Persuasion Knowledge: A Cognitive Resource against Anti-Smoking Persuasion

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Abstract. The purpose of the paper is to explain resistance to anti-smoking persuasion by integrating persuasion knowledge as a cognitive resource that likely affects persuasive message efficiency. A research model was designed including an anti-smoking persuasive message, persuasion knowledge, coping self-efficacy and attitude certainty as predictors of resistance to anti-smoking persuasion. A survey was conducted on a convenience sample of 617 Tunisian smokers. The sample was divided into two subgroups: the first one was exposed to a high negative anti-smoking print ad; the second was exposed a low negative anti-smoking print ad. The constructs were measured on a 5 points' Likert scales and were one-dimensional except for the resistance to persuasion scale that contained 3 attitudinal dimensions: cognitive, affective and behavioral. To assess the research model, the Partial Least Square (PLS) method was used. According to the findings, the print ads weren't effective in activating persuasion knowledge. Nevertheless, persuasion knowledge was high and positively correlated with the cognitive and the behavioral component of resistance to the anti-smoking persuasion when channeled through attitude certainty.

1 Introduction

In light of the economic and social developments, several countries worldwide increasingly suffer from smoking problems and their harmful effects on individuals and communities. Unfortunately, despite increasing efforts undertaken by both governmental and non-governmental social organizations against smoking, the abandonment of this harmful behavior seems to be a tough task in a country in an epidemiological transition like Tunisia. Indeed, the World Health Organization (WHO) emphasizes that, despite the decrease of smoking rate in Tunisia of 3.5% at 2010, this rate still high. This phenomenon becomes increasingly worrying for the Tunisian society and attracts social researchers and practitioners attention. As a reaction, relevant social institutions focused attention on raising smokers' awareness as an attempt to overcome these damages. A case in point is anti-smoking persuasive communication campaigns. These campaigns reach their planned goals only in some cases, but in most cases they are often met with resistance to persuasion. At this stage, it seems interesting to investigate the reasons why smokers resist to persuasive campaigns undertaken by the public health services. To come to grips with this, understanding theoretically and empirically the resistance process is importantly required. Such an understanding should not neglect its psychological aspects, particularly the cognitive patterns. In fact, cognitive mechanisms may greatly influence the persuasion (vs resistance) process by biasing information processing and judgments (Wood, 1982). In this perspective, the cognitive aspect refers to the acquired knowledge. In the context of persuasion, Friestad and Wright (1994) were the pioneers to evoke persuasion knowledge and its importance in resistance to persuasion process. This importance was afterward confirmed by several studies which considered knowledge as a defensive cognitive resource that leads to resistance to persuasion (Kirmani and Zhu, 2007; Robertson, 2001; Friestad and Wright, 1999; 1995).The purpose of this paper is to explain resistance to persuasion in terms of persuasion knowledge.

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2 Persuasion knowledge as a fundamental cognitive component of the resistance to persuasion process

Persuasion knowledge owes its roots to social cognitive theory (Bandura, 1989) and theory of mind (McAlister, 2009). These theories suggest that knowledge is developed through social interactions with friends, family and media. More particularly, individuals accumulate persuasion knowledge through familiarity, expertise and previous experiences (Kerstetter and Cho, 2004). These patterns allow persuasion knowledge to play a leading role in the coping process (Robertson, 2001), which is one form of resistance to persuasion (Henrie and Taylor, 2009). In fact, persuasion knowledge is considered as a thoughtful interpretative system of persuasion, motives and marketers tactics that lets the individual evaluate and resist persuasive attempts (Henrie and Taylor, 2009; Kirmani and Zhu, 2007). Its greater importance is obvious through its influence on attitudes and behaviors (Fabrigar et *al.*, 2006) and its complex functioning as a schema-triggering mechanism and inferences (Kirmani and Zhu, 2007). These inferences allow people to process new information on the basis of the information categories already structured in memory (Roy and Cornwell, 2004) and to analyze it in an analogical way (Mayer, 1998). Also, persuasion knowledge lets people recognize, analyze, interpret, estimate, remember former persuasive attempts, and select and execute the suited responsive tactics (Robertson, 2001). In this regard, some researchers (Cavallo and Iannaccone, 1992; Okechuku, 1992) insist that when an individual is exposed to persuasive messages, he/she seems more capable of forming associations between new and stored information. Accordingly, the individual, who has always intuitive capacities through plans and mental maps, integrates new information to enrich it, to adjust it and to strengthen his/her preexisting knowledge (Cavallo and Iannaccone, 1992).

