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Hierarchy of the main factors predicting the decision to go to the doctor in a general population sample: A factorial survey design

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Abstract

Objective: To obtain a hierarchy of the main factors that predict the decision to go to the doctor when symptoms are not yet linked to a specific disease. Method: 64 representative vignettes, combinations of nine factors, were presented to 168 adults between 28-60 years of age. Results: Multilevel multiple regression models were used to rank the main factors predicting urgency to see a doctor in order of importance: the interference of symptoms in daily activities (B = -1.29; p <.001), fear (B = -0.96; p <.001), pain (B = -0.90; p <.001), access to medical care (B = -0.64; p <.001) and confidence in the doctor (B = -0.27; <.05). Moreover, gender (B = 0.56; p <.05) and educational level (B =-0.31; p <.05) explained part of the interindividual variation in the daily symptoms' interference. Conclusion: When a specific disease has not yet been diagnosed, daily symptoms' interference is the factor that most strongly increases the urgency to visit a doctor, especially among men and among people with a higher level of education. Practice Implications: To reduce delay, generic health prevention

campaigns should place more emphasis on possible interference in daily activities than on the meaning of symptoms for health.

Keywords: *going to the doctor; patient delay; time to presentation; factorial survey; multilevel design.*

1. Introduction

In terms of an individual's health, the consequences of not going to the doctor when symptoms appear, or delaying such visits, may be quite serious. Increases in this period of time, called 'patient delay', have been described in association with numerous diseases and when extended, more aggressive treatments may be needed that could have been avoided by an early diagnosis, and survival rates may fall [1,2]. Although a linear correspondence has not been established, the greater the patient delay, the lower the survival rate associated with diseases like breast cancer [3] oral cancer [4], bowel and lung cancer [5], malignant melanoma [6] lower limb ischemia [7] or myocardial infarction [8]. Beyond the direct impact on the health of such individuals, more general implications in public health have also been described, particularly due to the risk of transmitting undiagnosed infectious diseases [9], or the costs related to the use of emergency health services and hospitalization, as well as the loss of productivity at work [10].

Attempts to identify the variables that affect the magnitude of the patient's delay have mainly considered an assessment of the symptoms: awareness, severity, frequency and identification. However, despite the importance of this variable for seeking care, it is not been possible to establish a direct relationship between the evaluation of the symptoms and the urgency in consulting a doctor [11,12]. In terms of symptom awareness, it is not easy to determine what symptoms or physical sensations will drive the decision to consult a doctor. For example, the severity of a symptom does not always predict heart failure or myocardial infarction, and the extent to which

symptoms may serve as a warning may vary depending on whether it is the first time the disease is suffered or not [13], or the difficulty displayed by individuals in identifying nine of the common cancer symptoms [5]. Thus, it is not straightforward to determine what symptom or physical sensation triggers individuals to seek medical assistance. Hence, there is now greater interest in identifying other psychological and sociodemographic factors that influence the time to seek medical advice, over and above the severity and awareness of the symptoms.

The factors contributing to patient delay in the presence of chest pain were recently reviewed based on data published between 1994 and 2014 [14]. These factors were classified into three major domains: sociodemographic and clinical factors (like age, gender, education, marital status or history of chronic diseases); cognitive and emotional factors related to the symptoms (e.g., severity of pain, symptom assessment and appraisal, atypical nature of the symptom, lack of knowledge or the wait for pain/symptom to remit); and social factors, defined as the elements of the social context that contribute to the delay in seeking for assistance (e.g., absence of witnesses of the episode). A recent study focusing on breast cancer identified new factors that acted as determinants of patient delay, including significant cognitive and emotional factors (referred to as psychological and behavioral factors) like trivialization of the symptoms, fear of the disease or lack of time to seek medical advice, as well as health system related factors like trust in the healthcare system [15].

