

Predicting the intention to quit smoking: A comparative study among Spanish and Norwegian students

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Abstract

The purpose of the present study was to explore the role of an extended version of the theory of planned behaviour (TPB) in predicting intentions to quit smoking among Norwegian smoking students (N=211) and Spanish students (N=205). As hypothesised, subjective norm predicted quitting intentions more strongly in Spain (a collectivistic culture) than in Norway (an individualistic culture). Group identity predicted quitting intentions more strongly in Norway than in Spain. Consistent with the predictions the predictive role of self-identity and moral norm did not differ between the countries. Self-identity did not predict intention significantly, while this was the case for moral norm. Thus the study provided evidence of the moderating role of culture in the TPB, and indications of a stronger conflict between smokers and non-smokers in countries with high level of regulatory anti-smoking measures.

Keywords: extended TPB, cultural variation, smoking climate.

Introduction

The theory of planned behaviour (TPB)

The theory of planned behaviour (TPB) (Ajzen, 1991) turns out to be the most popular theory in the prediction of specific behaviours. According to a recent meta-analysis across 185 studies covering a wide range of behavioural domains, the TPB has proved to be successful in accounting for the variance in behavioural intentions

(39%) and subsequent behavioural performance (27%) (Armitage & Conner, 2001). The TPB posits that the most proximal determinant of a particular behaviour is the intention to perform the behaviour, which in turn is assumed to be a function of attitudes, i.e. global evaluations of the particular behaviour, subjective norms, i.e. beliefs about whether significant others think the individual should perform the behaviour or not, and perceived behavioural control, i.e. the perception that the behaviour is within one's control. In addition, PBC is assumed to predict behaviour directly to the extent it reflects actual control.

The applicability of the TPB in terms of accounting for behavioural intentions across *different cultures* has generally been met with success in a number of behavioural domains (e.g. Bagozzi, Wong, Abe, Bergami et al., 2000; Hu & Lanese, 1998; Lugoe & Rise, 1999; Godin et al., 1996; Hanson, 1997; van Hooft, Born & van Flier, 2006; Hagger et al., 2007). Indeed, the cross-cultural generalizability of the TPB has been confirmed in studies using structural equation modelling supporting the use of standard measures across cultures (van Hooft et al., 2006; Hagger et al., 2007). However, the predictive power of extended versions of the TPB model has scarcely been studied in a cross-cultural context (but see Hosking et al., 2009). The TPB seems well suited for the study of intention to quit smoking, while being less able to account for actual quitting (Moan & Rise, 2005; Rise, Kovac, Kraft & Moan, 2008). Furthermore, the addition of a number of predictors to the TPB has been found to increase the amount of explained variance of quitting intention considerably. For example, in one study (Moan & Rise, 2005) R^2 increased from 36% to 45% by adding a set of additional predictors in the TPB

As to *restrictions of smoking*, this century has experienced an increased willingness on the part of health authorities in Western countries to regulate smoking behaviour in various ways, including the running of antismoking campaigns and banning smoking at restaurants. At the time of data collection (2003) Norway was characterised by having instituted considerably more bans on smoking and restrictive measures than Spain (Tobacco control country profiles, 2003). In addition, a new law banning smoking at pubs and restaurants (instituted June 2004) was a heavily discussed public issue at that time. These aspects made the situation surrounding smoking a much more controversial public issue in Norway than in Spain in 2003, which in turn may affect not only the level of the TPB variables but also the predictive power of the TPB, and the relative importance of the predictors, i.e. smoking climate may act as a moderator.

Cultural variation

In terms of cultural variation, empirical evidence suggests that Norway tends to be a more individualistic country than Spain as indicated by the placement of the two countries on Hofstede's index of individualism and the Hofstede/Triandis combined ratings of individualism/collectivism (Allik & Realo, 2004). Furthermore, Rodriguez Mosquera, Manstead, & Fischer (2000) argued that Spain and other Mediterranean societies have been described as "honour cultures" being characterised by having an interdependent self-construal. They observed that Spanish students rated collectivistic values like honour, family related values, social recognition, and social connectedness as more important than individualistic values as compared to students from the Netherlands. Under the assumption that Norwegian students share the same individualistic values as students from The Netherlands, this finding attests to the idea that Norway is a more individualistic county than Spain.