The literature overview allowed us to formulate the following hypothesis in the context of anti-smoking persuasion:

H1: *Theanti-smoking message positively affects the activation of the smoker's persuasion knowledge.*

Persuasion knowledge is an important cognitive resource allowing individuals to develop other psychological patterns that seem fundamental for the resistance process, such as, coping self-efficacy and attitude strength.

2.1 Persuasion knowledge: a source of coping self-efficacy

Self-efficacy is a construct derived from the theory of social cognition and is often conceptualized as a personal subjective evaluation of the individual's capacities and trust in his/her own abilities to succeed in a particular task or to reach desired results (Mayer, 1998; Bandura, 1989). More particularly, self-efficacy refers to beliefs about capacities to mobilize motivations, cognitive resources and actions required to deal with a particular situation (Wood and Bandura, 1989, in Gist and Mitchell, 1992). Furthermore, it is admitted that a strong self-efficacy emanates from the acquired self-regulating resources of beliefs and behaviors (Bandura, 1989). Therefore, persuasion knowledge can be considered as one of these cognitively - based self-regulating resources (Friestad and Wright, 1999). This idea was enhanced by several researchers who considered knowledge as power (Taut and Brauns, 2003) and as one of the fundamental mechanisms of resistance to persuasion. Knowles and Linn (2004) argue that persuasion knowledge increases resistance by arming individuals with the necessary cognitive resources. These resources let people develop metacognitive abilities (Tormala et *al.*, 2006) allowing them to be self-confident (Barden and Petty, 2008), to be vigilant, to be intelligent, to form intuitions and expectations (Coutinho and Sagarin, 2006) and to evaluate

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and avoid abilities relevant to cognitive, behavioral and mechanical actions (Speck and Elliot, 1997). These metacognitive abilities reflect a cognitive and a behavioral control task (Tormala et *al.*, 2006; Tormala and Petty, 2002), which is a major indicator of self-efficacy, as well as, a major predictor of resistance to persuasion (Burkley, 2008). In this respect, Gist and Mitchell (1992) suggest that self-efficacy is a dynamic construct that changes with learning progress, knowledge development and experience acquisitions.

Applied to the smoking context, the following hypotheses can be formulated:

H2: *Smoker'shighpersuasion knowledge positively affects perceived coping self-efficacy towards an anti-smoking message.*

H3: *Smoker'shighperceivedcoping self-efficacy positively affects resistance to an anti-smoking message.*

2.2 Persuasion knowledge: strong resistance-based attitudes

Persuasion knowledge plays a leading role in the resistance process through its relationship with one of the attitude features, which is attitude strength. This construct can be defined as the extent to which an attitude is stable, persistent and resistant to change (Miller and Peterson, 2004). It is generally admitted that persuasion knowledge strengthens attitudes by making them more resistant to persuasion. In this regard, a research (Wood, 1982) argues that attitudes tend to be stronger when they are based on a set of information, knowledge and beliefs. Yet, persuasion knowledge often admits valuable implications in terms of the information processing paradigm (McAlister, 2009; Roy and Cornwell, 2004). In this respect, several researchers (Barden and Petty, 2008; Blankenship et *al.*, 2008; Friestad and Wright, 1999; 1995) confirmed that the retained knowledge lets people process the message in an analytic way, which produces durable, stable and resistant attitudes. Hence, Putrevu et *al.* (2004) assert that

knowledgeable (vs non knowledgeable) people visualize better complex images, sophistically process technical information and form more logical connections between prior knowledge and new information. This allows them to develop coherent cognitive structures (Okechuku, 1992), making them more certain and more self-confident (Barden and Petty, 2008; Tormala and Petty, 2004), and to build strong defensive mechanisms (Clarkson et *al.*, 2009). Attitude strength includes several components like knowledge, trust, experience, importance, accessibility, ambivalence and certainty (Miller and Peterson, 2004). In view of some limitations related to empirically measuring attitude strength as a multidimensional concept, it seems reasonable and worthy to study it as one single construct. Researchers (Clarkson et *al.*, 2009; Smith et *al.*, 2008) highlight, in this respect, that attitude certainty is a relevant dimension that may be the best to represent attitude strength along other dimensions. Attitude certainty refers to the conviction with which individuals hold their attitudes, or how correct they believe their attitudes are (Gross et *al.*, 1995, in Barden and Petty, 2008). Attitude certainty has been the subject of considerable attention in the attitudes and persuasion literature (Petrocelli et *al.*, 2007). Accordingly, several researches pointed out that attitude certainty is derived from the individual's prior knowledge and leads to a great resistance to persuasion (Clarkson et *al.*, 2009). In other words, individuals who are certain about their attitudes are better able to resist persuasion because they have greater informational resources to use when they counterargue persuasive messages (Smith et *al.*, 2008). According to this line of thinking, we formulated the following hypotheses in a smoking addiction context:

H4: *Smoker's high persuasion knowledge positively affects attitude certainty towards an anti-smoking message.*

H5: *Smoker's high attitude certainty towards an anti-smoking message positively affects resistance to persuasion*

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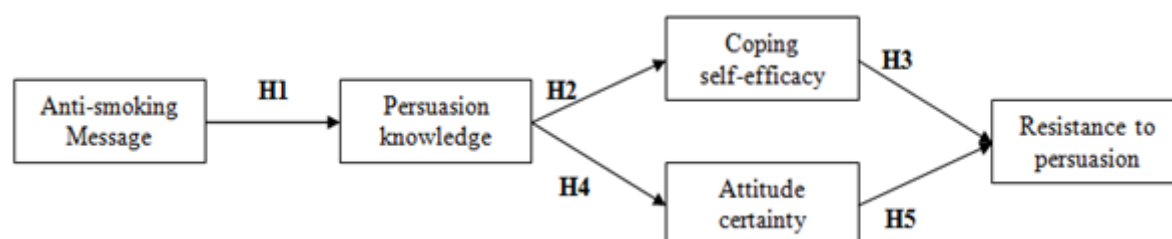The suggested hypotheses allowed us to form the following conceptual model:

Figure 1. The resistance to persuasion process

3 The study design

To empirically check our theoretical framework, we firstly selected the constructs measures, and then, we conceived the data collection procedures.

3.1 Measures

The measurement scales were selected on the basis of their suitability to the study context and their empirically proved good psychometric qualities. In fact, to measure resistance to persuasion, the one dimensional attitude scale of Brinôl et *al.* (2004) composed of 16 items was used. Then, to assess persuasion knowledge, we considered interesting to use the one-dimensional scale of Bearden et *al.* (2001) including 6 items. Moreover, to measure coping self-efficacy, we selected Chen et *al.*'s (2001) New General Self-Efficacy Scale (NGSES) which is a one-dimensional scale composed of 8 items. Finally, to measure attitude certainty, we used the one dimensional scale of Smith et *al.* (2008) composed of 2 items.

At this stage, we proceeded by piloting the selected scales on a convenience sample of 130 smokers to check their factorial structures and their reliability. The scales purification (except for the attitude certainty scale composed of only 2 items) allowed us to eliminate 3 items from the resistance to persuasion scale because of their low fit quality. The exploratory analysis provides acceptable levels of KMO (> 0.6) and satisfactory Bartlett sphericity indicators (Chi-square > 0, p=0,000). All the scales, as predicted by the literature, are one-dimensional (except for the resistance to persuasion scale which includes 3 factors) and have acceptable levels of reliability ($\alpha > 0.7$).

3.2 The stimulus selection and pre-test

To conduct the experiment, two print ads were deployed with two different levels of negative emotional intensity (high vs. low). The print ads have been previously used in an anti-smoking context and their relevance has already been verified (Gallopel-Morvan et al, 2010; Gallopel, 2005). The first ad, based on a high negative emotional appeal, contains two real images estimated as highly frightening. The second ad, based on a low negative emotional appeal, contains two other real images assumed to be slightly frightening. For each image, a comment is attached illustrating the probably smoking risks. The selected stimuli were, subsequently, tested to ensure their emotional intensity and if they really evoke negative emotions among smokers. For this purpose, the differential emotions scale of Izard (1977) has been used. Only three items belonging to the fear dimension were used to measure the scary nature of the two ads. This restriction of measuring a single negative emotion is based on a conceptual consideration according to which the anti-smoking persuasive message uses often fear appeals.

