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Research paper

Insights into the Efficiency of the Elaboration Likelihood Model in Shaping the Attitudes toward Face Mask-Wearing: Lessons Learned from the COVID-19 Pandemic.

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ABSTRACT

During the COVID-19 pandemic, the focus of public health policymakers shifted towards changing individuals' attitudes to control the spread of the disease. Wearing a face mask emerged as the most frequently recommended strategy. This study assessed the attitude towards face mask-wearing, using the Elaboration Likelihood Model (ELM) in a Health Care Social Marketing campaign. The proposed ELM consisted of the central route, characterized by the argument quality, and the peripheral route, which referred to the image attractiveness, social presence, and the usefulness of the information. The sample comprised 162 participants, and the model was elaborated and validated with Structural Equation Modeling. The findings revealed that the model explained 36.5% of the attitude toward face mask-wearing variance, leading to a satisfactory fit. In addition, there was no statistically significant difference between the other-focused and the self-focused messages used in the Health Care Social Marketing campaign. These outcomes are useful for healthcare policymakers and other stakeholders interested in potential future health crises.

Keywords: Consumer attitude, health care consumer, persuasive messages, public health, social marketing

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1. INTRODUCTION

In 2020, the global public health emergency caused by the COVID-19 pandemic led to an unprecedented crisis (WHO, 2020). With limited medical interventions initially available, the focus shifted towards changing people's attitudes to control the spread of the virus. Social distancing and face mask-wearing emerged as the most frequent preventive strategies (Susmann et al., 2022). Nevertheless, the success of these preventive strategies relied mainly on individuals' attitudes toward the requested behaviors and implicitly on their compliance. Still, in this context, compliance was far from guaranteed (Esmaeilzadeh, 2022).

Moreover, misinformation and conspiracy theories significantly shaped attitudes during the pandemic, particularly about healthcare measures. People exposed to misinformation tended to have more negative attitudes toward preventive measures, influencing their reluctance to adopt behaviors recommended by public health authorities (Freeman et al., 2020). However, several academic studies have presented substantial evidence to support the fact that wearing face masks has effectively reduced infection and mortality rates, provided that a more significant proportion of the population adopts mask-wearing protocols (Srivastava & Saini, 2022). Notably, countries like Romania, Italy, and Japan have consistently exhibited high rates of face mask usage, whereas countries like Germany have reported only 64% of mask-wearing in public (Badillo-Goicoechea et al., 2021). Despite making mandatory wearing face masks in public spaces in several countries during certain stages of the pandemic, research emphasized that achieving global widespread adoption of face mask usage encountered several barriers, even in the presence of governmental policies at the federal and state levels (Cherry et al., 2021).

Marketing and Social Psychology fields have extensively researched the topic of attitude change and persuasion, particularly its impact on attitude and consistent behavior, to enhance the effectiveness of persuasive messaging related to COVID-19 (Susmann et al., 2022). Unlike other methods such as conformity, compliance, or coercion, behavior change resulting from a shift in attitudes does not rely on external factors, the actions of other peers, or their requests or orders (Cialdini & Griskevicius, 2010). Instead, persuading individuals to adopt a specific attitude triggers an intrinsic response that leads to adopting a behavior consistent with that attitude.

Consequently, if attitudes are changed to ensure persistence over time, they are more likely to influence future behavior. This can be achieved by understanding the processes involved in persuasion and evaluating the known factors contributing to the strength of attitudes associated with these processes (Goldstein & Cialdini, 2011).

The Elaboration Likelihood Model (ELM) was among the pioneering theories that provided insights into the strength of attitudes after persuasion attempts (Petty & Cacioppo, 1979). This model has gained significant attention and applicability across various fields. It has emerged as one of the most widely accepted consumer behavior and persuasion theories over its four-decade existence (Kitchen et al., 2014). Its applications have been diverse, encompassing domains such as marketing (both product and services), human resources (particularly in recruitment), communications (Srivastava & Saini, 2022), social marketing (e.g., addressing tourism-related littering) (Brown et al., 2010). Instances where the ELM has been utilized to comprehend health-related attitudes and behavioral changes included physical exercise (Petty et al., 2017) and evaluating the impact of preventive health messages, such as smoking cessation and eating disorder prevention (Petty et al., 2002).