Triandis and coworkers (Triandis & Gelfand, 1998; Triandis & Trafimow, 2001) have identified four defining features relating to the differences between individualistic and collectivistic cultures. First, people in the two types of culture have different construals of the self, others and the interdependence of the two in the sense that the independent self (observed in individualistic cultures) is concerned with self-enhancement, self-assertion and high self-esteem, i.e. people tend to express their unique inner attributes. In contrast, the interdependent self (observed in collectivistic cultures) is mainly concerned with connectedness to others, fitting in, and being a good member of the group. Second, people in individualistic cultures tend to perceive themselves as autonomous giving priority to personal goals, while in collectivistic cultures people tend to perceive themselves as interdependent with their group and give priority to collective goals. Third, social behaviour is primarily determined by personal states (like attitudes) and less by norms in individualistic cultures while the contrary is true in collectivistic cultures. Fourth, relationships are more likely to be governed by cost-benefit calculations in individualistic cultures while communal relationships are more common in collectivistic cultures.

Thus behaviours of individuals in a collectivistic culture should be more strongly guided by considerations of the reactions of others, subjective norms in the TPB, whereas behaviours of individuals in an individualistic culture should primarily be governed by individual determinants, attitudes and perceived behavioural control in the TPB. There is evidence of this idea. For example, Bagozzi, Lee, and van Loo (2001) found that subjective norms generally were stronger predictors of intentions in a bone marrow context in a collectivistic culture (Chinese) than in an individualistic culture (USA) while the reverse was true for attitudes. Along similar lines, Ybarra and

Trafimow (1998) observed that the role of subjective norms depended on whether people activate private or collective self-cognitions, and that subjective norms were a stronger predictor of intentions when the collective self was primed. Other studies have indicated that subjective norms tend to be a stronger predictor of intentions in collectivistic than in individualistic countries (Bagozzi, Wong, Abe & Bergami, 2000).

The TPB and smoking-additional predictors

As noted above, people in the two types of culture have different construals of the self, others and the interdependence of the two (Markus & Kitayama, 1991), and it may thus be relevant to include predictors which pertain to self and identity (see Åstrøm & Rise, 2001). When it comes to smoking, Falomir and Invernizzi (1999) found that a measure of smoker identity predicted intention to quit smoking above the TPB-components in a sample of Spanish adolescents. However, a close inspection of their measure of smoker identity revealed that it was a mixture of identification as a smoker ("to what extent do you feel as a smoker") reflecting an individual level "me"-identification, and identification with the group of smokers ("to what extent do you identify with the group of smokers"?) which reflect "we"-identification at the collective level. According to Thoits and Virshup (1997) there are two forms of social identity tapping into different and distinct aspects of self-understanding, and they are both based on the idea that people make use of the types of people which it is socially possible to be or available large-scale social categories in order to describe themselves. The idea is that a smoker can be psychologically merged with other smokers in two different ways. First, the theoretical idea deriving from identity theory (Stryker, 1980) and role-identity theory (McCall & Simmons, 1978) is that people incorporate the meanings, evaluations and expectations associated with a number of relevant individual level identities based on social roles or socio-demographic characteristics or other types of persons which is socially possible to be (see Thoits and Virshup, 1997), into their self-understanding. This self-identity is transportable to various situations, and people tend to act consistent with the meanings held in the identity standards so as to verify their self-understanding (see Stets & Burke, 2003; Burke, 2004; Stryker, 2008). By this account a smoker self-identifies as a smoker ("me as a smoker"), and thus act from the perspective of a shared understanding of what it means to be a smoker. Consistent with this idea, self-identity (e.g. "I am a smoker") as a predictor of intentions has been shown to add to the prediction of intentions beyond the components of the TPB in a wide range of behavioural areas (Rise, Sheeran & Hukkelberg, 2010). On the other hand, empirical evidence for the predictive power of self-identity in relation to intentions to quit smoking is sparse. For example, in a study on smoking cessation among students (Moan & Rise, 2005) self-identity did not predict intentions to quit smoking above the TPB components.

