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# Individual Frames & Emotional Intensity in Information Seeking on Public Issues: A Case from Mexico

# Encuadres individuales, intensidad emocional y búsqueda de información:

## un caso de México

Reporte de Investigación

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# Individual Frames & Emotional Intensity in Information Seeking on Public Issues: A Case from Mexico

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#### Abstract

This work proposes that both cognitions and emotions constitute individual or personal frames, and then it analyzes their effects on information seeking on public and policy issues. Our findings indicate that the stronger the emotional intensity, the weaker the prevalence of rational considerations in these frames. We also show that such emotional intensity is aroused not necessarily by the issues at stake, as most framing approaches suggest, but by the source publicizing them. From a case in Mexico, these findings are relevant at a time when politicians are becoming direct sources of information for citizens in a public communication context where political polarization represents severe challenges to modern democracy.

#### **Keywords:**

emotions and framing effects, framing theory, individual frames, emotion, and information seeking.

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#### Resumen

Este trabajo propone que tanto las cogniciones como las emociones conforman encuadres en las personas, y luego analiza sus efectos en la búsqueda de información sobre temas públicos y de política. Nuestros hallazgos indican que cuanto más fuerte es la intensidad emocional, más débil es la prevalencia de las consideraciones racionales en estos marcos. También mostramos que tal intensidad emocional no es despertada necesariamente por los temas en juego, como sugieren la mayoría de los enfoques de encuadre, sino por la fuente que los publicita. A partir de un caso en México, estos hallazgos son relevantes en un momento en que los políticos se están convirtiendo en fuentes directas de información para los ciudadanos en un contexto de comunicación pública donde la polarización política representa serios desafíos para la democracia moderna.

**Palabras clave:** emociones y encuadre, teoría del encuadre, encuadres individuales, emociones y búsqueda de información.

#### Introduction

Recognizing the relevance of emotions in communication is not new. Advertising and electoral campaigning, for instance, have been focusing on emotional arousal for years. Moreover, in the last decades, essential contributions in communication and media studies have analyzed the roles of emotions in media consumption both as a dependent (Anderson & Bushman, 2001; Cantor, 2002; Gross, 2008) and independent variables (Aarøe, 2011; Nabi et al., 2006; Zillmann, 2000).

Some authors have even examined emotions from framing theory perspectives. According to Entman (1993), frames can be classified into media and individual or personal frames. The first one, based on sociological traditions, implies a selection by the media of certain aspects of an event or a story to make them more salient for promoting specific views on problems, causes, evaluations, and treatment recommendations (Gamson & Modigliani, 1987; Reese, 2007). Kühne & Schemer (2015) study the emotional effects of news frames on information processing and opinion formation.

Besides media frames, research based on psychological traditions has studied the processes involved in forming individual frames. Entman (1993) and Scheufele (1999) acknowledge the existence of individual frames, which other researchers have already considered as preexisting schemas of meaning people use to make sense, process, and interpret information (Gamson & Modigliani, 1989; Neuman et al., 1992). Our work is in line with this second psychological trend. It contributes to a still scarce literature in Latin America on framing based on experimental research (3.8% of studies, according to Piñeiro-Naval & Mangana, 2019), in this case, a quasi-experiment. Our focus is not on how individual frames are formed but on the weight that emotions and cognitions have therein.

Robin Nabi (2003) takes emotions as frames and explains their effects on information access, attitude formation, and behavior. In this work, we do not equate emotions to frames but consider them – along with cognitions– to be critical components of individual frames; frames we all use to understand and make sense of the world surrounding us (Goffman, 1974), and that may be at the base of our attitudes and decisions –including those concerning public issues– (Druckman, 2012). In this regard, it is noteworthy that different theories of democracy have emphasized the role of rationality in public life deliberations, discarding or downgrading emotions (Marcus, 2002).

Here we study a case in Mexico to assess the effect of cognitive and emotional components of individual frames on information seeking. We provide evidence indicating that *the stronger the* 

*(negative) emotional intensity, the weaker the prevalence of other rational (cognitive) components* in the conformation of the frames individuals use to seek information on public issues. Our findings also suggest the relevance of an emotional intensity aroused not necessarily by the issues at stake but also by the primary source publicizing them.

This work divides as follows. First, we discuss how emotions and cognitions conform to individual frames. Then we describe the context of our case and present the hypothesis. In the second part, we explain the methodology and show the results. Then we discuss the findings regarding current research on the relationship between emotions and frames and their acute effects in increasingly polarized digital media and political landscapes. Finally, in the concluding remarks, we list what we consider to be the contributions and the limits of this work.

#### **Emotions and Individual Frames**

Nabi (2003) proposes a model of emotions to understand their critical roles in "reading" media content and their subsequent effects on attitudes and behavior. She equates emotions to frames through which objects and events are perceived and appraised. Here, we do not equate emotions to frames, but we argue that emotions contribute to shaping individual frames. Following Entman (1993), individual frames are "mentally stored clusters of ideas that guide individuals' processing of information" (p. 53). Many political and social psychology studies have shown that emotions and cognitions are intertwined (Damasio, 1999; Gigerenzer, 2007; Izard, 1992; Lodge & Taber, 2000; Marcus, 2002; Miller, 2011; Redlawsk, 2002; Ross, 2012). Thus, here we assume that the conformation of those mentally stored clusters of ideas implies both emotions *and* cognitions.

Izard's (1992) concept of affective-cognitive structures is key to this process. She says that "in person-environment interactions, an emotion feeling-motivational state interacts with cognitive processes to form an affective-cognitive structure" (p. 564), which is a stable pattern emerging from the traditional association of specific emotions to certain images or cognitions regarding particular issues, events, and situations, thus helping shape a person's view of them. As an example, Izard (1992) says that:

Perhaps the first and simplest affective-cognitive structure is the associative bond between an infant's feeling of enjoyment and an image on the face of its mother (or primary caregiver). The social smile is regularly elicited by the infant's perception of caregivers in daily ministrations and face-to-face play. The formation of this affective-cognitive structure begins at about three weeks of age when the social smile emerges, and the infant is capable of perceiving the contours of the face, but well before appraisal processes [cognitive evaluation] enable discrimination among faces. At this age and until about 4 or 5 months, the infant smiles at faces indiscriminately. With the emergence of perceptual discrimination, recognition memory, and storage-retrieval capacities, the bond can be established between the feelings of joy and an image of a Mother's face (p. 564).

Recalling Entman's (1993) definition of individual frames, we consider it plausible that affectivecognitive structures are implied in the conformation of these "mentally stored clusters of ideas" (p. 53). Thus, individual frames contain clusters of emotions and cognitions that guide our seeking and processing of information and its interpretation. In principle, one might presume that depending on the issue, a propensity towards a more emotional or cognitive approach would prevail in how we approach information. In this regard, following democratic theories of citizenship (Cho, 2013; Rapeli, 2014), one might expect that rational debate –i.e., acts of thinking that constitute cognitive processes (Prinz, 2004)– be predominant over emotional reactions on topics related to public policy and public interest issues.

#### A brief note on context

In 2018, the Mexican presidential elections presented the unprecedented choice to the electorate to cast a winning vote for a structural change in politics. After 12 years of insane insecurity levels –between 2006 and 2018, there have been nearly 230 thousand homicides, and 50 thousand people disappeared, according to official figures (Secretariado Ejecutivo del Sistema Nacional de Seguridad Pública, 2022)–, unbelievably unpunished corruption stories, and a stagnant economic situation, Andrés Manuel López Obrador (AMLO) won the 2018 elections with 53.17% of registered votes, also obtaining the majority in both houses of congress and control over most states. AMLO, the charismatic man leading not a party, but a movement ranging from Evangelists to old Communist militants, was committed to renewing Mexican public life, end-up corruption at all levels, and reversing social inequalities and poverty. With

56% of approval by his third year in government (Moreno, 2021), AMLO represents hope and change for large sections of Mexican society (Proceso, 2018). For some other groups, predominantly middle and upper classes, he means nothing but irresponsible populism, labeled by the conservative historian Enrique Krauze as "a tropical Messiah" (Krauze, 2006). Despite significant differences in policy contents, AMLO's style resembles that of leaders who do not care much for institutional politics and formalities and prefer direct communication through social media and daily press conferences. The effects on the public debate are evident: a divided national media and a strongly polarized social media landscape and public opinion (Dresser, 2020). Though AMLO enjoys majoritarian approval and support, it is undeniable that his opponents *feel* deep about it (Moreno, 2021).

#### Hypothesis

As said before, democratic theories assume the existence of a rational citizen who bases her choices in public life on arguments and reasons. Moreover, Sigelman & Sigelman (1984) stress that cognitive consistency is expected between preexisting political preferences and information consumption and processing. Thus, one might assume that preexisting (cognitive) preferences affect future decisions. Theoretically, cognition would presumably be stronger than emotion when selecting information and deciding on public issues.