An experiment was then conducted on a convenience sample of 130 smokers (the same sample of the measurement scales stage), with 65 responses for each ad in two cafes. Each participant was asked to see one of the two ads, and then, answer a questionnaire. An ANOVA

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(One-Way ANOVA) was performed thereafter, to evaluate the differential effect of the two ads on smokers. The findings showed that the two ads actually evoke two different levels of fear with satisfactory and significant value of F inter-group [*F (1, 128) = 19,649, p = 0.000*]. Moreover, the findings show two different scores between the individual responses to the fear items (high: M = 3.99, low: M = 1.89). The items have, thus, a good internal consistency for the print ads (high: α = 0.850; low: α = 0.798).

3.3 Data collection

To collect data, a first group of smokers was shown the first anti-smoking print ad with high negative emotional intensity. The poster was shown to participants for about 2 minutes to let them process the message in an elaborative manner and think about its content. Then, they were requested to respond to the attached questionnaire. Yet, we invited a second control group of smokers to watch the second print ad with low negative emotional intensity, and then, to respond to the questionnaire. The survey was conducted face to face at two cafés. To control the influence of the respondents' companions, we invited participants to watch the print ads and respond to the joined questionnaire in a separated manner. The experiment and the survey were done face to face in two cafes. This way of proceeding allowed us to build a sample of 320 smokers for the first group and 297 smokers for the second group. The total sample was composed of 79% males and 21% females. Most participants were single (71%) and students (67%) with different educational levels. Although the sample seems to be homogeneous and composed chiefly of students, it was randomly built without any related criteria.

4 Analysis and results

To test our suggested model, we performed an exploratory factor analysis (EFA), using SPSS.18, to check the scales psychometric qualities. Then, we conducted a confirmatory factor analysis (CFA) using a structural equation modelling method. More particularly, we used the Partial Least Squares (PLS) method and XLSTAT-PLS to analyse the data. PLS Method provides relatively unbiased estimations and follows no distributional assumptions (Thies and Albers, 2010). We applied, then, a bootstrap re-sampling procedure with 500 iterations to guarantee more stability of the estimates.

4.1 The exploratory factor analysis

An exploratory factor analysis (EFA) is performed. This analysis allowed us eliminate some items because of their low loading scores (3 items from the resistance to persuasion scale, 2 items from the persuasion knowledge scale and 1 item from the self-efficacy scale). This purification stage showed satisfying and consistent results with previous researches. The KMO indicator was acceptable for all the scales (>0.6) and the Bartlett sphericity indicators were also satisfactory (Chi-square > 0, p=0.000). Furthermore, the persuasion knowledge scale seems to be one-dimensional as predicted by Bearden et *al.* (2001), with a satisfying explained variance threshold (66.562 %). Similarly, the self-efficacy scale is one-dimensional consistent with Chen et *al.*'s (2001) work, explaining 69.668 % of the total variance. Yet, the attitude certainty measure shows already one single dimension that explains 80.564 % of the total variance. Finally, in contrast to Brinôl et *al.*'s (2004) work which advocated the one-dimensionality of the resistance to persuasion scale, the empirical data depicts 3 factors that explain 65.700 % of the total variance. Accordingly, we notice that the resistance scale items admit three sense orientations: the first one is cognitive (exp: *My own beliefs are very clear*); the second one is affective (exp: *After forming an impression of something, it's often hard for me to modify that impression*) and the third one is behavioural (exp: *If it is necessary I can easily alter my habits*). Therefore, we estimated logical to consider the three obtained factors as the cognitive, the affective and the behavioural components of a resistant attitude. In this

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respect, we divided H3 respectively in to H3a, H3b and H3c, and H5 in to H5a, H5b and H5c.

4.2 The measurement models assessment

The measurement model in a PLS analysis is evaluated by examining internal composite reliability (ICR), convergent and discriminate validities (Chin 1998).

4.2.1 Scales reliability
To assess the scales reliability, we performed a factorial analysis which showed a clear separation of items along construct lines with *Eigenvalues* greater than 1. Moreover, reliability was evaluated by assessing the items

internal consistency representing each factor using Cronbach's alpha. For each extracted dimension, Chronbach's coefficient alpha was > 0.7 which reflects good reliability levels as recommended by Nunnally and Bernstein (1994). Nevertheless, the Cronbach's alpha level is quiet low for the resistance behavioural component (0.691 < 0.7), yet it remains very close to the acceptable threshold, which allows us to retain it. Yet, the findings show that all the D.G. rho (PCA) levels are satisfying, except for the resistance behavioural component which shows a D.G. rho value that is relatively close to the required threshold (0.657 < 0.7). All the results are shown in details in table 1.