These factors are representative of those taken into account in studies focusing on different diseases that have set out to find the main variables that affect patient delay. All these studies aim to reduce patient delay from a preventative perspective. The most common prevention strategies proposed are based on educational awareness of the specific alarm symptoms for each disease, yet to date they have failed to show a positive effect in reducing the time from the onset of symptoms to the first medical contact. Indeed, information campaigns aimed at reducing patient delay that focus on the characteristic symptomatology of the potential diseases do not seem to be effective, especially when the specific disease is yet to be diagnosed [16]. However, in the presence of any given symptom, understanding what factors influence the decision to consult a doctor, better referred to as time to presentation at health services [17],

patient interval [18] or symptom response interval [19], may better guide interventions aimed at the general population, promoting visits to the doctor when necessary. In a general population study, in which participants were not selected on the basis of a specific symptomatology or disease, Kannan and Veazie aimed to identify which segments of the population were the most prone to avoiding medical assistance when there is a suspicion of a disease and the need for healthcare. The results showed that younger males on a lower income and with a lower level of education were the most reluctant to go to the doctor when they suspected that they should. The main reasons for this delay identified in the study were discomfort with physical examination and fear of a serious illness. Another general population work [21], which studied how sociodemographic variables and symptom characteristics predict ten different responses (e.g. doing nothing or seeking healthcare) to a list of 25 common daily symptoms, found that the degree of symptom interference with daily life was the most important variable in increasing probability of seeking medical care, across all the different symptoms. However, not all the significant factors identified in previous disease specific studies were included in these more general studies, and it therefore remained unclear how these may help predict time to presentation in the general population.

In previous studies, the factors assessed have generally been empirical factors or those based on disease specific symptomatology defined by medical experts. This means that they cannot always be applied to the general population in exactly the same way. Wyke's critical review and comparison [19] of psychological models that might explain response to symptoms in the general population offers an integrated theoretical framework that includes factors ranging from an individual level to a social structure level. Considering the significant factors for delay indicated previously and adjusted to Wyke's definition for general populations, four relevant domains should be taken into account: sociodemographic; cognitive and emotional; social; and health system. Relevant socio-demographic factors include age, gender and the level of education, while relevant cognitive and emotional factors are: familiarity, as a measure of how atypical the symptom is; knowledge about what the symptom means; severity of pain/discomfort; fear of a possible serious illness; interference of the symptom with

daily activities as a measure of the extent to which the symptom imposes itself on the individual's life; and the presence of other daily events as a measure of the lack of time to seek medical advice. A socially relevant factor is advice from other people, and health system relevant factors include: confidence that going to the doctor will be useful, as a measure of trust in the health system; and accessibility to health services as a potential barrier.

Another important issue that remains unclear is which of these significant factors, might be the most relevant to predict time to presentation when people suspect they should go to the doctor. To the best of our knowledge, all these factors have yet to be studied together in a single work, which could provide a useful hierarchy to establish which of these better predict the decision to go to the doctor when all of them are considered together. Thus, the aim of this study was to establish a hierarchy of factors that can predict time to presentation to the doctor in the general population, in the presence of any symptom and when these have not yet been linked to a specific disease. To establish this hierarchy, and bearing in mind that the focus of the study is on people who are not yet diagnosed, we propose using the factorial survey methodology [22] as an adequate way to study the factors that affect the decision of going to the doctor with greater or lesser urgency. This method allows several factors to be manipulated in a systematic way by using vignettes, thereby establishing a hierarchical order of importance [23], as well as measuring the contribution of personal variables that cannot be manipulated through vignettes (such as the sociodemographic factors).

2. Methods

2.1. The Factorial Survey Questionnaire

The development of vignettes is the first step when constructing a factorial survey questionnaire [24]. Each of the vignettes established combines one of the two levels from each of the nine factors included in the questionnaire (see Table 1).