In his *Rational Lives*, Dennis Chong (2000) explains that values and norms are expressions of rational thinking. For Chong, "we are rational in the sense of trying to identify and follow our interests within our limitations of experience and our relatively shortsighted ability to make prognoses over the life course" (p. 4). Here, norms and values define behavior forms, and they not only sanction individual choices and expectations in most aspects of life, from family to public spaces, but people can provide reasons and justifications to defend and promote them. In this sense, though for Chong values and norms are not of the same "crudely objective" kind of rationality used in marketplace transactions, they are undeniably rational in the sense that they are ultimately supported by argumentative constructions built around the people's assessment of what is more convenient to them, given their social status, context, and interests. Following Chong, we suggest that values –especially those regarding political preferences– imply acts of thinking that are typical cognitive processes (Prinz, 2004). Thus, when thinking about

public life issues, we might expect consistency between the individual's explicitly expressed political values and the kind of information content she chooses to consume. But, is this so?

According to Massey (2002 cited in Franks, 2009), "it is generally the case that unconscious emotional thoughts will precede and strongly influence our rational decisions" (p. 39). Though we do not test if emotion comes first than cognition, we test the role of values and emotions on information seeking. Additionally, we study whether the emotional intensity aroused by the source is strong enough to eclipse the expected coherence between value preferences and issue selection. That is, if emotions weigh more, under certain circumstances –intensity caused by the source– than cognitions when constituting individual frames on public issues. In this regard, the literature on social and political psychology cited above shows that cognition and emotion are intertwined and that the whole reasoning process is affectively charged. Thus, the hypothesis is:

H: Participants with stronger emotional intensity towards AMLO will tend to seek information that reinforces the direction of the emotion, regardless of their value preferences.

#### **Method and Results**

In this research, though we present a single hypothesis, we develop a relatively sophisticated method to test it. First, the inferential statistical techniques employed are a) one-way ANOVA analyses of variance to compare the averages of a continuous variable between two or more independent samples; and b) Chisquare tests to estimate the frequency distribution of data in two or more categories. Second, to prove causality and the direction of emotional effects on information seeking, we use logistic multinomial regression models, employed when the dependent variable expresses more than two events that cannot be arranged into hierarchical categories. Moreover, multinomial logit models –with more than one independent variable, as in our case– help determine the probabilities based upon parameters that later classify individuals into subsets.

#### **Demographics, Values, and Emotions**

For this research, N=267 undergraduate and graduate students from private and public universities were asked to participate in a study on emotions and information in exchange for extra credits. Students, 56% female and 44% male, whose mean age is 24 years (SD=7.19), responded to an online battery (*Appendix 1*) of 24 questions divided into four sections: 1) demographics, 2) values, 3) emotional intensity, and 4) information seeking.

The second section classifies participants' tendencies toward holding more communitarian or liberal values in public and private life. We took four questions from a national study organized by *Nexos*, a nationwide Magazine on culture and politics, and by the public opinion and market research agencies *LEXIA* and *GAUS*, in 2011 and repeated in 2018, intended to assess the aspirations and values of Mexicans (Escalante, 2011; Robles & Salmón, 2018). The questions taken required an either-or answer: "I prefer a society with more freedom or more justice"; "as things are now, Mexicans have dreams in common or only individual dreams"; "to have a better life depends on the efforts of all or only on my own"; "in life, opportunities depend on the context or on one's capacity to create them". From the answers, we created a nominal categorical variable where:

- From 0 to 1: communitarian (Group 1, N=93, 35%)
- 2: ambivalent (Group 2, N=88, 33%)
- From 3 to 4: liberal (Group 3, N=86, 32%)

The third section of the survey presented three questions on the emotional intensity raised by AMLO. It is important to note here that two basic approaches dominate the study of emotions: those that analyze them as discrete states (i.e., anxiety, anger, pride, etc.) and those that understand them as motivational dimensions of intensity, valence, and meaning (Harmon-Jones et al., 2017) Discrete emotion views have been studying specific emotional states and the conditions that may spark their arousal (Izard, 2007), anxiety being one of the most studied (Cantor, 2002; Nabi, 2003), while dimensional approaches focus on the continuous degree of positive or negative emotional states without differentiating among specific (discrete) emotions (Lively & Heise, 2014).

Regarding public and political leadership, there are certain feelings and emotions that politicians, their actions, and their proposals are expected to arouse in the population. Political campaigns tailor their messages to the emotions and values conveyed by the contenders. In this work, based on some common feelings exploited in political campaigning, we asked our participants to grade the emotional intensity regarding AMLO on a Lickert-7 scale: from the strongest feelings of anxiety to the strongest feelings of confidence; from indignation to satisfaction; and, from antipathy to appreciation. Each continuum was coded as follows: 1= strongest positive emotion, 2= positive emotion, 3= slight positive emotion, 4= indifference, 5= slight negative emotion, 6= negative emotion, 7= strongest negative emotion.

#### **Emotions & Values**

One of the first tasks was to test if the explanatory variables –value preference and the three emotion continuums–are independent, so we used Chi-square or  $\chi^2$  to prove one of the following statements:

Null hypothesis: Value preference is independent of the expressed emotional intensity of "x" (i.e., the emotion).

Alternative hypothesis: Value preference is not independent of the expressed emotional intensity of "x."

Additionally, to determine the intensity of the possible relation among these variables, we needed to obtain Cramer's V coefficient (0.00-1.00), where figures between 0.00 and 0.10= no relation, 0.11 and 0.30= weak relation, 0.31 to 0.50= moderate relation, and above 0.51= strong relation. The results show that in two of the three cases (Indignation/Satisfaction & Antipathy/Appreciation), value preference and emotional intensity are independent. In the third case (Anxiety/Confidence), the relation, however, is weak ( $\chi^2$  (12)=25.1395, *p*=0.014, Cramer's V = 0.2170).

Now, we tested if the explanatory variables of the three emotion continuums are independent of each other. The variables Confidence/Anxiety and Satisfaction/Indignation were found to be strongly correlated ( $\chi^2(36) = 519.3115$ , p < 0.01), as well as the variables Confidence/Anxiety and Appreciation/Antipathy ( $\chi^2(36)=369.2695$ , p < 0.01), and Satisfaction/Indignation and Appreciation/Antipathy ( $\chi^2(36)=416.4648$ , p < 0.01). Moreover, Cramer's V indicates this relation is very

high in two of the three interactions (Confidence/Anxiety-Satisfaction/Indignation, V=0.5694, and Satisfaction/Indignation-Appreciation/Antipathy, V=0.5099), and in the third one the relation is moderate (Confidence/Anxiety-Appreciation/Antipathy, V=0.4801). This finding on the degree of association between these continuums enabled us to generate a composite index (Emotion Intensity Index or EII) with a scale ranging from 1 to 10 –from the maximum intensity of positive emotions to the maximum intensity of negative ones–:

$$f(x) = -(0.5) + (0.5x_1) + (0.5x_2) + (0.5x_3)$$

Where:

f(x) = Value along the emotion intensity index

 $x_1 = \text{Expressed intensity along the continuum of confidence/anxiety}$ 

- $x_2$  = Expressed intensity along the continuum of satisfaction/indignation
- $x_3$  = Expressed intensity along the continuum of appreciation/antipathy

Finally, to corroborate if there is any relation now between the intensity of the expressed emotions and the value preferences, we applied a one-way ANOVA test, where the two hypotheses are:

Null Hypothesis: There is no difference between the average of the emotion intensity index and the expressed value preference

Alternative Hypothesis: The average of the emotion intensity index varies between the different expressed value preferences.

Our variance analysis showed that the emotional intensity effect is not statistically significant since F(2, 264) = 2.07, p=0.1285. Thus, it is possible to say that the value preferences are independent of the direction and intensity of the expressed emotions. In the following two sections of this part, we show the results for each emotion continuum and the emotion intensity index.

#### **Information Seeking**

The fourth section of the survey presented participants with six topics and asked them to choose only one on which they would be interested in seeking further information. Each choice refers to a specific topic (media & freedom of speech, security & crime, education & training, health & social security, inequality & justice, immigration), and participants could select only one option. Four topics related to recent AMLO's declarations and actions; two showed a positive and two a negative tone toward the president. The remaining two choices were unrelated to AMLO. Also, of the six topics, three related to individual liberties and freedoms, while the other three to collective and social benefits for the community. Choices were interspersed in the survey. Finally, each alternative meant a specific emotional and value standing.

The first thing to do here was to test if there is a relationship between value preferences and our dependent variable, information seeking. We again used the Chi-Square ( $\chi$ 2) and the Cramer's V tests (*Tables 1a-1f*). In three out of six cases –batteries 3, 5, and 6– there is no statistical evidence to suppose a relation between value preference and information seeking. In the three additional cases, a link exists –in two cases with a 90% confidence level–though, according to Cramer's V, this relation is weak. Thus, it is possible to conclude that value preference has a minimal explanatory effect in determining information seeking.

Next, we verified whether a relationship exists between this dependent variable and the three emotion continuums. For each emotion continuum, there were two batteries of information. *Tables 2a-2f* show statistically significant evidence to conclude that emotions may influence how participants selected information in five cases –three with a 99% level of confidence, one with a 95% level, and another with a 90% level. However, according to Cramer's V, the relationship is weak. Only in one case –Satisfaction/Indignation– a strong effect proved on information seeking. We conclude that, given these findings, emotions may explain most of the decisions participants took to select information.