Table 1. The scales composite reliability

Latent variable		Items	Cronbach's Alpha	D.G. rho (PCA)	Condition number	Critical Value	Eigenvalues
Persuasion knowledge		4	0.811	0.935	5.367	0.983	**3.656**
Coping self-efficacy		7	0.862	0.906	7.521	0.928	**3.983**
Attitude certainty		2	0.847	0.824	2.126	0.689	**1.128**
Resistance to persuasion	Cognitive component	6	0.853	0.752	1.241	1.439	**1.745**
	Affective component	2	0.766	0.723	1.421	1.834	**2.507**
	Behavioural component	2	0.691	0.657	2.227	1.877	**3.535**

4.2.2 Convergent validity
Convergent validity is assessed primarily by the factor loadings through which we evaluated the factorial contribution of each item to the latent variable. With the bootstrap re-sampling procedure (500 iterations), all the dimensions show high loadings within each factor which indicates good convergent validities. Secondly, we assessed convergent validity through the the Average Variance Extracted (AVE). PLS analysis (Table 2) shows acceptable levels of AVE (> 0.5) for each factor which also indicates a good convergent validity. Thirdly, the analysis allowed us to assess the obtained

explained variance (R^2 and R^2_{adj}) in order to determine whether a theoretically exogenous construct is operationalized appropriately (Thies and Albers, 2010). In this respect, the analysis (Table 2) provides relatively moderate levels of R^2 for all the inner models in terms of Chin (1998) considerations. For R^2_{adj} the inner models show also relatively moderate thresholds. Finally, the findings show (Table 2) significant levels of D.G. rho of the confirmatory analysis for all the inner models (> 0.7), which indicates an acceptable convergent validity.

Table 2. The inner models assessment

Latent variable	Type	R^2	Adjusted R^2	S.E	Mean Communalities (AVE)	Mean Redundancies	D.G. rho
Persuasion knowledge	Endogenous	0.251	0.209	0.022	0.601	0.132	0.956
Coping self-efficacy	Endogenous	0.317	0.317	0.037	0.665	0.262	0.924
Attitude certainty	Endogenous	0.279	0.278	0.014	0.602	0.156	0.831
Cognitive component	Endogenous	0.324	0.267	0.029	0.584	0.016	0.761
Affective component	Endogenous	0.268	0.224	0.016	0.542	0.101	0.745
Behavioural component	Endogenous	0.295	0.294	0.024	0.721	0.171	0.711
Mean		0.281			0.619	0.139	

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Table 3. The discriminant validity assessment

	Mean Communalities (AVE)	Persuasion knowledge	Coping self-efficacy	Attitude certainty	Cognitive component	Affective component	Behavioural component
Persuasion knowledge	0.601	**0.775 ***					
Coping self-efficacy	0.665	0.286	**0.815 ***				
Attitude certainty	0.602	0.231	0.021	**0.776 ***			
Cognitive component	0.584	0.071	0.018	0.207	**0.764 ***		
Affective component	0.542	0.063	0.021	0.033	0.102	**0.736 ***	
Behavioural component	0.721	0.055	0.022	0.258	0.207	0.354	**0.849 ***

* Square root of the AVE

4.2.3 Discriminant validity

Discriminant validity is tested based on the Fornell and Larcker (1981) approach. This approach states that the square root of the Average Variance Extracted (AVE) for each construct should exceed the correlation estimate between any couple of constructs. Hence, Fornell and Larcker (1981) point out that it is possible to assess discriminant validity by comparing AVE and the squared correlations between factors that should be less than the AVE value. In this respect, results (Table 3) show, on the one hand, higher levels of AVE square root than the constructs correlations, and on the other hand, higher levels of AVE in respect to the squared correlations between factors, which indicates good discriminant validity between all the factors.

4.3 The structural model assessment

To assess the structural model, the PLS analysis provides the GoF (Goodness-of-Fit) index. This index vary between 0 (model rejection) and 1 (model validation) (Tenenhaus et *al*., 2005). According to the findings (Table 4), we can globally validate our suggested model with a GoF> 0.5. The applied Bootstrap procedure (500 iterations) generated a stable GoF that is also very satisfying. These results confirm the stability of our conceptual model which allows us to retain it.