Summing up, sociological identity theories posit fairly stable and organised self-conceptions which are strongly patterned by the social structure thus linking the self to the wider social structure (Stets & Burke, 2004; Burke, 2004; Stryker, 2008). On the other hand, we-identifications constitute flexible self-conceptions which are created in response to the perceived relationship to the social context in terms of which categories are salient at the moment (see Turner, 1994). This suggests that the activation of strong we-identifications should be more sensitive to the social context surrounding the behaviour in question, for example the extent to which the health authorities restrict smokers' freedom to smoke and the running of anti-smoking campaigns. Since the level of activities on the part of the health authorities was considerably higher in Norway than in Spain at the time of the study, it can be predicted that group identity as a smoker, would predict intentions to a higher extent in Norway than in Spain, while self-identity deriving from a more stable source of self-understanding, should predict behavioural intentions regardless of type of culture.

A third additional predictor of the TPB, which is found to account for variance above the other TPB components in a wide range of behaviours is moral norms conceptualised as personal beliefs about what is right or wrong (see Manstead, 2000). Its predictive power derives from its self-reinforcing capacity in the sense that the standards and sanctions for behaving reside within the self so that people tend to act in ways which are consistent with one's values to maintain a sense of self-worth (Cialdini & Trost, 1998). This suggests that some behaviours are performed to benefit other persons as an expression of one's internal values without considerations of social (subjective norms) and personal consequences (attitudes) (see Schwartz, 1977). By this account, if one is aware that one's behaviour has negative consequences for others while at the same having difficulty for denying responsibility for this behaviour, then personal norm will predict behaviour. Quitting smoking may well constitute a prototypical case of pro-social behaviour in the sense smokers are well aware of and accept the problem with second hand smoke. Thus in the context of the TPB it has been shown that smokers take such considerations into account beyond social and instrumental considerations in various smoking deliberations (Moan & Rise, 2005). Consistent with the contention that moral convictions tend to be universal transcending persons and cultures (Skitka, Bauman & Sargi, 2005), we expect moral norms to predict quitting intentions in both countries.

Summing up the hypotheses:

- (i) personal factors (attitudes and perceived control) predict intentions to quit smoking more strongly in Norwegian smoking students than in Spanish smoking students
- (ii) subjective norms predict quitting intentions more strongly in Norwegian smoking students than Spanish smoking students
- (iii) group identity predicts quitting intentions more strongly in Norwegian smoking students than in Spanish smoking students
- (iv) self-identity and moral norms predict quitting intentions in both samples

Material and Methods

The present study set out to study intentions to quit smoking among daily smoking University students in the context of the TPB in two different countries, Spain and Norway. University students were selected since they are easily available for collection of relevant data, they may have been smoking for some years, and may have some experience with quitting smoking (see Moan & Rise, 2005). A number of studies have applied the TPB when it comes to quitting smoking (see Moan, 2005 for a review), and they have shown that the TPB provides a reasonable good explanation of quitting intentions while being less able to account for actual quitting behaviour (see Rise et al., 2008).

The empirical data of the present study derive from two samples of smoking students at the University of Oslo (Norway, N=211) and the University of Granada (Spain, N=205) in which students who smoked at least one cigarette a day were asked to fill a preformed questionnaire dealing with quitting smoking in the context of the TPB. In Oslo the respondents were approached in places where it was allowed to smoke. The questionnaire took about 15 minutes to fill in and one respondent declined to answer it. The data collection was performed by psychology students as part of their course in social psychology. The respondents were assured that they would remain anonymous throughout the analyses. In Granada daily smoking psychology students were asked to fill in the questionnaire in classes. None of the Spanish students declined to fill in the questionnaire. The fact that the context of filling in the questionnaire differed for the two samples, may have affected the absolute level of the variables, while it is unlikely that the relation between variables are influenced to a great extent, since these tend to be more stable.

Measures

Intention to quit smoking during the next three months constituted the dependent variable in question. It was assessed with the following three items using the stem: "During the next three months—" "I intend to quit smoking"; "I plan to quit smoking", "I expect to quit smoking" using seven-point probability response scales ranging from (1) very unlikely to (7) very likely. The responses to the three items were summed to produce a composite score of behavioural intentions, and divided by three to maintain the original metric. The internal consistency reliabilities were estimated using Cronbach's alphas amounting to .85 for Spanish students and .92 for Norwegian students.