## Table 1a

Values/Info	ormation	Anxiety Liberal	Anxiety Communitarian	Confidence Liberal	Confidence Communitarian	Neutral Liberal	Neutral Communitarian
Communitarian	Count	14	35	12	19	5	8
	Expected	17.764	29.258	14.629	14.281	10.101	6.966
	Adj. Residual	-1.230	1.588	-0.928	1.681	-2.106	0.504
Ambivalent	Count	18	33	8	14	8	7
	Expected	16.809	27.685	13.843	13.513	9.558	6.592
	Adj. Residual	0.394	1.490	-2.089	0.176	-0.652	0.202
Liberal	Count	19	16	22	8	16	5
	Expected	16.427	27.056	13.528	13.206	9.341	6.442
	Adj. Residual	0.857	-3.118	3.048	-1.891	2.803	-0.717

*Chi-Square*  $(\chi^2)$  *between values and information seeking* – *Battery 1* 

 $\chi^2(10) = 27.9021$ , p-value = 0.002, Cramer's V = 0.2286

#### Table 1b

## *Chi-Square* $(\chi^2)$ *between values and information seeking* – *Battery 2*

Values/Info	ormation	Anxiety Liberal	Anxiety Communitarian	Confidence Liberal	Confidence Communitarian	Neutral Liberal	Neutral Communitarian
Communitarian	Count	9	20	19	29	12	4
	Expected	11.146	14.281	25.079	20.202	18.809	3.483
	Adj. Residual	-0.849	2.038	-1.759	2.741	-2.177	0.350
Ambivalent	Count	12	10	25	18	20	3
	Expected	10.547	13.513	23.730	19.116	17.798	3.296
	Adj. Residual	0.583	-1.269	0.372	-0.352	0.714	-0.203
Liberal	Count	11	11	28	11	22	3
	Expected	10.307	13.206	23.191	18.682	17.393	3.221
	Adj. Residual	0.279	-0.801	1.419	-2.440	1.502	-0.152

*3 cells with expected frequency < 5* 

 $\chi^2(10) = 17.9017$ , p-value = 0.057, Cramer's V = 0.1831

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## Table 1c

Values/Info	Values/Information		Indignation	Satisfaction	Satisfaction	Neutral	Neutral
		Liberal	Communitarian	Liberal	Communitarian	Liberal	Communitarian
Communitarian	Count	12	14	38	12	7	10
	Expected	7.663	13.236	39.011	9.753	10.101	13.236
	Adj. Residual	2.026	0.281	-0.263	0.942	-1.280	-1.190
Ambivalent	Count	2	14	39	11	10	12
	Expected	7.251	12.524	36.914	9.228	9.558	12.524
	Adj. Residual	-2.486	0.550	0.550	0.753	0.185	-0.195
Liberal	Count	8	10	35	5	12	16
	Expected	7.086	12.240	36.075	9.019	9.341	12.240
	Adj. Residual	0.435	-0.840	-0.285	-1.718	1.119	1.410

*Chi-Square*  $(\chi^2)$  *between values and information seeking* – *Battery* 3

 $\chi^2(10) = 13.5255$ , *p*-value = 0.196

## Table 1d

Values/Info	ormation	Indignation Liberal	Indignation Communitarian	Satisfaction Liberal	Satisfaction Communitarian	Neutral Liberal	Neutral Communitarian
Communitarian	Count	6	13	17	20	11	26
	Expected	8.708	12.888	22.640	14.978	10.449	23.337
	Adj. Residual	-1.194	0.042	-1.688	1.755	0.224	0.789
Ambivalent	Count	10	9	17	14	11	27
	Expected	8.240	12.195	21.423	14.172	9.888	22.082
	Adj. Residual	0.787	-1.204	-1.342	-0.061	0.459	1.477
Liberal	Count	9	15	31	9	8	14
	Expected	8.052	11.918	20.936	13.850	9.663	21.581
	Adj. Residual	0.426	1.168	3.071	-1.728	-0.690	-2.290
2(10) 10.0075	1 0.055	$\gamma$ $I$ $I$ $O$ $I$	0.16				

 $\chi^2(10) = 18.0075$ , p-value = 0.055, Cramer's V = 0.1836

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## Table 1e

Values/Info	rmation	Antipathy Liberal	Antipathy Communitarian	Appreciation Liberal	Appreciation Communitarian	Neutral Liberal	Neutral Communitarian
Communitarian	Count	4	31	8	20	23	7
	Expected	4.180	28.213	10.101	20.551	18.809	11.146
	Adj. Residual	-0.111	0.779	-0.867	-0.170	1.340	-1.640
Ambivalent	Count	2	25	8	18	20	15
	Expected	3.955	26.697	9.558	19.446	17.798	10.547
	Adj. Residual	-1.229	-0.480	-0.652	-0.454	0.714	1.785
Liberal	Count	6	25	13	21	11	10
	Expected	3.865	26.090	9.341	19.004	17.393	10.307
	Adj. Residual	1.350	-0.310	1.540	0.630	-2.085	-0.124

*Chi-Square*  $(\chi^2)$  *between values and information seeking* – *Battery* 5

*3 cells with expected frequency < 5* 

 $\chi^2(10) = 12.0262$ , *p*-value = 0.283

## Table 1f

## *Chi-Square* $(\chi^2)$ *between values and information seeking* – *Battery* 6

Values/Information		Antipathy	Antipathy	Appreciation	Appreciation	Neutral	Neutral
		Liberal	Communitarian	Liberal	Communitarian	Liberal	Communitarian
Communitarian	Count	12	9	18	16	17	21
	Expected	15.326	7.315	19.157	13.584	21.944	15.674
	Adj. Residual	-1.152	0.804	-0.368	0.879	-1.496	1.827
Ambivalent	Count	12	9	19	11	22	15
	Expected	14.502	6.921	18.127	12.854	20.764	14.831
	Adj. Residual	-0.878	1.005	0.281	-0.683	0.379	0.059
Liberal	Count	20	3	18	12	24	9
	Expected	14.172	6.764	17.715	12.562	20.292	14.494
	Adj. Residual	2.057	-1.831	0.092	-0.208	1.144	-1.922

 $\chi^2(10) = 13.2548$ , *p*-value = 0.210

## Table 2a

Values/Information		Anxiety Liberal	Anxiety Communitarian	Confidence Liberal	Confidence Communitarian	Neutral Liberal	Neutral Communitarian
Strongest	Count	3	7	4	1	3	2
confidence	Expected	3.82	6.292	3.146	3.071	2.172	1.498
	Adj. Residual	-0.485	0.354	0.545	-1.336	0.618	0.443
Confidence	Count	2	8	14	6	0	1
	Expected	5.921	9.753	4.876	4.76	3.367	2.322
	Adj. Residual	-1.906	-0.721	4.787	0.657	-2.067	-0.959
Slight confidence	Count	6	4	8	10	4	2
	Expected	6.494	10.697	5.348	5.221	3.693	2.547
	Adj. Residual	-0.231	-2.648	1.337	2.434	0.181	-0.381
Indifference	Count	7	20	6	9	7	7
	Expected	10.697	17.618	8.809	8.599	6.082	4.195
	Adj. Residual	-1.414	0.771	-1.16	0.167	0.443	1.602
Slight anxiety	Count	9	19	4	9	3	4
	Expected	9.169	15.101	7.551	7.371	5.213	3.596
	Adj. Residual	-0.068	1.338	-1.554	0.72	-1.134	0.245
Anxiety	Count	9	16	4	5	5	3
	Expected	8.022	13.213	6.607	6.449	4.562	3.146
	Adj. Residual	0.418	1.009	-1.203	-0.676	0.237	-0.093
Strongest anxiety	Count	15	10	2	1	7	1
	Expected	6.876	11.326	5.663	5.528	3.91	2.697
	Adj. Residual	3.703	-0.512	-1.803	-2.25	1.779	-1.155

Chi-Square ( $\chi 2$ ) and Cramer's V between emotions and information seeking – Confidence/Anxiety and Battery 1