ELM highlights the existence of two distinct routes through which individuals process information: the central route and the peripheral route (Petty & Cacioppo, 1979; Petty & Cacioppo, 1984; Petty & Cacioppo, 1986; Petty & Cacioppo, 1990). When individuals engage in the central route processing, they cognitively analyze the quality of the persuasive messages and shape their attitudes based on the strength of the arguments presented. The peripheral route is selected when people process information with less cognitive effort, relying on simple cues to shape their attitudes, such as image attractiveness or the usefulness of the information presented in the message. The level of elaboration at which persuasion occurs, or the extent to which individuals believe they have engaged in elaboration, is essential in determining whether attitudes will effectively turn into a behavioral change (Petty et al., 1999).

In the context of a Health Care Social Marketing campaign, it becomes paramount to foster strong attitudes, such as promoting face masks and understanding the level of elaboration involved in persuasion (Moradi & Zihagh, 2022). To ensure the creation of strong attitudes that effectively change behavior, persuasive messaging must be disseminated to maximize its impact. Achieving this requires a comprehensive understanding of the persuasion processes that tend to generate strong attitudes and the factors that influence the shift from the central route to the peripheral route

processing, as Petty et al. (2002) suggested. Thus, the ELM emphasizes the importance of considering the two information processing routes, central and peripheral, when examining attitude shaping through persuasion.

Although several studies focused on the Elaboration Likelihood Model in the pandemic context (Esmaeilzadeh, 2022; Cherry et al., 2021; Martinelli et al., 2021; Susmann et al., 2022), limited research has utilized the ELM to develop and empirically validate a conceptual model that predicts the attitude to wear face masks (Epepe et al., 2023). Thus, this study aimed to fill this gap by examining the attitude toward face mask-wearing, using the ELM framework for future scholars to expand the existing knowledge. Specifically, the objectives were twofold: (1) to develop a comprehensive model based on the components of the ELM, and (2) to assess the effectiveness of different types of COVID-19 persuasive messages in influencing face mask wearing.

The rest of this paper is organized as follows: the literature review section outlines the fundamental constructs and components of the ELM, as well as the significance and various types of persuasive messages already used in the face mask-wearing campaigns. Subsequently, it presents the conceptual model, discusses the findings, and suggests further research directions.

2. LITERATURE REVIEW

Understanding the social determinants of attitudinal patterns is essential for tailoring health policies and communication strategies to diverse populations, ensuring their effectiveness in reaching the targeted audience (Susmann et al., 2022). This consideration is particularly critical for shaping public health interventions during a potential future pandemic, such as those concerning face mask usage and lockdown protocols, as these attitudes often depend on individual choices influenced by various social, political, and economic factors.

Wearing face masks was recommended as a component of personal protective equipment and as a public health intervention to prevent the spread of the coronavirus disease (Esmaeilzadeh, 2022; Badillo-Goicoechea et al., 2021; Martinelli et al., 2021). However, face mask usage was closely connected with social and cultural practices and, in time, gained various personal and social significance (Martinelli et al., 2021). Therefore, understanding citizens' attitudes was essential for elaborating more effective health communication messages about the COVID-19 pandemic.

Numerous Marketing and Social Psychology studies have focused on strategies for inducing voluntary attitude changes (Susmann et al., 2022). During the pandemic, one common approach

involved individuals adjusting their attitudes to the majority's actions. In contrast, other approaches involved appealing to factors like the desire for consistency with past actions or taking advantage of limited opportunities. Despite the effectiveness of these methods in influencing attitudes, each presented limitations (Susmann et al., 2022).

The Elaboration Likelihood Model (ELM) has been widely acknowledged and utilized across various fields, such as health communication, counseling, politics, environmental studies, education, marketing, and advertising (Esmaeilzadeh, 2022). Specifically, in the healthcare field, Angst and Agarwal (2009) employed the ELM in their research about individuals' attitudes toward electronic health records (EHRs). Their study aimed to determine the effectiveness of using the model to persuade individuals to change their perceptions of EHRs, enabling electronic storage of their medical information. Similarly, Jin et al. (2016) utilized the ELM to investigate online healthcare communities and examine individuals' attitudes toward seeking health information within these virtual platforms.

