, i.e., behavior towards health consciousness, especially those already health-conscious (Xie, Grady, Cacciatore, & Nowak, 2019). In this regard, Glanz & Bishop (2010) already maintained that "people will not adhere to any recommended course of action when they are even having the highest level of belief in threat perception, unless and until they perceive that this recommended action will benefit them to reduce health risk" (pp. 47). Therefore, there is a need to validate this concept as mediating variable in the perspective of smog in Pakistan

H2: *Perceived threat significantly mediates the relationship between media coverage and preventive behavior towards smog.*

Perceived Benefits as Predictor of Health Behavior

Rosenstock (1974b) refers to an individual belief about the availability and efficacy of available courses of action (p. 331). It means that human health behavior is thought to depend upon the benefits that mitigate the health threat. Champion & Skinner (2008) noted that a person's own decision of the significance of sanctioning a health behavior to counteract the threat he perceives is based upon his perception regarding benefits in return to adopt a pro-healthy behavior. The person should have a perception that the recommended behavior will responsibly robust the positive services. Perceived benefits are also defined as a person's verdict related to specific behavior outcomes to minimize their susceptibility or severity of an illness (Coe, Gatewood, & Moczygemba, 2012).

During climate change effects, this has been validated that a person with a high level of benefit perception was closer to possess a good adherence behavior (Akompab et al., 2013; Rauf et al., 2017). Climate change posits that it plays a positive role in upgrading health risk management (Li, Yuan, Yue, Zhang, & Huang, 2021). Perceived benefits refer to the perceived effectiveness of protective action in decreasing the level of a perceived threat against poor health outcomes in the case of climate change, especially smog (Wang, Yuan, & Lu, 2021). In addition, the Perceived benefit is found to be an essential facilitator of adherence towards healthy behaviors (Akompab et al., 2013).

In the studies mentioned earlier, perceived benefits have been defined and measured traditionally by health communication scholars that mainly explored a general connection between health behavior and perceived benefits. Moreover, most of these studies are ethnocentric. When people choose the course of action to minimize the health threat, they find themselves susceptible to a disease (perceived susceptibility). Likewise, if they perceive that it would bring serious consequences to them (perceived severity) (Jones et al., 2015).

To our best knowledge, a gap exists in the literature that considers the vigorous effect on public adherence under a climatic change in the form of smog and its hazards in the context of Pakistan. Therefore, the presented study is among the rare pioneer studies that analyze the mass media coverage of smog-related content under the HBM framework by modifying the theory in Pakistan, filling the theoretical gap by measuring information processing about benefits to adhere to the theory protective behavior towards health threats.

H3: *Perceived benefits significantly mediates the relationship between media coverage and preventive behavior towards smog.*

Research Design

A cross-sectional research design vis-à-vis survey method was used to investigate the influence of media, perceived threat, and perceived benefits on the health-related behaviors of the public residing in Lahore. The approximated population of Lahore was 6,318,745, comprising 82.44% urban while 17.56% found as the residents of peri-urban areas of Lahore. It is divided into two Tehsils and nine extensive towns. A sample of 232 respondents was obtained. The purposive sampling technique chose the respondents. A close-ended questionnaire was designed to evaluate the public perception regarding health threats and benefits by media awareness in developing preventive behavior. The questionnaire had two sections: (Section A) 3 items to appraise media influence and five items to assess Perceived threats. At the same time (Section B) contained four items to evaluate Perceived benefits and three items to assess the health behavior regarding smog. The sample size was computed assuming a 5% significance level resulted in 232 into a minimum satisfactory periphery sample size to fill the questionnaire. Only the permanent residents and adults from 18-65 years old citizens were added to the sample. Less than 18 and immigrants or temporary visitors and people who were uneducated were excluded from the study. The data were analyzed by using the latest Smart PLS software.

Results

Descriptive analysis

In the first place, the study performed descriptive analysis. The results of the descriptive analysis are shown in Table 1. The table shows that all variables, media, PBS, PTS, and behavior, were pointedly associated.