17 cells with expected frequency < 5

 $\chi^2(30) = 66.8571$ , *p*-value = 0.000, *V* = 0.2238

## Table 2b

Values/Informat	ion	Anxiety	Anxiety	Confidence	Confidence	Neutral	Neutral
		Liberal	Communitarian	Liberal	Communitarian	Liberal	Communitarian
Strongest	Count	3	4	2	7	3	1
confidence	Expected	2.397	3.071	5.393	4.345	4.045	0.749
	Adj. Residual	0.432	0.599	-1.778	1.497	-0.605	0.307
Confidence	Count	0	3	12	9	5	2
	Expected	3.715	4.76	8.36	6.734	6.27	1.161
	Adj. Residual	-2.185	-0.933	1.567	1.05	-0.604	0.844
Slight	Count	0	10	7	8	9	0
confidence	Expected	4.075	5.221	9.169	7.386	6.876	1.273
	Adj. Residual	-2.303	2.434	-0.897	0.273	0.971	-1.231
Indifference	Count	4	8	14	13	14	3
	Expected	6.712	8.599	15.101	12.165	11.326	2.097
	Adj. Residual	-1.255	-0.25	-0.373	0.304	1.001	0.715
Slight anxiety	Count	7	6	13	9	9	4
	Expected	5.753	7.371	12.944	10.427	9.708	1.798
	Adj. Residual	0.612	-0.606	0.02	-0.552	-0.281	1.849
Anxiety	Count	12	10	11	2	7	0
	Expected	5.034	6.449	11.326	9.124	8.494	1.573
	Adj. Residual	3.605	1.655	-0.123	-2.904	-0.625	-1.393
Strongest	Count	6	0	13	10	7	0
anxiety	Expected	4.315	5.528	9.708	7.82	7.281	1.348
	Adj. Residual	0.93	-2.748	1.329	0.947	-0.125	-1.272

Chi-Square ( $\chi 2$ ) and Cramer's V between emotions and information seeking – Confidence/Anxiety and Battery 2

*15 cells with expected frequency < 5* 

*I cell with expected frequency < 1* 

 $\chi^2(30) = 57.1020$ , p-value = 0.002, V = 0.2068

## Table 2c

Values/In	nformation	Indignation Liberal	Indignation Communitarian	Satisfaction Liberal	Satisfaction Communitarian	Neutral Liberal	Neutral Communitarian
Strongest	Count	1	3	7	3	2	4
satisfaction	Expected	1.648	2.846	8.39	2.097	2.172	2.846
	Adj. Residual	-0.548	0.102	-0.655	0.685	-0.129	0.768
Satisfaction	Count	0	2	15	4	2	5
	Expected	2.307	3.985	11.745	2.936	3.041	3.985
	Adj. Residual	-1.676	-1.135	1.317	0.693	-0.668	0.58
Slight	Count	2	8	17	3	3	5
satisfaction	Expected	3.131	5.408	15.94	3.985	4.127	5.408
	Adj. Residual	-0.721	1.299	0.376	-0.563	-0.635	-0.205
Indifference	Count	3	6	20	5	6	8
	Expected	3.955	6.831	20.135	5.034	5.213	6.831
	Adj. Residual	-0.554	-0.379	-0.044	-0.018	0.403	0.533
Slight	Count	5	7	16	7	6	4
indignation	Expected	3.708	6.404	18.876	4.719	4.888	6.404
	Adj. Residual	0.768	0.279	-0.953	1.217	0.584	-1.125
Indignation	Count	8	3	23	3	4	2
	Expected	3.543	6.12	18.037	4.509	4.67	6.12
	Adj. Residual	2.699	-1.487	1.674	-0.82	-0.359	-1.963
Strongest	Count	3	9	14	3	6	10
indignation	Expected	3.708	6.404	18.876	4.719	4.888	6.404
	Adj. Residual	-0.421	1.214	-1.616	-0.917	0.584	1.682

Chi-Square ( $\chi 2$ ) and Cramer's V between emotions and information seeking – Satisfaction/Indignation and Battery 3

23 cells with expected frequency < 5

 $\chi^2(30) = 29.9998$ , p-value = 0.466, V = 0.1499

## Table 2d

Values/In	formation	Indignation	Indignation	Satisfaction	Satisfaction	Neutral	Neutral
		Liberal	Communitarian	Liberal	Communitarian	Liberal	Communitarian
Strongest	Count	1	2	6	7	1	3
satisfaction	Expected	1.873	2.772	4.869	3.221	2.247	5.019
	Adj. Residual	-0.696	-0.519	0.613	2.39	-0.918	-1.083
Satisfaction	Count	0	1	10	6	3	8
	Expected	2.622	3.88	6.816	4.509	3.146	7.026
	Adj. Residual	-1.798	-1.665	1.482	0.81	-0.092	0.449
Slight	Count	2	10	12	2	5	7
satisfaction	Expected	3.558	5.266	9.251	6.12	4.27	9.536
	Adj. Residual	-0.937	2.4	1.122	-1.963	0.405	-1.024
Indifference	Count	5	2	13	9	6	13
	Expected	4.494	6.652	11.685	7.73	5.393	12.045
	Adj. Residual	0.277	-2.146	0.488	0.55	0.306	0.351
Slight	Count	2	10	7	6	6	14
indignation	Expected	4.213	6.236	10.955	7.247	5.056	11.292
	Adj. Residual	-1.242	1.781	-1.507	-0.555	0.489	1.021
Indignation	Count	10	3	12	6	2	10
	Expected	4.026	5.959	10.468	6.925	4.831	10.79
	Adj. Residual	3.414	-1.426	0.594	-0.419	-1.493	-0.303
Strongest	Count	5	9	5	7	7	12
indignation	Expected	4.213	6.236	10.955	7.247	5.056	11.292
-	Adj. Residual	0.441	1.308	-2.268	-0.11	1.006	0.267

Chi-Square ( $\chi 2$ ) and Cramer's V between emotions and information seeking – Satisfaction/Indignation and Battery 4

16 cells with expected frequency < 5

 $\chi^2(30) = 50.5508$ , *p*-value = 0.011, *V* = 0.1946

## Table 2e

Values/Info	ormation	Antipathy	Antipathy	Satisfaction	Satisfaction	Neutral	Neutral
		Liberal	Communitarian	Liberal	Communitarian	Liberal	Communitarian
Strongest	Count	0	7	8	7	10	3
8	Expected	1.573	10.618	3.801	7.734	7.079	4.195
appreciation	Adj. Residual	-1.377	-1.427	2.447	-0.321	1.319	-0.667
	Count	1	7	6	7	7	1
Appreciation	Expected	1.303	8.798	3.15	6.408	5.865	3.476
	Adj. Residual	-0.288	-0.769	1.802	0.281	0.556	-1.499
SI: -1.4	Count	0	7	4	6	6	5
Slight	Expected	1.258	8.494	3.041	6.187	5.663	3.356
appreciation	Adj. Residual	-1.213	-0.649	0.616	-0.09	0.168	1.011
	Count	2	10	2	11	14	6
Indifference	Expected	2.022	13.652	4.888	9.944	9.101	5.393
	Adj. Residual	-0.018	-1.299	-1.517	0.416	1.994	0.305
	Count	2	14	0	11	9	7
Slight antipathy	Expected	1.933	13.045	4.67	9.502	8.697	5.154
	Adj. Residual	0.054	0.346	-2.499	0.601	0.126	0.947
	Count	2	13	5	10	3	4
Antipathy	Expected	1.663	11.225	4.019	8.176	7.483	4.434
	Adj. Residual	0.288	0.684	0.559	0.779	-1.977	-0.237
Stuongost	Count	5	23	4	7	5	6
Strongest	Expected	2.247	15.169	5.431	11.049	10.112	5.993
antipathy	Adj. Residual	2.084	2.672	-0.721	-1.531	-1.997	0.004

Chi-Square ( $\chi 2$ ) and Cramer's V between emotions and information seeking – Appreciation / Antipathy and Battery 5

17 cells with expected frequency < 5

 $\chi^2(30) = 43.5041$ , p-value = 0.053, V = 0.1805

## Table 2f

Values/Info	ormation	Antipathy Liberal	Antipathy Communitarian	Satisfaction Liberal	Satisfaction Communitarian	Neutral Liberal	Neutral Communitarian
Strongest	Count	1	2	13	9	7	3
appreciation	Expected	5.768	2.753	7.21	5.112	8.258	5.899
	Adj. Residual	-2.33	-0.507	2.596	1.996	-0.537	-1.404
Appreciation	Count	2	0	9	8	8	2
	Expected	4.779	2.281	5.974	4.236	6.843	4.888
	Adj. Residual	-1.473	-1.667	1.472	2.096	0.536	-1.517
Slight	Count	3	3	7	4	7	4
appreciation	Expected	4.614	2.202	5.768	4.09	6.607	4.719
	Adj. Residual	-0.869	0.592	0.609	-0.051	0.185	-0.384
Indifference	Count	5	6	7	7	10	10
	Expected	7.416	3.539	9.27	6.573	10.618	7.584
	Adj. Residual	-1.065	1.494	-0.917	0.198	-0.238	1.055
Slight antipathy	Count	10	1	6	6	7	13
	Expected	7.086	3.382	8.858	6.281	10.146	7.247
	Adj. Residual	1.308	-1.473	-1.176	-0.132	-1.234	2.559
Antipathy	Count	9	4	6	3	9	6
	Expected	6.097	2.91	7.622	5.404	8.73	6.236
	Adj. Residual	1.386	0.717	-0.71	-1.206	0.112	-0.112
Strongest	Count	14	5	7	2	15	7
antipathy	Expected	8.24	3.933	10.3	7.303	11.798	8.427
	Adj. Residual	2.436	0.622	-1.28	-2.356	1.183	-0.598

Chi-Square ( $\chi 2$ ) and Cramer's V between emotions and information seeking – Appreciation / Antipathy and Battery 6

13 cells with expected frequency < 5

 $\chi^2(30) = 52.0951$ , p-value = 0.007, V = 19.75

Individual Frames & Emotional Intensity in Information Seeking on Public Issues: A Case from Mexico

Additionally, we decided to run an ANOVA test between the Emotion Intensity Index (EII) and information seeking (Tables 3a-3f). This time the most exciting finding is that, except for battery 3 (Satisfaction/Indignation), there is significant evidence to affirm that emotional intensity affects information seeking.