INSERT TABLE 1 ABOUT HERE

One dependent variable was selected to measure the urgency in going to the doctor for each vignette. The judgment was measured on a scale from 0 (I would not go to the doctor) to 10 (I would go to the doctor urgently), with the mid-point labelled *I would go to the doctor with some urgency*.

Figure 1 is an example of a vignette used in this study, with the 9 factors at their lowest level of urgency and the judgment the participants must make after having read the vignette.

INSERT FIGURE 1 ABOUT HERE

Therefore, this study was based on a 2^9 factorial design, leading to 512 possible vignettes. We used a fractioned factorial design [25] to sample the sets of different vignettes to be used in order to ensure that a maximal variance of the vignettes was represented and that the main effects did not produce confounding effects [26]. Using the R statistical software v.3.2.3, we found that four different random decks, each with 16 vignettes, was sufficient to achieve a *D-efficiency* level of .92 [24]. Therefore, each participant was randomly assigned to one of the four decks of 16 vignettes in the final factorial survey, and the vignettes of the corresponding set were presented randomly.

2.2. Participants and Data collection

The sample size was calculated with G*Power 3.1 [27], assuming an effect size of 0.15 (mid-size effect). The program provided a required simple size of N = 166, with an alpha error of $p < .05$ and a power of $1-\beta = .95$.

The participants were adults who were recruited voluntarily by the snowball method from various areas of Barcelona (Spain). The population sociodemographics (2015) in Barcelona was taken as a reference to establish the required proportions in terms of gender, age and educational level. The final study cohort contained 168 individuals, 51.2% women, and with a mean age of 43.7 (SD = 9.4; range 28-60 years).

The participants were provided with verbal and written information about the study, thereafter obtaining their informed consent prior to their inclusion. The Factorial survey questionnaire was always answered on paper.

2.3. Data Analysis

A multilevel multiple regression analysis was used to test the different models, applying the mixed-model analysis procedures of SPSS® version 21. A cross-sectional design of repeated measurements with the 16 vignettes was used to explain the judgment of the urgency to visit a doctor. The data follows a 2-level hierarchical multilevel structure: level 1, within person level, marked by factors of the vignettes that were responded by each person and with the nine factors as explanatory variables; and level 2, between-person level, characterized by the sociodemographic variables. At level-1, the mean effect of each factor on judgment can be computed (fixed effect) along with how spread apart the scores are (random effects). Spaghetti plots depict the individual slopes or regression lines for each person, in order to facilitate the visual detection of potential deviations from the fixed effect pattern by a group of individuals. The significant random effects could be explained by level-2 variables (cross-level interactions) [28].

The recommended strategy to perform hierarchical multilevel modeling of four exploratory models was applied [29], testing: the null or no-predictors model (M0), with only the intersection and the error variance; model 1 (M1, reference model) that tests the main effects of the factors included in the vignettes, both on a fixed and a random level; model 2 (M2) where sociodemographic variables (level 2) were added; and model 3 (M3) that included the cross-level interactions between level-1 and level-2 variables, for explaining random significant effects of level-1 variables.

For each model, the estimated values and standard errors of the fixed parameters, and the variance of the random parameters were calculated. In model 3, and due to the categorical nature of level-2 variables, the fixed parameter of the factor represents the effect of the lower category of level-2 variables on judgment, while the fixed parameter of each interaction represents how this value changes for the remaining categories. The adjustment of each model was tested using the LRT test (2*log likelihood), lower values indicating a better fit. Changes in the adjustment between each model (differences between the LRTs) were also calculated and compared in a

Chi-squared distribution to establish if each new model was significantly better than the reference model (Model 1).

3. Results

When considering the general judgment of the participants in the study, a mean score of 4.4 (SD = 2.7) was obtained (95% CI [4.33, 4.54]) with an asymmetry of .15 and a kurtosis of -.85. Although the index obtained by the Kolmogorov-Smirnov test was statistically significant (K-S=.059; df= 2688, p<.001), the values of asymmetry and kurtosis between -1 and + 1 allowed the dependent variable to be considered as quantitative.