ELM encompasses two distinct routes of persuasion, namely the central route and the peripheral route, which vary in the level of cognitive effort required to process information (Petty & Cacioppo, 1986). According to ELM, these two routes are essential in shaping individuals' attitudes. Central route processing occurs when individuals cognitively evaluate the arguments presented in a message (Petty & Cacioppo, 1986). The peripheral route focuses on the persuasiveness of peripheral cues that require less cognitive effort, such as attractiveness (Lowry et al., 2011), source credibility (Lowry et al., 2011), and usefulness of information (Vedadi and Warkentin, 2020).

Promoting values linked to mask-wearing, such as safety and cleanliness, may help overcome resistance by fostering trust in the importance of these values (Esmaeilzadeh, 2022). Just as emphasizing values can be influential, appealing to morality may also be effective, particularly for individuals whose attitudes are based on moral principles (Wolf et al., 2020). It is important to note that this persuasive advantage of moral arguments is not universally applicable. In health messaging research, one relevant distinction is between "self-focused" and "others-focused" messages when advocating for a health behavior (Susmann et al., 2022). "Other-focused" messages appeal to the concerns for the well-being of others and highlight how a behavior can contribute to promoting their welfare, whereas the "self-focused" messages appeal to self-centered concerns and emphasize how a behavior can benefit one's well-being. Studies in health communication revealed

that others-focused appeals are more persuasive (Susmann et al., 2022; Luttrell & Petty, 2021; Jordan et al., 2021).

Given the information mentioned above, following the guidelines of Petty et al. (1999), Luttrell and Petty (2021), and the principles of ELM, the conceptual framework in this study comprised both *self-focused* and *other-focused* arguments in the messages of a mask-wearing campaign (Figure 1). In this research, the central route referred to the argument quality, whereas the peripheral cues included image attractiveness, social presence, and the usefulness of the information (Kitchen et al., 2014).

The hypotheses of the research, based on the conceptual framework of the model, were the following:

- H1: A positive statistically significant relationship exists between argument quality and attitude towards mask-wearing.
- H2: A positive statistically significant relationship exists between image attractiveness and attitude towards mask-wearing.
- H3: A positive statistically significant relationship exists between social presence and attitude towards mask-wearing.
- H4: There is a positive, statistically significant relationship between the usefulness of information and attitude towards mask-wearing.

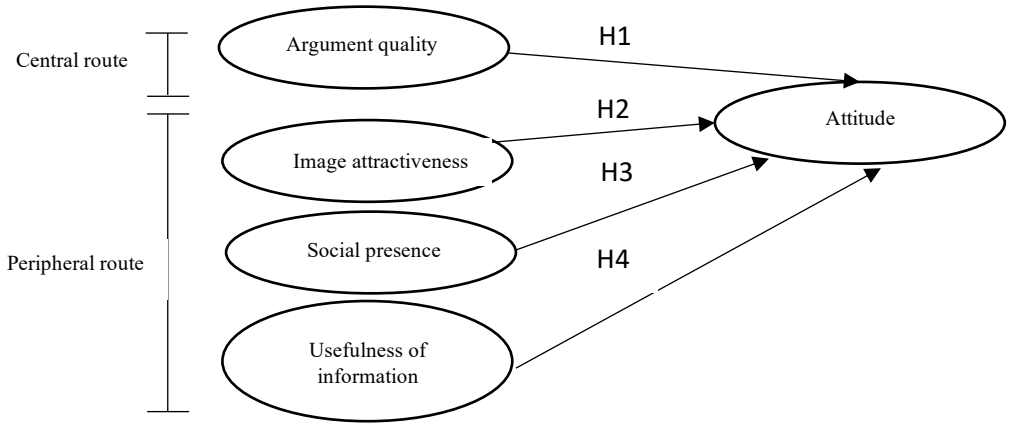

Figure 1. The conceptual model framework for face mask-wearing

3. METHOD

A cross-sectional online research was conducted in Romania during the pandemic, from July 2020 until September 2020. A nonprobability sampling methodology was employed, based on the

convenience sampling method, which facilitated the selection of participants based on their willingness to take part in the research. The online questionnaire was distributed on Social Media, and participants agreed to publish the research findings in scientific journals, provided anonymity, and confidentiality was granted. Each participant was assigned a number, and based on the simple randomization method, participants were assigned to two groups: the odd numbers were assigned to the others-focused group, and the even numbers were assigned to the self-focused group.