Attitudes were measured using semantic differential scales with the stem "My quitting smoking during the next three months is---" using nine pair of adjectives on a seven-point bipolar (-3 to +3) scale: bad/good, useless/useful, unfavourable/favourable, wrong/right, stupid/wise, unpleasant/pleasant, unsatisfactory/satisfactory, unnecessary/necessary, punishing/rewarding. The nine items were subjected to principal component analysis with varimax rotation. Consistent with previous studies (see Rise et al. 2008) two factors emerged accounting for 65.9% of the variance among the items in Spain and 60.0% in Norway. The five first mentioned items all loaded on the first factor, and the four last items loaded on the second factor. Then the responses to the five items: bad/good, useless/useful, unfavourable/favourable, wrong/right, stupid/wise were added into a composite measure of *cognitive attitude* and divided by five to maintain the original metric. Cronbach's alphas were calculated to .89 in Spain and .77 in Norway. The responses to the four items: unpleasant/pleasant, unsatisfactory/satisfactory, unnecessary/necessary, punishing/rewarding were added into a composite measure of *affective attitude*. Cronbach's alphas were calculated to .79 in Spain and .68 in Norway. The higher the scores of the two scales, the more positive the attitude towards quitting smoking. In further analyses we made a distinction between two attitudinal components, a cognitive and affective, since this has become common practice in recent TPB research.

Subjective norm was assessed with a composite sum-score, derived from three items using the stem "People who are important to me ----"; --- think I should quit smoking during the next three months"; ----want me to quit smoking during the next three months"; ---believe that quitting smoking is a good thing to do". All were measured on seven-point response scales (1) "completely disagree" to (7) "completely agree". Cronbach's alphas were estimated to .82 in Spain and .81 in Norway. The higher the score, the stronger the perceived social pressure to quit smoking.

Perceived behavioural control was assessed with a composite sum-score deriving from the following six items: "during the next three months I am able to quit smoking if I want to do so" (1= very unlikely, 7=very likely); "during the next three months it is likely that I am able to quit smoking" (1= very unlikely, 7=very likely); "for me to quit smoking during the next three months would be (1) "very difficult"—(7) "very easy"; "if I wanted to, I am able to quit smoking during the next three months" (1= quite wrong to 7= quite right); "if you gave it a try during the next three months, how confident would you be to succeed?" (1= "not confident" to 7= "high confidence"); "how much control do you believe to have over your quitting smoking the next three months?" (1= "no control" to (7) "complete control"). A principal component analysis identified only one factor explaining 78.8% of the variance among the items in Spain and 71.1% in Norway. Cronbach's alphas were .95 in Spain and .91 in Norway. The higher the score, the stronger the perceived control over quitting smoking.

Self-identity as a smoker was measured with a composite sum-score derived from the following three items: "I think of myself as a person who smokes"; "I am a good example of a person who smokes"; "I primarily think of myself as a non-smoker" (reversed) using a seven-point response scale (1= completely disagree to 7= completely agree). Cronbach's alphas were .64 in Spain and .70 in Norway. The higher the score, the stronger the self-identifications as smokers.

Group identity was assessed with a composite sum-score deriving from the responses to two items: "I dislike belonging to the group of smokers" and "I would rather like to belong to the group of non-smokers" using a seven-point response scale (1=completely disagree to 7=completely agree). Cronbach's alphas were .64 in Norway and .66 in Spain. The higher the score, the weaker the self-identifications with the group of smokers.

The direct measures of the extended TPB were taken from published studies (Moan and Rise, 2005; Rise et al., 2008).

Equivalence of measures across countries

The measures which were applied in the present study have been developed in countries with a strong flavour of individualism. Thus it has been pointed out that it is critical to assess whether the measures convey similar meaning across different cultures, and it has been recommended that the measures should be tested for differences in reliability and structural equivalence (cf. Borgères, van den Bergh, and Hox, 2001). Consistent with this, differences in reliability (Cronbach's alpha) for the

two samples were tested for all the scales by means of the program Alfatest (Hox, 1991). In table 1 it can be seen that there were statistically significant differences in reliability between the Norwegian and Spanish samples for the measures of intention, PBC, and affective attitudes. On the other hand, the alpha levels for these three measures were high in both samples, and well above the usual requirement of $>.70$ (Nunnally, 1978). Finally, as noted in the introduction analyses using Structural Equation Modeling (SEM) have confirmed the cross-cultural generalizability thus supporting the structural equivalence of the of the TPB measures (van Hooft et al., 2006 and Hagger et al., 2007).

Results

Descriptive statistics for the Spanish and Norwegian samples are provided in table 1.

Table 1 Differences in reliability coefficients (Cronbach's alpha) between the scales used in the Norwegian and Spanish sample.