The results of the four exploratory models tested are shown in Table 2. The intra-class correlation coefficient (ICC= .31) showed that 31% of the variance in the urgency of going to see a doctor was due to the between subject characteristics, and 69% to differences in the vignettes.

INSERT TABLE 2 ABOUT HERE

Exploratory model 1 was the reference model for the ensuing comparisons. This model showed a significant main effect of factor 3 (Severity of pain; t= -7.44, df= 164.26, p<.001), 4 (Fear; t= -9.55, df= 168.45, p<.001), 5 (Interference of symptoms; t= -10.44, df= 170.43, p<.001), 7 (Confidence; t= -2.93, df= 173.36, p<.05) and 9 (Access to healthcare; t= -7.08, df= 170.52, p<.001). Thus, the urgency in going to the doctor is greater when symptoms are painful, frightening, they interfere with the individual's daily activities, there is confidence that going to the doctor will be useful and there is ready access to health services.

Factors 3, 4, 5, 7 and 9 have significant fixed and random effects. Thus, the pain associated with the symptoms, whether they are frightening or not, if they interfere with daily activities, there is confidence that going to the doctor will solve the problem, and there is ready access to health services are related to a greater urgency in visiting a doctor (fixed effect), even though there are also differences between individuals as to how they influence urgency (random effect). Individual regression lines or slopes for

each of the factors (see Figure 2) show that, in all cases, there are groups of individuals that not only do not change, but can even decrease, their urgency judgment. M1 explained 37,9% of the level-1 variance and it produced a significant change in the model fit (ΔLRT= 624.557, df=18).

INSERT FIGURE 2 ABOUT HERE

Model 2 included all level-2 sociodemographic variables in the regression: Gender, Age, and Educational Level (University studies, Secondary school, Primary school or below). None of these produced a significant effect and moreover, Model 2 was not associated with a significant change in the model fit (ΔLRT= 0.684, df=3).

Model 3 included cross-level interaction terms between the sociodemographic variables (level-2) and the vignette factors (level-1). Gender ($t=2.37$, $p<.05$) and educational level ($t= -2.19$, $p<.05$) displayed a significant interaction with factor 5 (Interference of the symptom in daily activities: see interaction relationships in Figure 3). The effect of symptom' interference on daily activities was higher in men that in women, and it was higher in individuals that had attained a University education than in those with other levels of education. Model 3 produced a significant change in the model fit (ΔLRT= 21.394, df=15, $p<.05$) relative to Model 1.

INSERT FIGURE 3 ABOUT HERE

4. Discussion and Conclusion

4.1. Discussion

To the best of our knowledge, this is the first study to establish a hierarchy among significant cognitive, emotional, social and health system factors in the general population regarding the level of urgency in the decision to go to the doctor, as well as which sociodemographic variables are relevant to this decision-making process, when symptoms have not yet been linked to a specific disease or diagnosis.

Model 1 shows that five of the nine psychological and health related factors were seen to be relevant in taking the decision to visit a doctor. According to this model and in order of relevance, the urgency of going to the doctor is greater when symptoms interfere with the individual's daily activities, when they are frightening, when they

produce pain, when there is ready access to health services, and when they are confident that going to the doctor will be useful.

Accordingly, and as indicated in earlier studies that focused on specific diseases, psychological or emotional issues like fear and physical sensations are important factors in deciding whether or not to visit a doctor. Nevertheless, our results also reveal that when the illness has still not been clearly diagnosed, the factor that most strongly influences the decision to visit a doctor with the utmost urgency is the extent to which this discomfort interferes with the individual's daily activities. Thus, when symptoms interfere with daily activities, the probability of seeking medical care increases (Elliot, 2011). Therefore, according to our results, it appears that consulting a doctor is essentially orientated towards being able to perform one's daily activities normally, rather than preventing possible illnesses or health complications, even when there is pain or fear of the possibility of a serious disease. This data is consistent with results presented previously demonstrating that although some symptoms of a heart attack may be very uncomfortable, if they are not clear and unambiguously related to such an event, their interference with daily activities will be the factor that determines whether the individual will seek medical attention or not [30].