#### Table 3a

Battery 1					
		Mean	Std. Dev.	Frequency	
Anxiety Liberal		7.1862745	2.5336945	51	
Anxiety Commun	itarian	6.2619048	2.5417907	84	
Confidence Libera	al	4.6190476	2.6406982	42	
Confidence Comn	nunitarian	5.3536585	2.2283511	41	
Neutral Liberal		6.5689655	2.8275562	29	
Neutral Communi	tarian	5.4	2.2629743	20	
Total		6.0093633	2.6402228	267	
Source	SS	df	MS	F	Prob > F
Between groups	191.319322	2	5 38.2638645	6.01	0.0000
Within groups	1662.9072	7 26	1 6.37129222		
Total	1854.22659	9 26	6 6.97077666		

Main results of analysis of variance for EII and information seeking – Battery 1

#### Table 3b

Main results of analysis of variance for EII and information seeking – Battery 2

Battery 2						
		Mean	9	Std. Dev.	Frequency	
Anxiety Liberal		7.625	2	.4063089	32	
Anxiety Commun	itarian	5.402439	2	.2836909	41	
Confidence Libera	ıl	6.2638889	2	.6814073	72	
Confidence Comn	nunitarian	5.3534483	,	2.678715	58	
Neutral Liberal		6.0277778	2	.6607147	54	
Neutral Communitarian		5.2	2	.0165978	10	
Total		6.0093633	2	.6402228	267	
Source	SS	df		MS	F	Prob > F
Between groups	134.81808	1	5	26.9636162	4.09	0.0014
Within groups	1719.4085	1 2	261	6.58777207		
Total	1854.22659	9 2	266	6.97077666		

Battery 3					
		Mean	Std. Dev.	Frequency	
Indignation Libera	al	7.2045455	2.1857716	22	
Indignation Comm	nunitarian	6.0526316	2.8207472	38	
Satisfaction Liber	al	5.90625	2.58158	112	
Satisfaction Comr	nunitarian	5.2678571	2.4850745	28	
Neutral Liberal		6.2413793	2.6946398	29	
Neutral Communi	tarian	5.9473684	2.8469744	38	
Total		6.0093633	2.6402228	267	
Source	SS	df	MS	$\mathbf{F}$	Prob > F
Between groups	49.7905314	1 <u> </u>	5 9.95810627	1.44	0.2101
Within groups	1804.43606	5 261	6.91354812		
Total	1854.22659	) 260	6.97077666		

#### Table 3c

Main results of analysis of variance for EII and information seeking – Battery 3

#### Table 3d

Main results of analysis of variance for EII and information seeking – Battery 4

Battery 4					
		Mean	Std. Dev.	Frequency	
Indignation Liber	al	6.96	2.3090402	25	
Indignation Comr	nunitarian	6.5405405	2.5803165	37	
Satisfaction Liber	al	5.4692308	2.663229	65	
Satisfaction Com	nunitarian	5.3488372	2.9530752	43	
Neutral Liberal		6.2166667	2.4833353	30	
Neutral Communi	itarian	6.2164179	2.5003392	67	
Total		6.0093633	2.6402228	267	
Source	SS	df	MS	F	Prob > F
Between groups	74.9178922	2 5	14.9835784	2.2	0.0549
Within groups	1779.3087	7 261	6.81727471		
Total	1854.22659	) 266	6.97077666		

Dattaur 5	Summary of EII					
Battery 5	Mean	Std. Dev.	Frequency			
Antipathy Liberal	7.4166667	1.7298625	12			
Antipathy Communitarian	6.8518519	2.4754349	81			
Satisfaction Liberal	4.7413793	3.0461354	29			
Satisfaction Communitarian	5.9237288	2.5168631	59			
Neutral Liberal	5.1203704	2.5270894	54			
Neutral Communitarian	6.15625	2.4997984	32			
Total	6.0093633	2.6402228	267			

#### Table 3e

Main results of analysis of variance for EII and information seeking – Battery 5

Source	SS	df	MS	F	Prob > F
Between groups	171.684236	5	34.3368472	5.33	0.0001
Within groups	1682.54236	261	6.44652244		
Total	1854.22659	266	6.97077666		

#### Table 3f

Main results of analysis of variance for EII and information seeking – Battery 6

Dattom: (	Summary of EII					
Battery 6	Mean	Std. Dev.	Frequency			
Antipathy Liberal	7.0909091	2.0777692	44			
Antipathy Communitarian	6.6666667	2.4866309	21			
Satisfaction Liberal	5.1545455	2.7886555	55			
Satisfaction Communitarian	4.7820513	2.5823155	39			
Neutral Liberal	6.2619048	2.8874829	63			
Neutral Communitarian	6.4	2.0466158	45			
Total	6.0093633	2.6402228	267			

Source	SS	df	MS	F	Prob > F
Between groups	170.36119	5	34.0722381	5.28	0.0001
Within groups	1683.8654	261	6.45159158		
Total	1854.22659	266	6.97077666		

#### **Multinomial Logistic Regressions**

So far, we have proved that the dependent variable, information seeking, shows no relation with the variable value preference. Instead, it shows a stronger statistical association of significance and intensity with the EII than with each of the three emotion continuums alone. Therefore, we used the EII in the following multinomial logistic regressions to test the hypothesis.<sup>1</sup> Here, the generalization of the regression mode  $log(\pi_j/\pi_j) = \alpha_j + \beta_1 X_1 + \beta_2 X_2 + \cdots$  (1)

Where:

 $log(\pi_j/\pi_J)$  = The logarithm of the probability to choose the information reinforcing a discrete emotion over the pivot.

*CapX*\_1= The Value Preference of the participant who seeks information (1-Communitarian, 2-Ambivalent, 3-Liberal).

 $CapCapX_2$  = The EII expressed by the participant, graded on a scale from 1 to 10 (the latter figure being the maximum level of possible negative emotions).

*j*=1,...,5

The expected outcome in each model would stress that:

- 1) Value preferences would not be relevant as an explanatory variable.
- 2) The relative risk coefficients associated with the EII would be statistically significant for most of the selections regarding the pivot. The interpretations would vary according to the emotion expressed in the pivot. Thus, it is possible to assume one of the following outcomes: a) Positive emotion pivot. The RRR of the EII will increase if the selected option refers to a negative emotion; b) Negative emotion pivot. The RRR of the EII will decrease if the chosen option refers to positive emotion and 3) Neutral pivot. The RRR of the EII will increase if the selected option refers to negative emotion and will decrease if the option relates to a positive emotion.
- 3) To isolate possible effects related to participants' personal characteristics, each model included three control variables: gender, age, and kind of university (public or private). Here are the results with statistical significance.

<sup>&</sup>lt;sup>1</sup> Hypothesis: Participants with stronger emotional intensity towards AMLO, will tend to seek information that reinforces the direction of the emotion, regardless of their values.

#### Model A (pivot: Anxiety-communitarian) (Table 4):

- The higher the value in the EII –that is, when the positive emotion intensity decreases up to ambivalence and gets closer to negative emotions– the less the participant will tend to seek information implying feelings of confidence in relation to the pivot. For each rising point in the scale, a person is 1.36 times less prone to pursue a topic with a liberal-confidence approach with regard to the pivot. Such a tendency decreases to 1.7 if the person seeks information with a communitarian-confidence tone in relation to the pivot.
- For each marginal increase in the EII, an individual is 1.25 times less prone to seek information implying a neutral-communitarian approach than information with an anxiety-communitarian tone –the pivot.

## Model B (pivot: Confidence-liberal) (Table 5):

- An ambivalent participant is 2.66 times less prone to seek information with an anxietycommunitarian approach than someone with communitarian values in relation to the pivot.
- For each marginal increase in the EII, an individual is 1.27 times more prone to seek information implying an anxiety-liberal approach than information with a confidence-liberal tone.

#### Model C (pivot: Satisfaction-liberal) (Table 6):

- An ambivalent participant is 5.7 times less prone to seek information implying an indignationliberal approach than with a satisfaction-liberal tone (the pivot) as compared to someone expressing communitarian value preferences.
- For each marginal increase in the EII, a participant is 1.18 times more prone to seek information with an indignation-liberal approach than information with a satisfaction-liberal tone. That is, the more intense and negative the emotions expressed, the higher the chances of selecting information in that same direction.
- Conversely, for each marginal increase in the EII, a participant is 1.19 times less prone to seek information with a satisfaction-communitarian tone than a satisfaction-liberal tone.