	Alpha (Norway)	N	Alpha (Spain)	N	p-value
Intent	.92	204	.85	204	p= .000
SN	.81	209	.82	200	p= .753
AA	.68	165	.79	185	p= .011
CA	.77	176	.89	188	p= .000
PBC	.92	205	.95	202	p= .002
MN	.81	208	.85	203	p= .169
GRID	.64	205	.66	205	p= .891
SID	.70	205	.64	198	p= .293

It can be seen that Spanish and Norwegian students differed significantly as to the level of three of the TPB measures: affective attitude (AA), subjective norm (SN) and perceived behavioural control (PBC). The Spanish students evaluated quitting smoking during the next three months in more positive terms than the Norwegian students as far as affective items were concerned (mean levels 2.09 vs. .54, $p<.05$). The Spanish students also perceived the social pressure to quit smoking to be

stronger than the Norwegian counterparts (mean levels 5.70 vs. 5.26, $p < .05$). Finally, the Spanish students reported significantly lower level of perceived control over quitting smoking the next three months than the Norwegian students (mean levels 3.47 vs. 3.95, $p < .01$). The Spanish students also appeared to be significantly younger than the Norwegian students (22.1 yrs vs. 23.8 yrs, $p < .05$). Accordingly, they also reported to have been smoking for a significantly shorter period of time (5.9 yrs vs. 7.3, $p < .05$). Otherwise, there were no statistically significant differences between Spanish and Norwegian students concerning number of cigarettes smoked per day (both 2.7) and number of quit attempts (1.8 vs. 2.3 respectively). Thus the respondents of the two samples differed as to age and number of years smoking. However, the two measures did not correlate significantly with intentions, and can thus not affect the relation between the theoretical components and intentions. Hence they were not included in the regression analyses.

In table 2 it can be seen that for Spanish students, the correlations among all the theoretical measures and quitting intentions were statistically significant except for PBC, and that affective attitude (AA) and subjective norm (SN) received correlations close to $r = .30$ with intentions.

Table 2

Descriptive statistics, and correlations among the various measures.

Spanish sample.

	INT	CA	AA	SN	PBC	SID	MN	GRID	X	95% CI
INT	----	.18**	.25**	.25**	.10	-.16*	.30**	.21**	3.10	(2.85-3.35)
CA		----	.56***	.22**	-.07	.08	.05	.17*	2.09	(1.91-2.37)
AA			----	.24**	-.15*	-.02	.14	.16*	1.33	(1.12-1.54)
SN				----	-.07	.10	.09	.17*	5.70	(5.50-5.90)
PBC					----	-.44***	.00	-.04	3.47	(3.23-3.71)
SID						----	-.19*	-.15*	4.86	(4.68-5.04)
MN							-----	.49***	2.77	
GRID								----	3.73	(3.24-4.22)

* $p < .05$ ** $p < .01$ *** $p < .001$

N varied between 179 and 204

In the Norwegian sample (Table 3) it can be seen that affective attitude (AA) and group identity (GRID) had correlations above $r = .40$ with quitting intentions, while self-identity (SID) correlated well above $r = .30$ with intentions.

Table 3

Descriptive statistics, and correlations among the various measures.
Norwegian sample.

	INT	CAT	AA	SN	PBC	SID	MN	GRID	X	95% CI
INT	----	.27**	.47**	.18**	.24**	-.35**	.33**	.41**	2.89	(2.63-3.15)
CA		----	.48**	.21**	.00	-.09	.08	.21**	2.01	(1.82-2.20)
AA			----	.27**	.01	-.04	.20**	.30**	.54	(.33-.75)
SN				----	-.00	.05	.24**	.18*	5.27	(5.05-5.47)
PBC					----	-.38**	-.05	.06	3.95	(3.76-4.14)
SID						----	-.15*	-.30**	5.16	(4.98-5.34)
MN							-----	.43***	3.14	
GRID								----	3.34	(2.88-3.86)

* $p < .05$ ** $p < .01$ *** $p < .001$

N varied between 159 and 204

To summarise, the correlations among the predictors and quitting intentions were all in the expected directions. The more positive the attitudes towards quitting smoking, the stronger the perceived social pressure to quit, the stronger the perception of control over quitting, the less one self-identified as a smoker, the more one disliked belonging to the group of smokers, and the higher the conviction that smoking is wrong, the stronger the intention to quit smoking.