Our results show that not having ready access to health services is also relevant in producing longer delays. Thus, when an illness has still to be diagnosed, difficulties in accessing healthcare services is one of the most relevant factors in increasing time to presentation. A study on patients diagnosed with cancer showed that, for specific diseases, difficulty in accessing healthcare services was related to a delay in seeking assistance, particularly in people of most deprived areas [5]. These results are consistent with an earlier study on general population, in which it was shown that having a low income is a factor closely related to the delay in visiting a doctor [20]. So it seems that one of the ways in which lower incomes are related to longer time to presentation [31] is the difficulties in accessing health services.

In terms of the order of relevance of the factors identified in our study, the least important significant factor that influences the decision to visit a doctor is the confidence that the visit will be useful. This contrasts with the importance given to the confidence in the healthcare services when a diagnosis has been made, such as in

breast cancer for example [15]. Thus, at more premature stages, prior to the identification of the disease, confidence in the doctor is less important given that the individual still cannot focus their attention on any particular healthcare service or on the specific details of a disease, nor on the treatment possibilities or chances of improvement.

Alternatively, neither understanding the possible consequence of the symptoms in terms of the individual's health, nor familiarity with these (even having experienced them previously) are significant when it comes to deciding whether or not to visit a doctor. These are two factors that systematically have more relevance in studies into specific diseases [18,32], which makes this result somewhat surprising. This discrepancy could be explained by knowledge and familiarity with the symptom being easily linked to the consequences of the disease when a diagnosis exists. In the absence of a diagnosis, familiarity with symptoms can either minimize their importance, or be interpreted as too recurrent and therefore alarming. In this latter case, fear could be a better predictor as it is the emotional response induced by the cognitive representation of the symptom [33]. As such, further research focusing on fewer factors to establish if some of these may interact and influence the decisions taken.

Similarly, a lack of time due to other commitments considered to be more important does not appear to be decisive when deciding to go to the doctor. However, it is possible that this factor is masked by the interference that the given symptom may have on daily life. This possibility highlights the importance of performing studies in which the different factors can be evaluated competitively in order to assess their relative importance, and to optimize efforts when designing intervention programs.

This study also highlights the individual variability of all the significant factors, beyond their direct influence on the final decision, as they display random significant effects in the regression models. Specifically, while symptom interfering with daily activities increases the urgency to visit a doctor on a global level, there are differences in the degree to which this influences such a decision, as occurs with fear, pain, having ready access to health services, and confidence that the visit will be useful.

It is surprising that in this study, as opposed to others [14,15,34,35], a direct relationship was not found among the main sociodemographic variables and the urgency to visit a doctor (Model 2). However, some features of our data do suggest that these variables could indirectly influence the urgency of this decision, interacting with the effect that some of these factors have on the judgement reached (Model 3). In this sense, it was evident that the individual differences observed in terms of how the symptom' interference with daily activities influenced the final decision to go to the doctor could be at least in part explained by differences in gender and education, as demonstrated by the significant interactions between these sociodemographic variables and the random effects of the factors. Specifically, our results indicate that the influence of noticing that the symptoms are interfering with their daily activities on the increasing urgency in seeing a doctor is higher in men that in women. A similar pattern was observed in individuals with a higher level of education (university graduates) when compared with individuals who did not achieve such levels of education: those with a higher educational level increase their urgency to see a doctor most intensely than the others when the symptoms interfere with their daily activities. This result reinforces the data from a recent study that focused on the perceived barriers to visiting a doctor in university students [36].