## Model D (pivot: neutral-communitarian) (Table 7):

- Someone with liberal preferences is more prone than a communitarian to seek information with liberal tones over information showing a neutral-communitarian approach: 3.2 times if the information implies an indignation-liberal tone, and 4.6 times if it shows a satisfaction-liberal tone.
- For each marginal increase in the EII, a participant is 1.14 less prone to seek information with a satisfaction-liberal approach than with a neutral-communitarian tone. Again, the more intense and negative the emotions expressed, the higher the chances of selecting information in that same direction.

## Model E (pivot: antipathy-communitarian) (Table 8):

- For each marginal increase in the EII, a participant is less prone to seek information that reinforces appreciation than antipathy: 1.3 times less prone if the tone is liberal (p-value < 0.01) and 1.19 less prone if the tone is communitarian. Here, the more intense and negative the emotions expressed, the lesser the possibility that participants seek information with a positive tone.
- For each marginal increase in the EII, a participant is 1.35 times less prone to seek information with a neutral-communitarian tone than information with an antipathy-communitarian approach.

#### Model F (pivot: neutral-liberal) (Table 9):

- An ambivalent participant is 4.6 times less prone to seek information with an antipathy-liberal tone than neutral-liberal information as compared to another participant with communitarian value preferences.
- For each marginal increase in the EII, a person is 1.63 times more prone to seek information with an antipathy-liberal tone than with a neutral-liberal tone, showing, once again, that the intensity of the negative emotions directly relates to the propensity to seek information that reflects these emotional tendencies.
- In addition, for each marginal increase in the EII, a person is less prone to seek information showing appreciation than neutral information. This tendency is 1.17 times smaller if the

selected alternative has an appreciation-liberal tone and 1.20 times smaller if the chosen option presents an appreciation-communitarian approach. The stronger the negative emotional intensity –i.e., an EII closer to 10—the smaller the probability of seeking information with a positive emotional tone.

These results confirm that *there is enough statistical evidence to assume that emotional intensity affects information seeking*. Though the value preference variable is also significant, its error probability is greater than that of the emotional variable. We can affirm that a negative emotion makes it less probable for an individual to look for positive information and more liable to seek information that reflects that emotional tendency.

## Table 4

	(1)	(3)	(4)	(5)	(6)
Pivot:	A my loty Tile and	Confidence-Liberal	Confidence-	Neutral-Liberal	Neutral-
Anxiety-Communitarian	Anxiety-Liberal	Confidence-Liberal	Communitarian	Neutrai-Liberai	Communitarian
Values (2 – Ambivalent)	1.317 (0.583)	0.756 (0.402)	0.867 (0.380)	1.798 (1.143)	1.001 (0.588)
Values (3 – Liberal)	2.691 (1.282)**	5.351 (2.664)***	1.078 (0.572)	8.474 (5.302)***	1.864 (1.250)
Emotion index	1.128 (0.0884)	0.734 (0.0613)***	0.852 (0.0665)**	0.903 (0.0905)	0.802 (0.0859)**
Gender (1 - Male)	0.891 (0.331)	0.868 (0.357)	1.372 (0.536)	1.636 (0.757)	0.781 (0.416)
Age	1.002 (0.0265)	0.975 (0.0289)	0.946* (0.0318)	0.916 (0.0521)	0.936 (0.0509)
Type of university (1 – Private)	1.939 (0.918)	1.229 (0.573)	0.832 (0.369)	12.38 (13.46)**	4.372 (3.627)*
Constant	0.114 (0.122)**	2.838 (3.007)	4.775 (5.328)	0.167 (0.325)	1.183 (2.094)

SE in parentheses. \*\*\*p<0.01, \*\*p<0.05, \*p<0.1

## Table 5

#### Relative Risk Ratios – Model B: Information Seeking within Battery 2

	(1)	(2)	(4)	(5)	(6)
Pivot:	Anxiety-Liberal	Anxiety-	Confidence-	Neutral-Liberal	Neutral-Communitarian
Confidence-Liberal		Communitarian	Communitarian		
Values (2 – Ambivalent)	1.180 (0.654)	0.376 (0.191)*	0.384 (0.173)**	1.395 (0.678)	0.439 (0.386)
Values (3 – Liberal)	0.766 (0.425)	0.360 (0.178)**	0.226 (0.109)***	1.459 (0.702)	0.358 (0.321)
Emotion index	1.275 (0.128)**	0.907 (0.0719)	0.916 (0.0663)	0.910 (0.0698)	0.889 (0.119)
Gender (1 - Male)	1.280 (0.576)	1.755 (0.718)	1.418 (0.538)	1.981 (0.746)*	0.317 (0.278)
Age	0.908 (0.0512)*	0.988 (0.0330)	1.043 (0.0276)	0.938 (0.0387)	1.109 (0.0436)***
Type of university (1 – Private)	0.647 (0.394)	0.437 (0.206)*	0.483 (0.209)*	3.482 (2.194)**	0.596 (0.463)
Constant	0.921 (1.541)	3.467 (3.797)	1.353 (1.269)	1.089 (1.430)	0.0578 (0.0909)*

SE in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Table 6

Relative Risk Ratios – Model C	: Information Seeking	g within Battery 3
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	(1)	(2)	(4)	(5)	(6)
Pivot:	Indignation-Liberal	Indignation-	Satisfaction-	Neutral-Liberal	Neutral-
Satisfaction-Liberal		Communitarian	Communitarian		Communitarian
Values (2 – Ambivalent)	0.185 (0.105)**	1.007 (0.457)	0.967 (0.478)	1.400 (0.791)	1.115 (0.550)
Values (3 – Liberal)	0.677 (0.360)	0.793 (0.389)	0.506 (0.304)	1.917 (1.059)	1.772 (0.840)
Emotion index	1.188 (0.123)*	0.962 (0.0754)	0.837 (0.0760)*	1.017 (0.0884)	0.992 (0.0731)
Gender (1 - Male)	1.472 (0.727)	1.254 (0.498)	1.286 (0.583)	4.877 (2.282)***	1.539 (0.592)
Age	0.878 (0.0651)*	0.938 (0.0388)	0.898 (0.0519)*	0.985 (0.0329)	1.018 (0.0253)
Type of university (1 – Private)	0.693 (0.402)	2.962 (1.663)*	3.882 (2.678)**	2.321 (1.295)	1.562 (0.704)
Constant	2.134 (4.325)	0.821 (1.076)	2.933 (4.936)	0.0551** (0.0692)	0.108** (0.105)

*SE in parentheses.* \*\*\* *p*<0.01, \*\* *p*<0.05, \* *p*<0.1

#### Table 7

Relative Risk Ratios – Model D: Information Seeking within Battery 4

	(1)	(2)	(3)	(4)	(5)
Pivot:	Anxiety-Liberal	Anxiety-	kiety-	Confidence-	Noutral Liboral
Neutral-Communitarian		Communitarian Confidence-Liberal	Communitarian	Neutral-Liberal	
Values (2 – Ambivalent)	2.016 (1.249)	0.683 (0.362)	1.266 (0.594)	0.727 (0.334)	1.098 (0.570)
Values (3 – Liberal)	3.220 (2.116)*	2.273 (1.189)	4.618 (2.244)***	1.039 (0.561)	1.545 (0.912)
Emotion index	1.101 (0.113)	1.038 v	0.874 (0.0665)*	0.882 (0.0703)	0.929 (0.0867)
Gender (1 - Male)	5.324 (2.751)***	2.022 v	2.089 (0.824)*	2.544 (1.048)**	1.110 (0.544)
Age	0.915 (0.0391)**	0.976 (0.0290)	0.879 (0.0319)***	0.973 (0.0277)	0.857 (0.0570)**
Type of university (1 – Private)	0.278 (0.184)*	0.386 (0.213)*	0.148 (0.0748)***	0.549 (0.291)	0.852 (0.649)
Constant	1.046 (1.615)	1.096 (1.315)	75.77 (91.67)***	3.137 (3.552)	22.15 (42.97)

SE in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

#### Table 8

	(1)	(3)	(4)	(5)	(6)
Pivot:	Antipathy-Liberal	Appreciation-Liberal	Appreciation-	Neutral-Liberal	Neutral-
Antipathy-Communitarian			Communitarian		Communitarian
Values (2 – Ambivalent)	0.831 (0.783)	1.510 (0.915)	1.121 (0.488)	1.149 (0.502)	2.806 (1.522)*
Values (3 – Liberal)	2.150 (1.575)	2.579 (1.447)*	1.409 (0.601)	0.730 (0.352)	1.958 (1.123)
Emotion index	1.053 (0.149)	0.767 (0.0705)***	0.841 (0.0607)**	0.741 (0.0581) ***	0.852 (0.0762)*
Gender (1 - Male)	3.739 (2.671)*	1.427 (0.668)	0.613 (0.221)	0.562 (0.217)	1.047 (0.451)
Age	0.813 (0.112)	0.951 (0.0369)	1.023 (0.0277)	1.034 (0.0305)	0.986 (0.0374)
Type of university (1 – Private)	0.384 (0.297)	0.235 (0.128)***	1.828 (0.839)	5.229 (2.889)***	2.516 (1.583)
Constant	6.264 (21.67)	6.511 (8.016)	0.851 (0.840)	0.644 (0.712)	0.400 (0.540)