The online research instrument was elaborated for data collection about mask-wearing attitudes during the COVID-19 pandemic. The questionnaire consisted of three sections: section 1 provided respondents with a brief description of COVID-19, personal mask-wearing protective measures, and the research aim and objectives; Section 2 collected information concerning respondents' demographic characteristics, whereas Section 3 defined the items of the conceptual model's components. In this section, information was obtained about respondents' attitudes toward wearing face masks based on two prints used during 2020-2022 by the Romanian Government as part of the Social Marketing campaign "*Show you care, wear a mask*". The message of the first print was others-focused oriented, "*Wear a mask so that everybody's effort not to be in vain*", and the message of the second print was self-focused oriented, "*I wear a mask because I want to be healthy*". Thus, the two prints used identical color themes and similar images, but the message differed.

To develop the survey, items were adapted from previous studies to fit the context and aim of this research. The items of the model were adapted from studies of Bhattacherjee et al. (2006), Cyr et al. (2009), Cyr et al. (2007), Sussman, Watts & Siegal (2003), Sönderlund & Ohman (2005), as illustrated in Table 1. The items were measured on a 5-point Likert scale, ranging from 1—Completely Disagree to 5, Completely Agree.

Moreover, two independent translators carried out forward and backward translations to ensure the instrument's accuracy and cultural relevance. The translators were required to be fluent in both English and Romanian. Initially, a Romanian translator translated the English versions into Romanian, followed by a second translator who performed a back translation from Romanian to English (Beaton et al., 2000).

Before the analysis, missing data and respondents who may have provided answers randomly or participated with less attention were checked for validation. The final sample included 162

participants (response rate 83,5%). The number of participants followed Kock & Hadaya's (2018) recommendations for Partial Least Squares structural equation modeling (PLS-SEM).

Table 1. Measurement items

Constructs	Items	The sources of the scales
Argument quality	AQ1: The information in the print was enough to deliver the message efficiently.	Adapted from Bhattacherjee et al. (2006)
	AQ2: The information provided in the print was helpful.	
	AQ3: The information provided in the print was valuable.	
	AQ4: The information provided in the print was persuasive.	
Image attractiveness	IM1: The image used in the print was appropriate for the message it delivered.	Adapted from Cyr et al. (2009)
	IM2: The image used in the print made its content look visually appealing and was suitable for the message it delivered.	
	IM3: The image used in the print has an emotional appeal and is suitable for the message it delivers.	
	IM4: The image used in the print was interesting.	
	IM5: Despite the delivered message, the image used in the print caught the viewers' attention.	
	IM6: The image used in the print appealed to me emotionally.	
Social presence	SP1: The message of the print provided a sense of human contact to the delivered message.	Adapted from Cyr et al. (2007)
	SP2: The message of the print provided a sense of human personalness to the delivered message (referring to individual values).	
	SP3: The message of the print provided a sense of human sociability (referring to community and society values)	
	SP4: The message of the print provided a sense of human values (referring to courage and determination)	
	SP5: The message of the print provided a sense of human sensitivity.	
Usefulness of information	UI1: In my opinion, the message of the print was helpful.	Adapted from Sussman Watts & Siegal (2003)
	UI2: In my opinion, the message of the print helped me trigger an involvement and shape an attitude.	
	UI3: The message of the print provided the necessary information for me to shape an attitude.	
Attitude toward face mask-wearing	AT1: I frequently wore a mask before making it mandatory.	Adapted from Sönderlund & Ohman (2005)
	AT2: I wore a mask all the time before making it mandatory.	