The structural model assessment helped us check our hypotheses. In this respect, the findings (table 5) show a low correlation (0.264 < 0.5) between the print ad exposure and persuasion knowledge. The path coefficient and the *effect size* are also low, which don't allow us to support **H1**. Hence, there is a significant correlation between persuasion knowledge and coping self-efficacy (0.535 > 0.5). The related path coefficient and effect size are very satisfying. Therefore, **H2** is retained.

In the same perspective, there is no significant correlation between coping self-efficacy and resistance to persuasion through its three cognitive, affective and behavioural dimensions. These results do not support **H3**. Yet, the regression coefficient between persuasion knowledge and attitude certainty is relatively low (0.481 < 0.5), yet it remains very close to the acceptable threshold. Hence, the path coefficient is slightly lower than the required level; nevertheless, we may accept it.

Also, effect size is relatively large (f^2=0.301). Thus, we may support **H4**. Finally, attitude certainty is significantly correlated with the behavioural component of resistance to persuasion (0.508 > 0.5). The path coefficient and *effect size* are satisfying. However, attitude certainty is not highly linked to the cognitive component, but it remains close to the required threshold (0.455 < 0.5) which allows us to retain it. We may also accept the obtained path coefficient value. *Effect size* is generally acceptable (f^2=0.262). Nevertheless, attitude certainty seems unrelated to the affective component (0.181 < 0.5). The path coefficient and *effect size* are also very low. In sum, these findings allow us to partially support **H5**.

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Table 4. Goodness of fit

	GoF	GoF (Bootstrap)	Standard error	Critical ratio (CR)
Absolute	0.469	0.472	0.010	25.727
Relative	0.784	0.762	0.042	16.377
Outer model	0.965	0.942	0.007	129.010
Inner model	0.889	0.871	0.043	16.489

Table 5: The hypothesis verification

Hypothesis			Correlation	Path coefficient	Student T	Pr > |t|	Effect size f^2
H1		Print ad exposure → persuasion knowledge	0.264	0.264	1.802	0.033	0.073
H2		Persuasion knowledge → coping self-efficacy	0.535	0.535	15.474	0.000	0.400
H3	H3a	Coping self-efficacy → cognitive component	0.137	0.137	1.108	0.064	0.091
	H3b	Coping self-efficacy → affective component	0.146	0.146	4.056	0.000	0.028
		Coping self-efficacy → behavioural component	0.147	0.141	3.750	0.000	0.024
	H3c						
H4		Persuasion knowledge → attitude certainty	0.481	0.479	9.754	0.000	0.301
H5	H5a	Attitude certainty → cognitive component	0.455	0.450	12.504	0.000	0.262
		Attitude certainty → affective component	0.181	0.181	4.508	0.000	0.034
	H5b	Attitude certainty → behavioural component	0.508	0.504	14.442	0.000	0.349
	H5c						

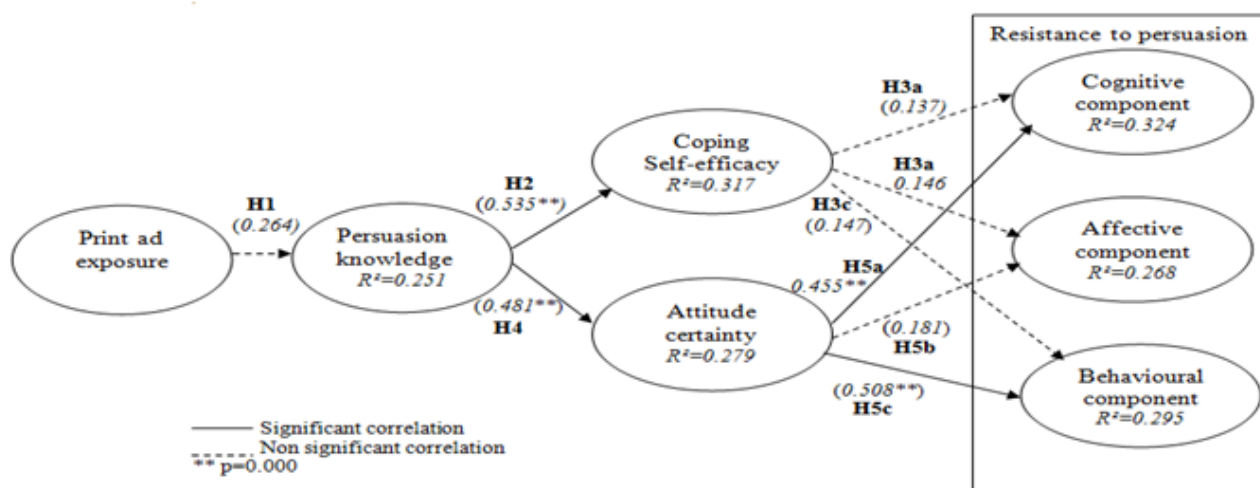The final model can be shown in the figure 2:

Figure 2. The resistance to persuasion mechanism

5 Discussion

The purpose of this paper was to explain the resistance to anti-smoking persuasion. In this respect, we integrated persuasion knowledge as a cognitive resource that likely explain the resistance process by enhancing coping self-efficacy and attitude certainty. The findings support our suggested model in terms of the fit indicators thresholds. Surprisingly, the empirical data did not support **H1**. In this respect, respondents may not find the ad particularly new and original to the extent they may be saw it before and recognize it, thus, it was unable to activate their persuasion knowledge. Hence, despite this disappointing result, it doesn't mean that smoker's persuasion knowledge is low or not activated. Indeed, Friestad and Wright (1999) highlighted that acquiring and sharing a persuasion expertise is

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an ongoing sociocultural process. This suggests that persuasion knowledge is permanently activated and people are vigilant all the time, that's why they don't need to recall stored information or scrutinize the message, thus, they express themselves automatically. Moreover, persuasion knowledge activation occurred through the questionnaire items which carry a message about tobacco. Yet, the significant correlation between persuasion knowledge and coping self-efficacy (**H2**) supports the approach which considers persuasion knowledge as a cognitive resource leading to the enhancement of smokers' self-efficacy and their self-confidence feelings, a conclusion consistent with previous research (Barden and Petty, 2008; Coutinho and Sagarin, 2006; Tormala et *al.*, 2006). In the same perspective, smokers' persuasion knowledge seems to be linked to attitude certainty (**H4**) as expected. This finding is consistent with the literature which insisted that attitude certainty is one of the main components and outcomes of individuals' prior knowledge (Miller and Peterson, 2004). Besides, this finding partially supports **H5.** In fact, attitude certainty seems to be related only to the cognitive (H5a) and the behavioral components (H5c) of resistance to persuasion. This result seems logical if we consider, as previous research did, attitude certainty as a metacognitive dimension (Tormala and Petty, 2004). Moreover, persuasion knowledge is cognitive by default, thus, we can conceive a cognitive causal chain: persuasion knowledge as a cognitive resource (Putrevu et *al.*, 2004), attitude certainty as a metacognitive mediator (Tormala and Petty, 2004) and resistance to persuasion as a cognitive outcome (Burkley, 2008) that likely trigger resistance action (Speck and Elliot, 1997). Finally, the empirical data did not support **H3**. This result is inconsistent with the approach that focuses on the importance of personal efficacy feeling in activating resistance to persuasion (Burkley, 2008; Tormala et *al.*, 2006; Tormala and Petty, 2002). This state of affairs seems to be more or less surprising but may probably be explained by the fact that a

smoker's self-efficacy may be general rather than specific to a persuasion context.

6 Conclusion

The purpose of this paper was to explain resistance to anti-smoking persuasion by using persuasion knowledge as a cognitive resource. The findings supported our suggested model but did not validate the role of the print anti-smoking ad in activating persuasion knowledge. Nevertheless, persuasion knowledge comes out as an important cognitive predictor of resistance to persuasion via smokers' attitude certainty.