Table 1: Descriptive analysis

Variable	Mean	Media	PBS	PTS	Behavior
Media	4.87	1			
Perceived Benefits	4.23	0.41	1		
Perceived Threats	4.15	0.34	1	1	
Behavior	4.36	0.25	0.31	0,16	1

Analysis Strategy

The partial least squares structural equation modeling (PLS) approach has been utilized to analyze the validities, reliability, and hypotheses testing using Smart PLS software. First, the measurement model has been running to observe the validities (discriminant and convergent) and reliability.
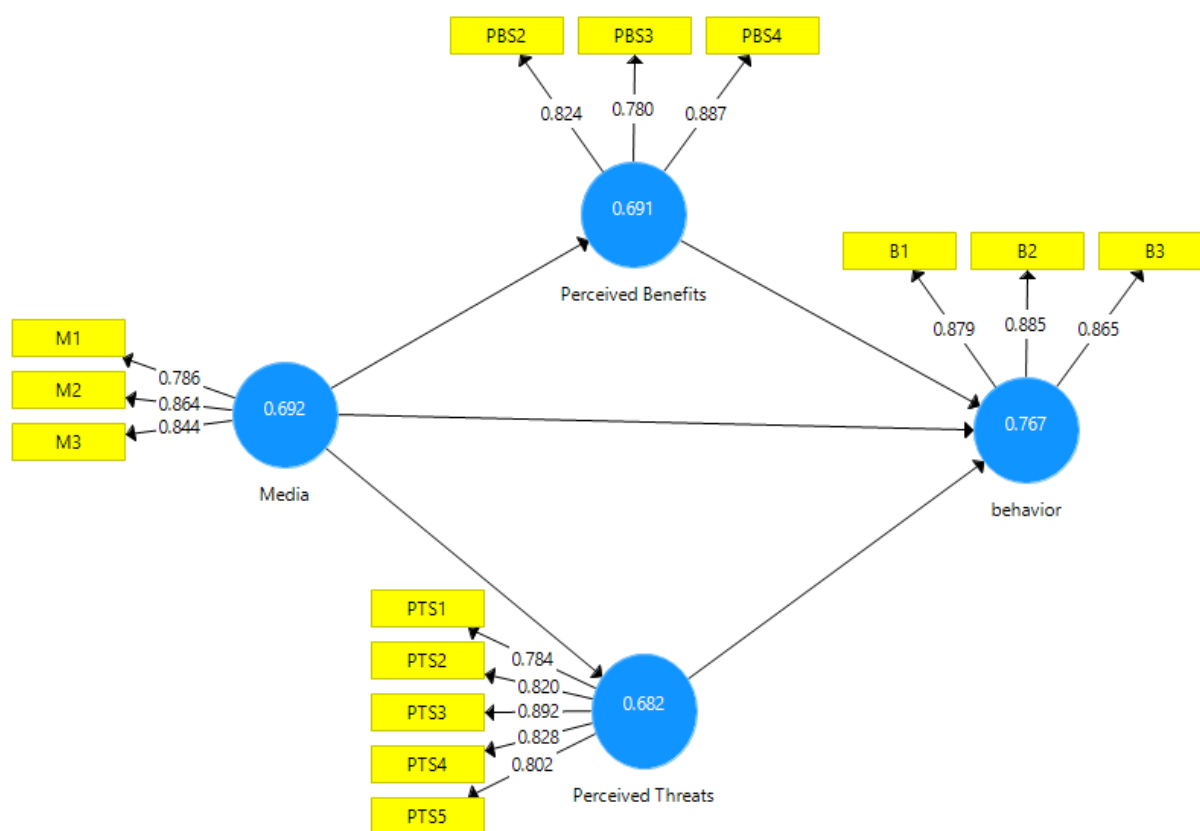

Figure 1: Measurement model

The PLS approach offers an in-depth analysis of reliability and validities using multiple factor analysis that makes it superiors to previous software such as SPSS (Raza et al., 2021). The measurement model shown in figure 1 and Table 2 revealed that after deletion of the items variables Media, PBS, PTS, and Behavior achieved the satisfactory Composite Reliability, Alpha and Average Variance Extracted (AVE) values. Hence the construct validity and the reliability has been revealed in this study.