The data were collected and processed using SPSS software version 20, and the validation of the model was conducted in SmartPLS version 4, based on the principles of Structural Equation Modeling. The potential bias issues were investigated using the Variance Inflation Factors (VIFs)

(Kock, 2015). The validation of the model consisted of 2 stages, namely, the evaluation of the measurement model and the structural model, followed by testing the paths (relationships) using the Bootstrapping method. Frequencies and percentages described the qualitative data. All tests were statistically significant at p values < 0.05.

4. RESULTS

The vast majority of participants were between 18 and 25 years old (45.7%), followed by those between 26 and 35 (19.1%), whereas the gender revealed that there were more female respondents (69.8%). Notably, the majority of respondents were married (50%), employed (58.6%), had university studies (40.1%), and had a monthly salary of between 1250 and 1500 RON (17.9%) (Table 2).

Table 2. The demographic characteristics of the participants

Demographic variable	Category	Frequency (%)
Age	18 to 25 years	74 (45.7%)
	26 to 35 years	31 (19.1%)
	36 to 40 years	7 (4.3%)
	41 to 50 years	22 (13.6%)
	More than 50 years	28 (17.3%)
Gender	Male	49 (30.2%)
	Female	113 (69.8%)
Marital status	Single	70 (43.2%)
	Married	81 (50%)
	Divorced	7 (4.3%)
	Widowed	4 (2.5%)
Occupation	Student	55 (34%)
	Employed	95 (58.6%)
	Freelancer	4 (2.5%)
	Unemployed	1 (0.6%)
	Retired	7 (4.3%)
Education Level	Primary school studies	3 (1.9%)
	High-school studies	59 (36.4%)
	Vocational studies	4 (2.5%)
	University studies	65 (40.1%)
	Postgraduate studies	31 (19.2%)
Salary level	1250 to 1500 RON*	29 (17.9%)
	1501 to 2000 RON	14 (8.6%)
	2001 to 2500 RON	16 (9.9%)
	2501 to 3000 RON	27 (16.7%)
	> 3000 RON	76 (46.9%)
Total		162 (100%)

*Note: * RON=Romanian Currency (LEU)*

The distribution of the participants within the two groups was as follows: 76 (46.9%) in the others-focused group and 86 (53.1%) in the self-focused group.

4.1 The Measurement Model

Before the analysis process, potential bias issues were evaluated using the VIFs, which should be below the threshold of 3.3 (Kock, 2015). Accordingly, all VIF values were below the threshold of 3.3, indicating low multicollinearity.

The validation of the measurement model was assessed by reliability and discriminant validity coefficients from SmartPLS, namely the Cronbach's alpha coefficient, the Convergent Validity, and the Average Variance Extracted Validity (AVE), as well as by applying the Fornell-Larcker criterion (Hair et al., 2014). After evaluating and conducting several statistical internal changes to the constructs of the model, in which the variables Image Attractiveness, Social Presence, and Usefulness of Information have been stabilized by excluding three items from the Image Attractiveness construct (IM2, IM3, IM4), 1 item from the Social Presence construct (SP3) and 1 item from the Usefulness of Information construct (UI3), it was achieved a robust model for further analysis. More precisely, in this study, the constructs displayed satisfactory Composite Reliability (CR) and Cronbach's alpha values exceeding the threshold of 0.70, suggesting high internal consistency (Nunnally & Bernstein, 1994) (Table 3). The AVE value surpassing 0.50 indicates an acceptable level of construct validity. In this study, most AVE values exceeded 0.60, emphasizing internal congruence among the items and suitable outer loadings on the assigned constructs (Table 3). Moreover, the discriminant validity was assessed with the Fornell-Larcker criterion, which determined the interitem correlations within a construct, revealing in Table 4 that the discriminant validity was achieved (Fornell & Larcker, 1981). Being a model based on variance, the fit indices that are usually reported are the Normed Fit Index (NFI), the Root Mean Square Residual (SRMR), and the Coefficient of Determination (R^2) (Henseler et al., 2015). In Table 5, it can be observed that the model indices showed a good fit (Hu & Bentler, 1999).