This study has managerial implications. In fact, the use of print adswith negative emotional appeals in the Tunisian anti-smoking campaign seems to be inefficient to trigger smokers' persuasion knowledge. This is may be important in smokers' behaviour change especially when print ads are shown to novice smokers (rather than knowledgeable) who may not recognize the ad and can probably be persuadable. Hence, our model depicts resistance to persuasion to be affected only in terms of its cognitive and behavioural aspects. This seems important to the extent that resistance appears as purely cognitive and behavioural if smokers are certain about their attitudes toward smoking. In this sense, Tunisian smokers seems to be self-confident to the extent they are not emotionally affected. For this reason, Tunisian smokers appear as deep thinkers that are hardly persuadable. In this respect, social marketers should use more sophisticated and technical information about smoking danger. Yet, this study confirms the existence of a cognitive causal chain: persuasion knowledge – attitude certainty – cognitive resistance. This cognitive chain suggests that smokers engage in a defensive cognitive process that may refer to a counter-argumentation process or they hold prior strong defensive beliefs toward smoking cessation. This seems extremely important for message designers in order to develop and enhance new stronger message arguments that should be more convincing, more credible and lead smokers to perceive a high personal sensitivity towards smoking hazards. The anti-

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smoking message may be, then, shown by a governmental or by a well-known on-governmental organisation to enhance perceived message credibility.

However, this study is not without limitations. Indeed, positive framing seems to be an interesting persuasive tactic that should be considered. Indeed, positive framing is one of the most important persuasive tactics that can be used in persuasion (Poncin, 2006). Yet, other print ads and other ad formats (TV, radio, Internet, etc) can be used. Indeed, the TV exposure effect, for example, may be different to the print ad effect on smokers' memorisation, knowledge activation and resistance to persuasion. Future research focusing on these patterns may resolve this gap. Also, we built our analysis on a convenience sample. A more representative sample is probably needed to attest for our conclusions.

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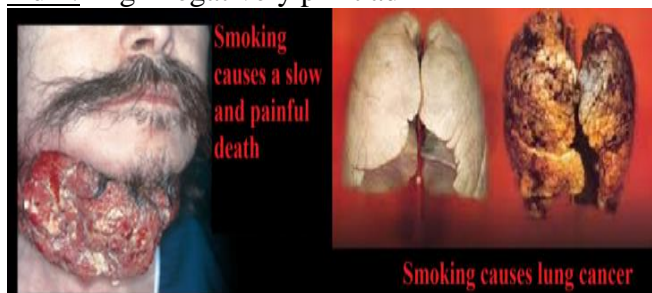
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Appendix 1: The used anti-smoking print ads

Ad 1: High negatively print ad

Ad 2: low negatively print ad

Appendix 2: Scales measurement

- Resistance to Persuasion Scale (Brinol, Rucker, Tormala & Petty, 2004):

1) I am strongly committed to my own beliefs (*eliminated*)
2) My own beliefs are very clear
3) It is hard for me to change my habits
4) I usually do not change what I think after a discussion (*eliminated*)
5) I find my opinions to be changeable
6) After participating in an informal debate, I always have the feeling that I was right
7) It could be said that I am likely to shift my attitudes (*eliminated*)
8) I often vary or alter my views when I discover new information
9) After forming an impression of something, it's often hard for me to modify that impression
10) My ideas are very stable and remain the same over time (*eliminated*)
11) I have never changed the way I see most things (*eliminated*)
12) What I think is usually right (*eliminated*)
13) My opinions fluctuate a lot
14) I often have doubts about the validity of my attitudes
15) If it is necessary I can easily alter my habits
16) I have often changed my opinion

- Persuasion Knowledge Scale (Bearden, Hardesty & Rose, 2001):

1) I know when an offer is 'too good to be true (*eliminated*)
2) I can tell when an offer has strings attached (*eliminated*)
3) I have no trouble understanding the bargaining tactics used by salespersons
4) I know when a marketer is pressuring me to buy
5) I can see through sales gimmicks used to get consumers to buy
6) I can separate fact from fantasy in advertising

- Certainty Scale (Smith, Fabrigar, Macdougall & Wiesenthal, 2008):

1) How certain do you feel about your attitude toward smoking?

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2) How confident you are that your attitude is correct?

- New General Self-Efficacy Scale (Chen, Gully & Eden, 2001)

1) I will be able to achieve most of the goals that I have set for myself
2) When facing difficult tasks, I am certain that I will accomplish them
3) In general, I think that I can obtain outcomes that are important to me
4) I believe I can succeed at most any endeavour to which I set my mind (*eliminated*)
5) I will be able to successfully overcome many challenges
6) I am confident that I can perform effectively on many different tasks
7) Compared to other people, I can do most tasks very well
8) Even when things are tough, I can perform quite well