Table 2: Construct Reliability and Validity

Variable	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Media	0.778	0.787	0.871	0.692
Perceived Benefits	0.787	0.845	0.870	0.691
Perceived Threats	0.883	0.887	0.915	0.682
behavior	0.848	0.849	0.908	0.767

Furthermore, the item loadings of each variable Media, PBS, PTS, and Behavior items are presented in figure 1 and Table 3.

Table 3: Item loadings

Items	Media	Perceived Benefits	Perceived Threats	behavior
M1	0.786			
M2	0.864			
M3	0.844			
PBS2		0.824		
PBS3		0.780		
PBS4		0.887		
PTS1			0.784	
PTS2			0.820	
PTS3			0.892	
PTS4			0.828	
PTS5			0.802	
B1				0.879
B2				0.885
B3				0.865

Moreover, the study used the Fornell-Larcker Criterion to examine the discriminant validity attained after deletion of the 2-items from the research and within the limit of deletion (see Table 4).

Table 4: Discriminant Validity (Fornell-Larcker Criterion)

Variable	Media	Perceived Benefits	Perceived Threats	behavior
Media	0.832			
Perceived Benefits	0.228	0.831		
Perceived Threats	0.563	0.337	0.826	
behavior	0.346	0.291	0.298	0.876

Hypotheses testing

Once the data revealed the reliability and validity, the researchers proceeded with the hypothesis testing using the PLS path analysis approach to test the H1. The results presented in Figure 2 (structural model) and Table 5 revealed that media influence positively the smog-related health behavior of the public ($\beta=0.242$, t=2.864, and p=0.004) significantly. Thus H1 was accepted.

Table 5: Standardized Regression weights

Paths	β	T Statistics	P Values
Media -> Perceived Benefits	0.231	2.919	0.004
Media -> Perceived Threats	0.383	5.075	0.000
Media -> behavior	0.242	2.864	0.004
Perceived Benefits -> behavior	0.196	2.898	0.004
Perceived Threats -> behavior	0.155	2.098	0.036

For the mediation analysis, the study used Preacher and Hayes's (2008) approach using the PLS bootstrapping method to test the H2 and H3. This approach is used in past literature and regarded as the most modern and superior technique that uses sample and re-sample to cross-validate the results (Sarstedt et al., 2020; Raza et al., 2021). The results presented in Figure 2 (structural model) and Table 6 indicated that perceived threats mediate the relationship between media and smog-related health behavior of the public ($\beta=0.59$, t=3.982, and p=0.005) significantly. Hence H2 was accepted. While the results presented in Figure 2 (structural model) and Table 6 also showed that perceived benefits mediate the relationship between media and smog-related health behavioral people ($\beta=0.45$, t=2.069, and p=0.03) significantly and consequently, H3 was accepted. However, perceived threats were found to be a stronger mediator in determining the relationship between media and smog-related health behaviors. This result is consistent with the recent literature (see Jones et al., 2015; Raza et al., 2021) that also supported the strong mediating effect of the perceived threats and risks in shaping behavioral outcomes.