Table 3. The reliability of the measurement model

Latent variable	Item(s)	Outer loading	Cronbach's alpha	CR*	AVE*
Argument quality	AQ1	0.807	0.895	0.906	0.682
	AQ2	0.707			
	AQ3	0.806			
	AQ4	0.964			
Image attractiveness	IM1	0.813	0.870	0.886	0.696
	IM5	0.721			
	IM6	0.952			
Social presence	SP1	0.897	0.892	0.902	0.675
	SP2	0.759			
	SP4	0.700			
	SP5	0.912			
Usefulness of information	UI1	0.752	0.782	0.791	0.648
	UI2	0.855			
Attitude toward face mask-wearing	AT1	0.694	0.759	0.789	0.628
	AT2	0.881			

*Note: *CR- Composite Reliability; *AVE- Average Variance Extracted*

Table 4. Discriminant validity- The Fornell-Larcker Criterion

	Argument quality	Attitude toward face mask-wearing	Image attractiveness	Social presence	Usefulness of information
Argument quality	0.826				
Attitude toward face mask-wearing	0.529	0.793			
Image attractiveness	0.686	0.531	0.834		
Social presence	0.568	0.492	0.599	0.822	
Usefulness of information	0.552	0.366	0.603	0.667	0.805

Table 5. The fit indices of the measurement model

Model fit indices	Value	Recommended value	Status
NFI	0.94	> 0.90	Acceptable
SRMR	0.52	< 0.08	Good
R^2	0.36	0.25- Weak 0.50- Moderate 0.75- Substantial	Moderate

Note: NFI- Normed Fit Index; SRMR- Root Mean Square Residual; R^2- Coefficient of Determination

4.2 The Structural Model

The path coefficients corresponding to the conceptual model were examined using the Bootstrapping method in SmartPLS. It included their significance at a *p-value* lower than 0.05 and the assessment of the explained variance of the dependent variable (R2), namely the *Attitude toward face mask-wearing* (Hair et al., 2014). The structural model statistically validated all paths. Specifically, *Attitude toward face mask-wearing* was influenced by the *argument quality* (β= 0.26, p=0.001), *image attractiveness* (β= 0.26, p=0.001), *social presence* (β= 0.25, p=0.001), and the *usefulness of information* (β= -0.10, p=0.001) (Figure 2 and Table 6). Notably, the relationship between the *usefulness of information* and the *attitude toward face mask-wearing* was negative. All hypotheses were accepted except H4, which was rejected (Table 6). In addition, *the attitude toward face mask-wearing* was explained by the components of the ELM model in a percentage of 36.5%, which suggested a satisfactory model fit.