Relative Risk Ratios – Model E: Information Seeking within Battery 5

*SE in parentheses.* \*\*\* *p*<0.01, \*\* *p*<0.05, \* *p*<0.1

#### Table 9

Relative Risk Ratios – Model F: Information Seeking within Battery 6

	(1)	(2)	(3)	(4)	(6)
Baseline:	Antipathy-Liberal	Antipathy-	Appreciation-	Appreciation-	Neutral-
Neutral-Liberal		Communitarian	Liberal	Communitarian	Communitarian
Values (2 – Ambivalent)	1.382 (0.763)	1.905 (1.159)	1.557 (0.756)	0.988 (0.534)	1.879 (0.891)
Values (3 – Liberal)	3.746 (2.097)**	0.853 (0.677)	2.736 (1.467)*	1.949 (1.130)	3.469 (1.796)**
Emotion index	1.121 (0.106)	1.062 (0.122)	0.827 (0.0695)**	0.800 (0.0730)**	0.963 (0.0791)
Gender (1 - Male)	3.736 (1.714)***	2.220 (1.231)	1.386 (0.596)	0.813 (0.395)	1.395 (0.580)
Age	0.997 (0.0368)	0.889 (0.0573)*	1.003 (0.0335)	1.019 (0.0352)	0.992 (0.0335)
Type of university (1 – Private)	0.639 (0.400)	0.161 (0.112)***	0.514 (0.290)	0.289 (0.168)**	0.586 (0.332)
Constant	0.217 (0.305)	9.662 (18.49)	3.340 (4.055)	4.211 (5.274)	1.635 (2.009)

*SE in parentheses.* \*\*\* *p*<0.01, \*\* *p*<0.05, \**p*<0.1

#### **Discussion & Final Remarks**

This work analyses the effects of cognitive and emotional components of individual or personal frames on information seeking on public issues. Statistically, we show that value preferences are independent of the emotional intensity in two out of three cases –and in the third one, dependency is fragile. We also demonstrate that value preferences have minimal effects on information seeking. At the same time, in most models, there is significant evidence to prove that the direction and the intensity of the emotions directly affect the dependent variable. Though this work analyzes a case in Mexico, we think it nevertheless originally contributes to current debates on framing and emotions in the following aspects.

First, through exploring a quasi-experimental approach to framing in a Latin American case. Many authors have noted that framing approaches have consolidated in communication studies drawing from many other disciplines (Borah, 2011; Brugman & Burgers, 2018; De Vreese, 2012). However, in general, the sociological approach and content analyses have been dominant in framing studies in the last two decades (Borah, 2011; Muñiz, 2020). Some authors have even pointed out the neglect of the psychological tradition (Iyengar, 1991) which in Latin American framing studies has even been scarcer (Piñeiro-Naval & Mangana, 2019).

Second, conceptualizing individual frames as the result of cognitive and emotional components. Recently, there has been an increase in quality research linking framing theory approaches to emotions. Nabi (2003) equates emotions to frames in her study on selection, attitudes, and decisions. Our study proposes, instead, that both emotions and cognitions are crucial components of the frames individuals use to see, to understand and to explain the world. Following Izard's (1992) idea that all interactions between the individual and the environment are mediated by affective-cognitive structures, and Entman's (1993) notion that individual frames are "mentally stored clusters of ideas that guide an individual's processing of information" (p. 53), there is every possibility that those structures may help shape these mentally stored clusters of ideas. Thus, emotions and cognitions are both contained in the individual frames that guide, at least, our seeking of information.

Third, regarding the relationship between emotions and information selection. One of the most relevant theories explaining why people select the content they do is Dolf Zillmann's (2000) Mood Management Theory (MMT). MMT proposes that individuals, moved by hedonistic desires for

wellbeing, consume media content to modulate their affective states: prolonging positive states and reducing negative ones. We must say that while most MMT studies that prove the model work with "mood" rather than "emotions," Nabi et al. (2006), when examining the effect of the emotion of regret on media selection, found that, contrary to the MMT hypothesis, individuals with an enduring regret over an experience were more disposed to watch contents on the topic of their remorse. Our study also proves that people seek information reflecting the direction and intensity of their emotions. Perhaps "mood" and "emotions" have differential (coping) effects on content selection, or maybe, as in our case, the realistic nature of the information may explain the difference. So, whereas individuals may generally select entertainment content to regulate their moods, some people with strong emotions over an experience or an issue may resort to selecting content to cope with them.

At the same time, our study establishes that the emotional direction and intensity, not cognitions, determine the information participants will seek. And this is contrary to mainstream democratic theories of citizenship, where the predominance of rationality -cognitive processes of thinking and reflection (Prinz, 2004) is expected over emotions in discussion and deliberation on public issues and policy. Robert Dahl (1989) stresses that, for democratic societies to work, "people must be enlightened, at least to some degree. And because advocates of democracy have invariably recognized this and placed great stress on the means to an informed and enlightened demos, such as education and public discussion, the objection [that democracy is not related to enlightenment] is also historically false" (p. 111-112). Shen & Edwards (2005) have shown that framing effects depend not only on how they feature the content but also on the resonance of those frames with a person's core values. However, our findings suggest that we may have been overenthusiastic about the role of reason in public life. The state of public debate from the US to India, Brazil to Turkey presents striking evidence of the decisive weight of emotions. Our work proposes that emotions and cognitions constitute the raw materials from which individual frames are built and then used to seek information. Nevertheless, we need further studies that focus on the interplay between emotions and cognitions and the conditions, other than emotional intensity, that may privilege the dominance of one or the other.

Fourth, in terms of the direction of the effects. Some classic framing studies in communication have proposed that media frames might significantly affect how people perceive, interpret, and draw inferences from them (Iyengar, 1991). Later, other studies suggested that frames' effects on opinions and

attitudes depended on the characteristics and qualities of the frames themselves (Chong & Druckman, 2007). D'Angelo (2002) distinguished four empirical research goals in framing studies:

"a) to identify thematic units called frames; b) to investigate the antecedent conditions that produce frames; c) to examine how news frames activate and interact with an individual's prior knowledge to affect interpretations, recall of information, decision-making, and evaluations, and d) to examine how news frames shape social-level processes such as public opinion and policy issue debates" (p. 873).

Our work runs along an additional line: identifying how individual frames affect content selection. Here, our findings do not only coincide with studies underlying the active role of individuals in processing media frames (Brewer, 2001) but also with those stating that emotional reactions affect content selection (Aarøe, 2011; Nabi, 2003). Indeed, we need more comprehensive approaches to the complex interplay between individual and media frames without falling into the dilemma of what came first: the chicken or the egg. Here, it would be especially relevant to incorporate the role of emotions in this process to understand better under which circumstances they might work as independent, intervenient, or dependent variables.

Fifth, about the relevance of the source. Lodge & Taber (2000) have shown a confirmation bias in selecting information when individuals can anticipate the valence of such information, providing evidence for motivated reasoning. Here, we propose that emotional intensity –which may spark motivated reasoning– arises not necessarily from the frames of the issues at stake but from the source publicizing them. Druckman (2001) shows that media frames have more potent effects when conveyed by credible sources. We show here that the effect may not be based on the source's credibility but on the *emotional arousal* it provokes. This is most relevant at a time when media coverage of public issues increasingly centers around personalities and individual political figures.

Sixth, we tried to assess the role of discrete emotions through three continuums; however, we found that all three were strongly associated –thus, we created an Emotional Intensity Index (EII)–, and that the relation between intensity and the two dependent variables was stronger when testing the EII than when testing each continuum alone. This brings back discussions about whether we can understand emotions better along a continuum that varies from "negative" to "positive" emotional experiences aroused by specific situations, events, or persons or if it is better to focus on specific (discrete) emotions. Perhaps we fall into the limits of a self-reported method that, at best, could grasp the emotional direction

of the expressed emotional arousal. Though the three continuums were built upon critical feelings towards political leadership (and its opposites), we do not have enough data to demonstrate the decisive effect of each emotion alone. However, their connection is evident (perhaps because, for respondents, what matters is the negative/positive tendency), and what we do prove is the apparent effect of the emotional intensity and direction through the EII, which results in a dimensional approach to emotions.

Finally, limited to this study, the effect of negative emotional intensity is far stronger than that of positive emotional intensity. Here, though we tested positive and negative emotions, the negative ones represent more substantial incentives to shape certain actions, at least regarding the information on public life. We need more research on these matters, but social psychologists present exciting explanations. Baumeister et al. (2001) show how bad experiences and destructive emotions have stronger influences than good ones; moreover, they seem quicker to form and more resistant to disconfirmation. In this regard, Nass (2010) explains how we tend to process negative than positive information more thoroughly. In the case of public actors talking about public issues, the strength of negativity may also respond to a general "media frame" that has not been considered in this research and to the image of political actors themselves. If it is true, as many surveys show that, in general, trust in politicians and parties has decreased in the last decades and that media coverage tends to frame politics negatively, one might assume a negative cultivation effect (like the one regarding violence, as Cultivation Theory suggests). We need to understand better the possible cultivation process that mostly sparks negative emotional predispositions towards certain public actors and issues. In times of political polarization, communication research could focus on emotions that may contribute to solidarity, responsibility, and social cohesion, like the so-called positive moral emotions (Haidt, 2003; De Sousa, 2001). Of course, it is not a simple task, but it is undoubtedly one in which we may preserve our fragile open society.