Table 6: Indirect effect Standardized Regression weights

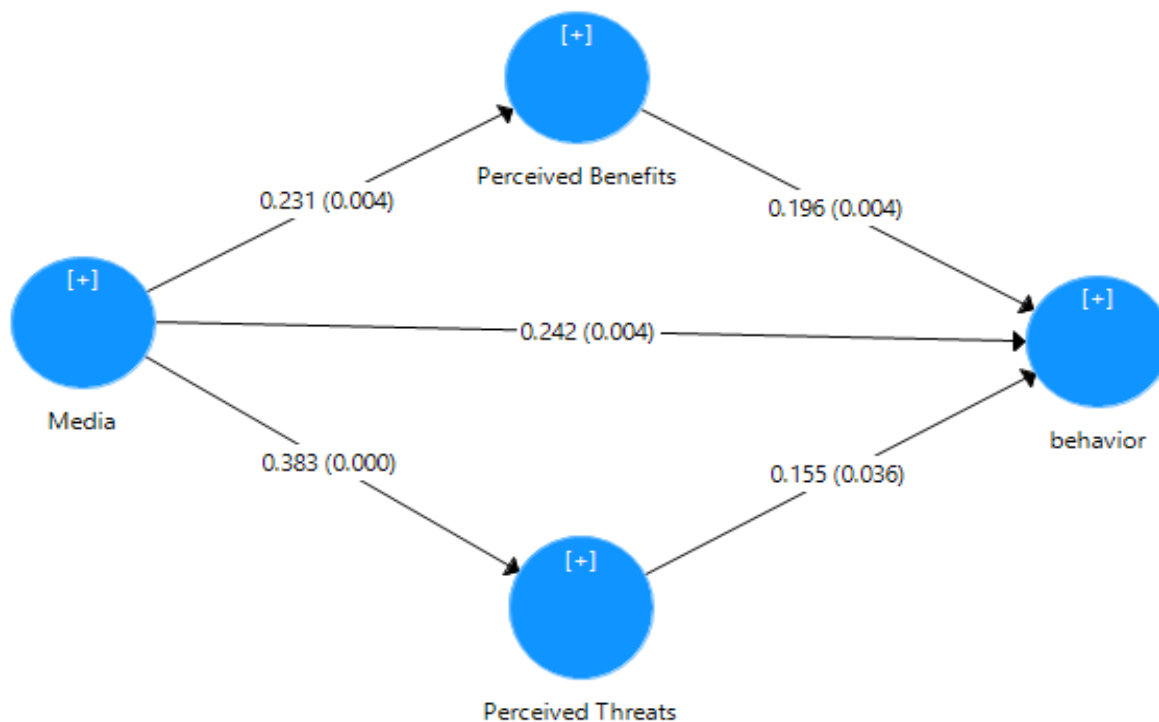| Indirect/Mediation	β	T Values	P Values	Hypotheses testing
Media -> Perceived Threats -> behavior	0.59	3.982	0.005	H2 Accepted
Media -> Perceived Benefits -> behavior	0.45	2.069	0.039	H3 Accepted

Figure 2: Structural model

Discussion & Conclusion

The study used a cross-sectional design vis-à-vis survey method to validate the central idea that exposure to media messages, perceived threat, and perceived benefits influence the public's smog related-behavior. The study proposed H1, which is the direct influence of media on the smog-related behavioral changes among the general public. The results revealed that media positively influence the smog-related health behavior of the people (Figure 2). Hypothesis H2 and H3 posited that perceived threats towards smog and perceived benefits media affect the public. The results indicate that hat perceived threats mediate the relationship between media and smog-related health behavior. Likewise, perceived benefits mediate the relationship between media and smog-related health behavioral people. These results are also aligned with the past literature (Akompab et al., 2013). However, perceived threats were found to be a stronger mediator in determining the relationship between media and smog-related health behaviors (Figure 2). This result is consistent with the recent literature (see Jones et al., 2015; Raza et al., 2021) that also supported the strong mediating effect of the perceived threats and risks in shaping behavioral outcomes.

These findings have implications for the media practitioners and pro-environmental groups. This study provides empirical support to the previous behavioral change theories, such as the risk perception and health belief models. These theories treat risk as an imperative antecedent that shapes the public's behavior when an uncertain condition such as smog is involved. Similarly, the present study provides insights for media practitioners to formulate functional communication strategies and campaigns to motivate the public to adhere to pro-environmental behavior. They can design more effective communication messages when reporting related environmental issues such as pollution and smog to sensitize the public about environmental issues. More work is required to be done on this front. A study conducted in Pakistan related that media give peripheral coverage to the human development issues such as health, environment, and pollution (Kamboh & Yousaf, 2020). Therefore, there is a need to convince media practitioners to pay attention to these issues vis-à-vis advocacy campaigns to increase the coverage of these issues in media to raise public consciousness. However, one reason for this lack of content can be media organizations' commercial orientation and business interests (Yousaf & Rahman, 2014). One limitation of this study is its cross-section design that is static and offers a snapshot of the media's influence on the public regarding their health-related behaviors. Future studies with longitudinal design can track changes in public behavior over time to better explain the media's role.

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