The individual variation in terms of fear, pain, having ready access to health services, and confidence that the visit will be useful, could not be explained by the variables in our study. The individual slopes for both fear and pain demonstrate that while there may have been a global increase in the urgency to see a doctor, these same factors provoked the opposite effect in a group of individuals (see Figure 2). There are various studies that demonstrate that fear of a diagnosis and of the consequences of the disease or the treatment lead to avoidance behaviors or emotional strategies of rejection [10,13,20,37]. Alternatively, a greater urgency to visit a doctor when faced with strong pain might develop in individuals with a low tolerance to pain [38]. Thus, it is necessary to further study whether the influence of fear and pain on the final decision to go to the doctor might be mediated by variables that were not contemplated here. The individual slopes for access to health and for confidence that the visit will be useful indicate that, for a group of individuals, these factors do not

change the urgency judgment (see Figure 2). Perhaps, for some people, the effect of the other three significant factors on judgment could render these two factors irrelevant.

Some limitations of this work have to be mentioned. First, the use of simulated vignettes makes it necessary to contrast these findings in real situations; and second, we used a convenience sample, which may elicit a response bias if persons motivated to participate in a survey have different health beliefs than those that do not participate in health surveys. In addition, future research is needed in order to assess which variables could explain the individual differences, as well as to test interactions among the significant factors found in our work.

4.2. Conclusion

Together, the interference of the symptoms with daily activities is the factor that most strongly influences the urgency of an individual to visit a doctor, especially among men, and among people with a high educational level. By contrast, fear and pain also appear to be factors that could influence such decisions, although they are at times associated with the risk of potentiating avoidance behavior. Moreover, the confidence that going to the doctor may be useful is another of the elements that might help perceive more urgency.

4.3. Practice Implications

Generic health prevention campaigns aimed at reducing the time to presentation to the doctor should emphasize that when symptoms are painful, even if somehow scary, a visit to the doctor can prove the most helpful thing to do. They should also emphasize that “the sooner the better”, since waiting can lead to a high interference on daily activities. Thus, it is especially important that people understand that waiting can paradoxically increase interference in daily activities, and eventually lead to longer recovery times.

In addition, the importance of facilitating access to healthcare centers should not be overlooked, and patients should be asked about their difficulties in accessing health

services. Based on this information, measures should be designed and implemented to solve these difficulties.

Moreover, as fear, pain and confidence are not universal predisposing factors to go to the doctor, physicians should be offered tools that helped them identify those reluctant patients, in terms of fear and pain, as well as provide them with adequate patient counselling skills.

Conflicts of interest

The authors have no competing interests to declare

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Table 1. Factors included in the factorial survey along with their conceptualizations.

Factors	Levels
1. Familiarity of the symptoms	-You note a discomfort that you have had on other occasions (1)
	-You note discomfort you have not experienced previously (0)
2. Knowledge of the symptoms	-You have an idea what they might mean (0)
	-You have no idea what they might mean (1)
3. Severity of pain	-They are painful (1)
	-They are not painful (0)
4. Fear	-They do not scare you (0)
	-They scare you (1)
5. Interference of the symptoms	-They do not prevent you from performing your daily activities (0)
	-They prevent you from performing your daily activities (1)
6. Advice from other people	-No one in your surroundings recommends you see a doctor (0)
	-Someone in your surroundings recommends you see a doctor(1)
7. Confidence	-You have no trust that going to the doctor will be useful (0)
	-You are confident that going to the doctor will be useful (1)
8. Presence of other events	-There are important things happening in your life right now (0)
	-There are no major things happening in your life right now (1)
9. Access to health services	-You do not have easy access to health services (0)
	-You have easy access to health services (1)

Note: Level 1 of each factor is that considered to lead to more urgency to visit a doctor

Table 2. Results of the Regression Models with Fixed Effect Estimates and Variance Estimates for Models of Factors of Going or Not Going to the Doctor.