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#### Data availability

The article's data will be shared upon reasonable request to the corresponding author.

## **Appendix 1: Questionnaire**

*Note: The questionnaire was presented in Spanish to the participants. Here is our translated version of its sections.* 

## **Section 1: Demographics**

Q 1.1 GENDER.

- [0] Female
- [1] Male
- [2] Non-binary
- [3] I prefer not to say

## Q 1.2 How old are you?

[] Years old

## Q 1.3 Enrolled in:

- [0] Bachelor's degree
- [1] Graduate degree
- Q 1.4 In which semester are you enrolled?
  - [] Bachelor's degree
  - [] Graduate degree
- Q 1.5 What is your university?
  - [0] Public
  - [1] Private

## Section 2: liberal or communitarian?

The nine questions in this section are taken from the national study on the values of Mexicans organized by Nexos magazine with the collaboration of the agencies GAUS and LEXIA (Escalante, 2011; Robles & Salmón, 2018).

Q 2: Which statement do you agree with the most?

Q 2.1.1 [0] Citizens owe Mexico a debt

Q 2.1.2 [1] Mexico owes a debt to its citizens

Q 2.2.1 [0] I agree that my tuition should help pay for the education of more disadvantaged people.

Q 2.2.2 [1] I disagree that my tuition should help pay for the education of more disadvantaged people.

Q 2.3.1 [0] Opportunities in life depend on the context.

Q 2.3.2 [1] Opportunities in life depend on your own.

Q 2.4.1 [0] To have a better life depends on the efforts of all.

Q 2.4.2 [1] To have a better life depends on my efforts.

Q 2.5.1 [0] I prefer to do something that benefits many, even if not so much myself.

Q 2.5.2 [2] I prefer to do something that benefits me greatly, even if it doesn't help anyone else.

Q 2.6.1 [0] The community's welfare must come before anything else.

Q 2.6.2 [1] Individual freedom must come before anything else.

Q 2.7.1 [0] As things are now, Mexicans have dreams in common.

Q 2.7.2 [1] As things are now, Mexicans have only individual dreams.

Q 2.8.1 [0] I prefer to pay more taxes if it will reduce poverty.

Q 2.8.2 [1] I prefer to pay fewer taxes even if poverty does not decrease.

Q 2.9.1 [0] I prefer a society with more justice.

Q 2.9.2 [1] I prefer a society with more freedom.

#### Section 3: Emotional Intensity raised by AMLO

Q 3 When you hear about President Andrés Manuel López Obrador (AMLO), what feeling does it provoke in you, and with what intensity?

Q 3.1 [1] Strongest anxiety; [2] Anxiety; [3] Some anxiety; [4] Neither anxiety nor confidence; [5] Some confidence; [6] Confidence; [7] Strongest confidence

Q 3.2 [1] Strongest indignation; [2] Indignation; [3] Some indignation; [4] Neither indignation nor satisfaction; [5] Some satisfaction; [6] Satisfaction; [7] Strongest satisfaction.

Q 3.3 [1] Strongest antipathy; [2] Antipathy; [3] Some antipathy; [4] Neither antipathy nor appreciation; [5] Some appreciation; [6] Appreciation; [7] Strongest appreciation.

#### Section 4: Information-seeking (Negative-Positive feelings & liberal-communitarian values)

Q 4.1. From which of the following topics on media and freedom of speech would you seek further information (choose only one option)? [Test: Anxiety-Confidence feelings & liberal-Communitarian values]

[1] President AMLO's policy decisions put the creation of employment for urban-educated middle-class sectors at risk.

[2] There is a risk that by the end of AMLO's administration, the public debt may endanger future growth perspectives for the country.

[3] AMLOS's government announced that students with higher GPAs would be eligible for selected scholarships in national postgraduate programs.

[4] AMLO's government announced that women in poorer communities would receive increased social welfare assistance.

[5] Successful Mexican filmmaker Guillermo Del Toro will direct a new version of Pinocchio on Netflix.

[6] The film "Roma" by Alfonso Cuarón opened the debate to discuss the situation of housekeeping workers.

Q 4.2. From which of the following topics on security and crime would you seek further information (choose only one option)? [Test: Anxiety-Confidence feelings & liberal-Communitarian values]

[1] Under President AMLO's administration, organized crime in certain cities generates unseen difficulties for small and medium-sized businesses.

[2] Under AMLO's government, social welfare programs are reaching only 35% of the poorest households, while in previous governments, that percentage reached almost 50%.

[3] Kidnapping in Mexico City dropped 38% among middle-class sectors under President AMLO.

[4] President AMLO declared that the federal government expenditure cuts are a measure to counteract corruption.

[5] Google will strengthen measures to protect the privacy of users.

[6] Mexican filmmakers in the last years have served as goodwill promoters of Mexican culture worldwide.

Q 4.3. From which of the following topics on education and training would you seek further information (choose only one option)? [Test: indignation-satisfaction feelings; liberal-communitarian values].

[1] While President AMLO criticizes those public servants who studied abroad and his government announced cuts in scholarships for students who want to study abroad, some of his closest collaborators studied abroad. Some have their sons and daughters studying abroad with public scholarships.

[2] It is highly probable that the former governor from Veracruz state, Javier Duarte, who is accused of corruption and unexplainable richness, will not be prosecuted appropriately, and be released by the end of AMLO's government without having to refund the public treasure.

[3] The good news is that this government will have no new taxes, said President AMLO.

[4] One of the remarkable deeds under President AMLO's administration is that a full and indepth investigation has been done regarding the massacre of the 43 students of the Ayotzinapa rural college.

[5] Car insurance agencies have lowered the fees for young drivers in case of car theft and are competing to offer these customers better conditions in a rapidly growing market.

[6] The new digital tools can favor media literacy and better forms of education in Mexican society.

Q 4.4. From which of the following topics on health and social security would you seek further information (choose only one option)? [Test: indignation-satisfaction feelings; liberal-communitarian values].

[1] Despite President AMLO's promises, some analysts affirm that the recent budgetary cuts in public health will leave the youngsters unattended since the focus will concentrate on the children and the elderly.

[2] Civil organizations say that the cancellation of public funds to private nursery schools announced by President AMLO has deeply affected working families, especially those headed by single mothers.

[3] President AMLO's program "Youth Building Future" has meant that more than 200 private firms provide training to youngsters who are presently neither working nor studying and who receive from the government a monthly grant of 3,600 Pesos (US\$ 185) for them to incorporate eventually into the labor market.

[4] The Education reform that President AMLO is promoting will secure a better and more transparent process to incorporate better teachers into the educational system.

[5] The cost of private college education in Mexico has increased almost 350% in the last seven years.

[6] According to the PISA test results, Mexico has scored below OECD countries in science and reading skills, and no improvement has been noticed in recent years.

Q 4.5. From which of the following topics on inequality and justice would you seek further information (choose only one option)? [Test: Antipathy-Appreciation feelings; liberal-communitarian values].

[1] For many analysts, President AMLO should be more respectful of the freedom of expression voiced through newspapers' critical positions.

[2] For some analysts, President AMLO's promise to distribute free medication in the poorest regions is not working effectively, not only because there is no proper distribution strategy but because the president has no genuine interest in it.

[3] In Mexico City, property taxes have remained constant due to President AMLO's promise that he would not propose a raise in taxes at the beginning of his administration.

[4] President AMLO declared he would establish a national Basic Food Basket to be acquired by everyone due to publicly subsidized price guarantees.

[5] In 2021 young educated people entering the labor markets earned 30% less in real terms than their peers ten years ago, and this loss in net loss is more significant in the case of females.

[6] According to official figures, young people entering the labor market will have a heavier burden to sustain the pension system simply because the population in Mexico is aging.

Q 4.6. From which of the following topics on immigration would you seek further information (choose only one option)? [Test: Antipathy-Appreciation feelings; liberal-communitarian values].

[1] Despite his promises, President AMLO has not been clear on topics like same-gender marriage, the right to choose, and feminism.

[2] For some economic analysts, the programs of President AMLO to directly distribute subsidies to different sectors of the population not only would be ineffective in ending inequalities but also would be costly to the public budget, implying a fiscal burden that eventually could provoke a crisis.

[3] President AMLO said Central American immigrants would be granted humanitarian visas valid for one year with which they could legally seek jobs.

[4] President AMLO said his long-term strategy in the south is to create development corridors along with Central American countries to improve the conditions of life and make immigration an option, not a matter of need.

[5] In the last decade, organized criminal groups have abused and even recruited immigrants entering the Mexican south border and crossing the territory on their trip to the north. This situation has been qualified as a severe humanitarian tragedy and a grave violation of their rights.

[6] According to a regional survey, almost 5 out of 10 individuals born in poverty will remain in such a condition in Latin America.