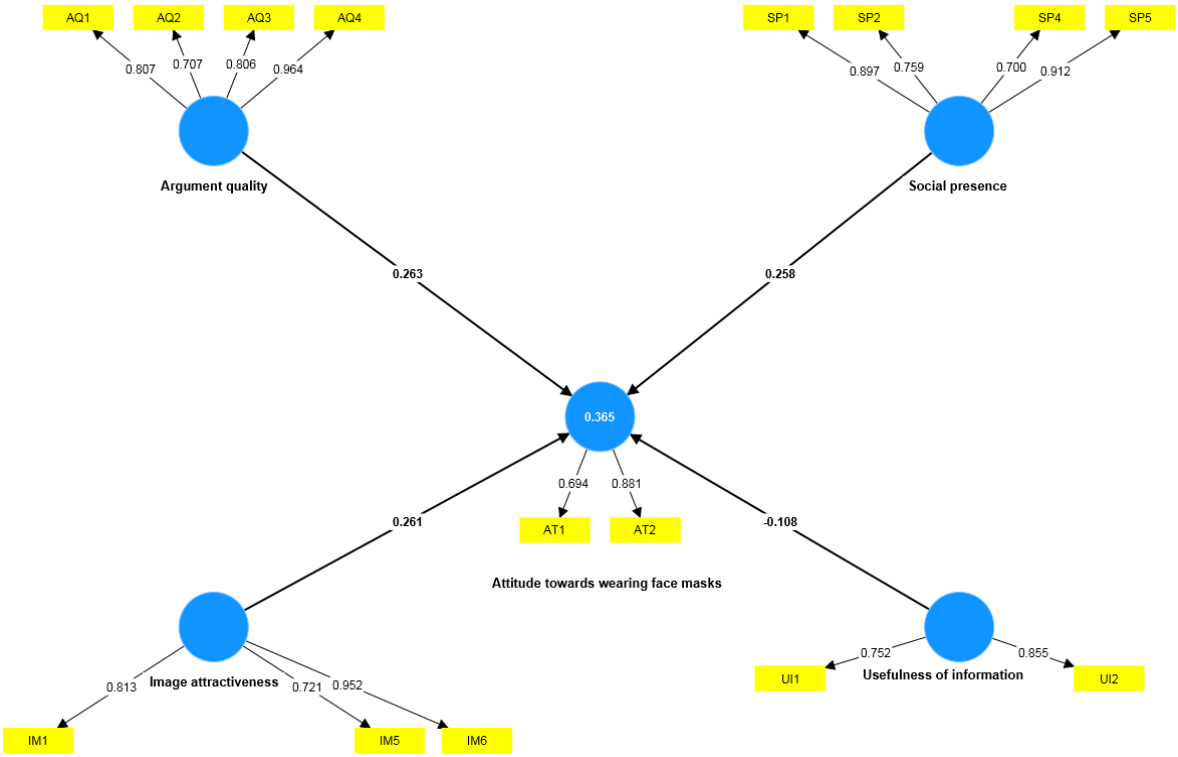

Figure 2. The Structural Model

Table 6. The path coefficients of the model

Paths	Path coefficient value	Hypothesis status
Argument quality -> Attitude toward face mask-wearing	0.263**	Accepted
Image attractiveness -> Attitude toward face mask-wearing	0.261**	Accepted
Social presence -> Attitude toward face mask-wearing	0.258**	Accepted
Usefulness of information -> Attitude toward face mask-wearing	-0.108**	Rejected

*Note: **- statistically significant at a p < 0.001*

Moreover, the results of the multigroup analysis revealed no statistically significant differences between the two prints (p> 0.05), suggesting that the two prints, be they others-focused or self-focused, did not influence the individuals' attitudes toward face mask-wearing.

5. DISCUSSION

The COVID-19 pandemic changed the attitudes and behaviors of people worldwide due to the mandatory protection measures. Despite these mandatory measures, their long-term application was not assured because of the unknown social determinants of attitudinal patterns.

Face mask wearing had varying levels of acceptance during the pandemic across different cultures and governmental contexts. While a mandatory policy measure had effective and significant outcomes for the epidemiological situation, and individuals were perceived as being socially responsible (Siewe Fodjo et al., 2020; Betsch et al., 2020), it remained controversial who and when should have control over the use of face masks (Martinelli et al., 2021). Moreover, public messaging had an essential role in health communication, and it was necessary to acknowledge the variety of cultures and ethics concerning healthcare habits, which were relevant for informing and developing reliable resources and policies for individuals during the pandemic (Martinelli et al., 2021). In this context, based on the Elaboration Likelihood Model (ELM), a conceptual model for individuals' attitudes towards face mask wearing was necessary to be elaborated (Petty et al., 2009). This unifying model becomes useful in the context of health crises because it provides the possibility to identify the constructs of the ELM which are more likely to have the most significant amount of persuasion, depending on a person's elaboration process, namely, how much a person is likely to process the message in an in-depth manner.

Our findings revealed that Romanian persons shape their attitudes towards face mask-wearing based on the central and peripheral routes. The central route encompassed the argument quality, and the peripheral route consisted of the image attractiveness, social presence, and, in a negative direction, the usefulness of the information. Nonetheless, there was no perceived difference between the others-focused persuasive message and the self-focused persuasive message, which aligned with previous research (Srivastava & Saini, 2022; De Dominicis et al., 2017).