Parameter	Model 0	Model 1	Model 2	Model 3
Fixed Effects				
Intercept	4.44**(0.13)	6.66** (0.19)	6.98** (0.70)	6.10** (0.94)
Level 1 (within-subjects)				
F1_familiarity		0.10 (0.09)	0.10 (0.09)	0.10 (0.09)
F2_knowledge		-0.15 (0.08)	-0.15 (0.08)	-0.14 (0.08)
F3_pain		-0.90** (0.12)	-0.90** (0.12)	0.38 (0.66)
F4_fear		-0.96** (0.10)	-0.96** (0.10)	-0.77 (0.55)
F5_interference		-1.29** (0.12)	-1.29** (0.12)	-0.69* (0.32)
F6_advice of others		-0.16 (0.08)	-0.16 (0.08)	-0.17* (0.08)
F7_confidence		-0.27* (0.09)	-0.27* (0.09)	-0.28 (0.51)
F8_other events		-0.04 (0.08)	-0.04 (0.08)	-0.04 (0.08)
F9_health access		-0.64** (0.09)	-0.64** (0.09)	-0.95 (0.50)
F3*gender				0.13 (0.24)
F3*age				-0.02 (0.01)
F3*educational level				-0.28 (0.14)
F4*gender				0.01 (0.20)
F4*age				-0.01 (0.01)
F4*educational level				-0.09 (0.12)
F5*gender				0.56 *(0.24)
F5*age				-0.01 (0.01)
F5*educational level				-0.31 *(0.14)
F7*gender				0.29 (0.18)
F7*age				0.01 (0.01)
F7*educational level				-0.09 (0.11)
F9*gender				-0.05 (0.18)
F9*age				0.01 (0.01)
F9*educational level				0.07 (0.11)
Level 2 (participants)				
Gender			0.07 (0.25)	-0.42 (0.34)
Age			-0.01 (0.01)	0.01 (0.02)
Educational Level			-0.11 (0.15)	0.24 (0.20)

Table 2. (cont'). Results of the Regression Models with Fixed Effect Estimates and Variance Estimates for Models of Factors of Going or Not Going to the Doctor.

Parameter	Model 0	Model 1	Model 2	Model 3
Random Parameters				
Level 2 (participants)				
Intercept σ^2_{uo}	2.42** (0.30)	1.11** (0.32)	1.10** (0.32)	1.18** (0.31)
Level 1 (within-subjects)				
Intercept σ^2_e	5.31**(0.15)	3.30** (0.13)	3.31** (0.13)	3.31 **(0.13)
σ^2_{u2} FACTOR 1		0.14 (0.07)	0.14 (0.07)	0.14 (0.07)
σ^2_{u2} FACTOR 2		0.01 (0.06)	0.01 (0.06)	0.01 (0.06)
σ^2_{u2} FACTOR 3		0.60** (0.14)	0.60** (0.14)	0.56** (0.13)
σ^2_{u2} FACTOR 4		0.33** (0.09)	0.33** (0.09)	0.33** (0.09)
σ^2_{u2} FACTOR 5		0.73** (0.14)	0.72** (0.14)	0.63** (0.13)
σ^2_{u2} FACTOR 6		0.11 (0.06)	0.11 (0.06)	0.11 (0.06)
σ^2_{u2} FACTOR 7		0.21* (0.08)	0.21* (0.08)	0.19* (0.08)
σ^2_{u2} FACTOR 8		0.05 (0.06)	0.05 (0.06)	0.06 (0.06)
σ^2_{u2} FACTOR 9		0.21* (0.07)	0.21* (0.07)	0.21* (0.07)
Likelihood Ratio Test (LRT)		624.557**	0.684	21.394*

Note. Standard errors are shown in parentheses; * $p < .05$. ** $p < .001$. Fixed-effects refer to the change in judgment when the explanatory variable shifts from level 1 to 0.