Predicting intentions

Behavioural intentions were regressed on the components of the extended TPB model hierarchically, separately for each country.

The original TPB-components were entered in the first step, while the extension predictors, self-identity (SID), group identity (GRID) and moral norm (MN) were included in the second step.

The results of the Spanish students are presented in table 4. In step 1 the components of the TPB accounted for 12.2 % (R^2 adjusted) of the variance in quitting intentions. Both subjective norm (SN) ($\beta=.25$, $p<.01$) and affective attitude (AA) ($\beta=.21$, $p<.01$) had significant direct effects, while PBC had a borderline significant effect ($\beta=.13$, $p=.07$). In the second step adjusted R^2 increased significantly to 18.2 % ($F_{\text{change}} 5.09$ (3, 164), $p<.001$). Noteworthy, subjective norm (SN) retained its significant direct effect ($\beta=.25$, $p<.01$), which were also the case for affective attitude ($\beta=.17$, $p<.05$). Furthermore, self-identity (SID) received a borderline significant beta weight ($-.16$, $p=.058$), while this was not the case for group identity (GRID). Finally, moral norm (MN) had a significant direct effect ($\beta=.23$, $p<.001$).

Table 4.

Regressing (hierarchically) quitting intentions upon the TPB components, self-identity (SID) and group identity (GRID).

Spanish sample

Steps	R^2	Beta	p-level
<u>Step 1</u>			
	12.2		
AA		.23	$p<.05$
CA		.01	ns
SN		.24	$p<.001$
PBC		.13	$p=.07$
<u>Step 2</u>			
	18.2		
AA		.19	$p<.05$
CA		.02	ns
SN		.25	$p<.01$
PBC		.08	ns
SID		-.15	ns
GRID		-.06	ns
MN		.23	$p<.01$

Note: For further explanation see text

The results of the Norwegian students are given in table 5. In the first step the TBP predictors accounted for 22.8 % (R^2 adjusted) of the variance in behavioural intentions, and affective attitude (AA) ($\beta=.39$, $p<.001$) and PBC ($\beta=.15$, $p<.05$) had a statistically significant contribution in the intention formation process. Subjective norm (SN) did not predict intentions significantly. In the second step, inclusion of the additional predictors into the model increased the explained

variance significantly (from $R^2 = 23.1$ to 30.3% , $F_{\text{change}} = 6.64$ (3, 138) $p < .001$). Affective attitude (AA) ($\beta = .32$, $p < .001$) and group identity (GRID) ($.21$, $p < .05$) contributed significantly to the understanding of the intention formation process, while self-identity (SID) did not contribute significantly ($\beta = -.11$, ns). Finally, moral norm (MN) had a borderline significant effect on intentions ($\beta = .14$, $p = .078$).

Table 5.

Regressing (hierarchically) quitting intentions upon the TPB components, self-identity (SID) and group identity (GRID).

Norwegian sample.

Steps	R ²	Beta	p-level
<hr/>			
<u>Step 1</u>	23.1		
AA		.39	p<.01
CA		.13	ns
SN		.01	ns
PBC		.15	p=.05
<hr/>			
<u>Step 2</u>	30.3		
AA		.32	p<.001
CA		.13	ns
SN		-.03	ns
PBC		.13	ns
SID		-.11	ns
GRID		.21	p<.01
MN		.14	p=.078

Note: For further explanation see text

The differences in predictive power of the predictors on quitting intentions across the two samples were tested by comparing the magnitude of the unstandardized regression coefficients as suggested by Baron and Kenny (1986), in the final step. Subjective norm (SN) exhibited a significantly stronger direct effect on intentions in the Spanish sample than in the Norwegian sample ($\Delta_{\text{coeff}} = .33$, $t = 2.66$, $p < .01$), while the direct effect of group identity (GRID) was significantly stronger in the Norwegian sample than in the Spanish sample ($\Delta_{\text{coeff}} = -.28$, $t = -2.18$, $p < .05$). Finally, the direct effect of affective attitude (AA) was significantly stronger in the Norwegian sample only in the first step ($\Delta_{\text{coeff}} = -.27$, $t = -1.64$, $p < .05$), while there was no significant difference in the second step. Otherwise, the predictive power of the predictors did not differ between the two samples.