Argument quality and peripheral cues are strongly connected to the shaping of attitude (Petty & Cacioppo, 1979). The image was perceived to be more appealing, and it was concluded that it contributes to a greater elaboration because incorporating a visual design in promoting health content helps experts illustrate and communicate the health topic effectively (Lam et al., 2022). The Social Presence, referring to individual and collective values, may influence the elaboration process and, implicitly, the attitude shaping. Even for individuals who may not be concerned with their health and safety, wearing a face mask was often perceived as showing respect towards

others. In contrast, the collective support of wearing face masks helped in building a socially responsible community, highlighting the role of peers in shaping individuals' attitudes and, implicitly, behaviors (Flaskerud, 2020). Evaluating a persuasive message in connection to an important value will result in an attitude more effective in predicting behavior in specific contexts. Thus, the societal and personal usage of wearing face masks may be influenced by (1) individual perceptions of infection risks, (2) personal interpretations of societal representativity and solidarity, (3) cultural traditions, and (4) the need of expressing self-identity (Martinelli et al., 2021). By evaluating the advantages and disadvantages of wearing face masks, society can determine that the benefits of wearing face masks would be bilateral because a face mask can protect the person wearing it, the person with whom he talks, and if followed by everybody when needed, benefits the society as a whole (Esmaeilzadeh, 2022).

The relationship between the usefulness of the information and the attitude towards face mask-wearing was negative because the participants presented attitudinal ambivalence (Armitage & Conner, 2000), namely mixed, inconsistent, or conflicting. Ambivalence was expected for some COVID-19 mitigating behaviors, which were considered positive in reducing the spread of the disease but also harmful when reflected in the restrictions related to social behaviors. The scientific literature pointed out that it was improbable for people to hold ambivalent attitudes for extended periods (Priester & Petty, 1996), so they would generally engage in actions that would have the potential to reduce the discomfort (van Harreveld et al., 2009), by processing persuasive messages more extensively (Xu & Warkentin, 2020).

Our findings have implications on health prevention policies and the messaging in future public health crises, as they highlight the importance of better identifying the variables that impact the processing and shaping of the desired attitudes (Badillo-Goicoechea et al., 2021). Public health education programs or webinars may improve the attitude toward wearing face masks through social media channels and provide a more targeted approach. Health care policymakers may use the principles and methods of Social Marketing or Psychology to have a more targeted intervention (Esmaeilzadeh, 2022). Further, using celebrity endorsements, policymakers may create a mask-wearing culture by supporting, establishing some norms, and minimizing the possible barriers in shaping positive attitudes.

Healthcare authorities should consistently and transparently fight misinformation and fake news by increasing knowledge and updating the public health guidelines about mask-wearing based on

scientific research at all levels. Thus, raising the credibility and validity of information will influence public attitudes and promote the continuous wearing of face masks whenever necessary. The outcomes of this study need to be used cautiously because there are several limitations. Being a cross-sectional study and using a small sample, the findings cannot be generalizable for other populations; the online self-administered instrument may increase the possibility of self-reporting biases, for instance, overestimating or underestimating the answers based on personal relevance, prior knowledge, and elaboration results. Although convenience sampling presents a specific chance of bias (Jager et al., 2017), it is easily accessible and available at a given time (Etikan et al., 2016).

6. CONCLUSION

The COVID-19 pandemic has had a profound impact on the attitudes and behaviors of people worldwide, primarily due to the implementation of mandatory protective measures. Presently, the acceptance of wearing face masks during the pandemic has varied across different cultures and governmental contexts, leading to controversial debates. In Health Care Social Marketing and Social Psychology, the Elaboration Likelihood Model (ELM) has been utilized to examine the influence of persuasive messages. This research shed light on how individuals shape their attitudes towards face-mask-wearing campaigns based on the ELM. The central route involved the assessment of argument quality, while the peripheral route focused on factors such as image attractiveness, social presence, and the usefulness of information. Notably, the study also revealed that the perceived usefulness of information in these messages might shape ambiguous attitudes toward face mask-wearing. Nevertheless, there was no difference between the other-focused and the self-focused messages related to wearing face masks. Based on these insights, future interventions in Social Marketing and Psychology are recommended to concentrate on both routes of the ELM and develop messages with a more targeted approach. By considering the quality of arguments and incorporating elements that enhance image attractiveness, social presence, and information usefulness, these interventions can effectively promote positive attitudes towards face mask wearing for longer periods in case of a future health crisis.

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