Discussion

One major rationale behind the present study is that individuals in individualistic cultures are governed more by personal states, while individuals in collectivistic cultures should be guided more strongly by norms (Triandis, 1994). In a TPB context this implies that behavioural intentions should be predictable from attitudes and perceived control in individualistic cultures, while subjective norm should be a stronger predictor in collectivistic than individualistic cultures. In the present study, which is concerned with predicting quitting smoking intentions, we partly found support for these ideas. Thus affective attitude was a significantly stronger determinant of quitting intentions in Norway (an individualistic country), than in Spain (a collectivistic country), in terms of the TPB, but not when the additional predictors were included into the model. Secondly, subjective norm was found to be significantly stronger in Spain than in Norway, in the prediction of intentions to quit smoking. It should be added that we provided a stronger test of the hypothesis of the moderating role of culture by testing whether the magnitude of the regression coefficients differed significantly in the two countries.

The differential effect of subjective norm supports the most consistent finding in the literature of cross-cultural studies of the TPB, notably that subjective norm generally constitutes a stronger predictor of behavioural intentions in collectivistic cultures than in individualistic cultures (Bagozzi et al., 2001; Lee & Green, 1991; Godin et al., 1996). A parallel support derives from the study by Ybarra and Trafimow (1998) showing that subjective norm is a stronger predictor than attitudes for intention to use a condom among individuals with a strong collective self, while attitude was stronger among individuals with an individualistic self. Along similar lines, Marin et al. (1990) have noted that collectivism in Hispanic cultures expresses itself in terms of placing high value on smooth relationships and being nice to others, i.e. they are more strongly tuned in to the opinion of important others. The role of normative influences has been confirmed in a recent cross-cultural study on smoking in which societal norms predicted quitting intentions in collectivistic as well as individualistic countries (Hosking et al, 2009). This finding may help identify the conditions under which subjective norms happens to be a predictor of behavioural intentions on a footing similar to the other predictors. Reviews of the TPB literature have consistently observed that subjective norm is the weakest predictor of intentions (Armitage & Conner, 2001), which have led to the somewhat "ethnocentric" conclusion that social influences are less important than personal factors for behavioural predictions. Overall, the results tend to support the prevailing predictions concerning the working of the TPB in collectivistic and individualistic countries.

A second rationale underlying the present study deriving from social identity theory (Tajfel & Turner, 1986, see Falomir et al., 2000), is that in a country with a high level of regulatory and restrictive measures against smoking, the conflict between smokers and non-smokers (notably an identity conflict) should be stronger in terms of a threatened identity on the part of the smokers, and in turn “we-identifications” among smokers should be more easily activated than in a context with a lower level of conflict. Accordingly, group identity should be a stronger predictor of quitting intentions in Norway than in Spain due to the higher level of regulatory and restrictive measures against smoking in Norway at the time of the study (Tobacco control country profiles, 2003). Consistent with this reasoning it was observed that the direct effect of group identity on quitting intentions was significantly stronger in Norway than in Spain. The most likely explanation for the stronger effect of group identity in Norway than in Spain was that the collective self-conception (“we smokers”) becomes salient and receives motivational momentum in Norway deriving from the identity conflict between smokers and non-smokers. According to social identity theory (Tajfel & Turner, 1986), one way to cope with such an identity threat is to leave the group, i.e. quit smoking, provided that the identification with the group of smokers is weak.

The direct effects of the two other additional predictors, moral norms and self-identity, did not differ between the two samples. These results are in lines with the predictions. As noted by identity theorists self-identity is a stable self-conception linking the self to the wider social structure (see Burke, 2004), and thus the theory is mainly focusing on confirming existing identities, and less on the situational variability of social identity (see Stryker, 2008). This indicates that identity theory has little to say about connectedness to other people and how to fit in with one's group. A similar reasoning pertains to the power of moral norms in the prediction of intentions in the sense that moral convictions tend to be universal transcending persons and cultures (Skitka et al. 2005). These theoretical ideas contrast with the role of “we-identifications” which constitute flexible self-conceptions created in response to the social context in terms of which social categories are salient at the moment (Turner, 1994).

The role of self-identity in the process of formation of behavioural intentions has been widely explored. Typically, self-identity predicts behavioural intentions above the components of the TPB as shown in a recent meta-analysis covering a number of behavioural domains (Rise et al., 2009). However, when it comes to quitting smoking the results are mixed. In a study among smoking students, self-identity did not predict quitting intentions above the TPB components (Moan & Rise, 2005), while it did so in a study on intentions to reduce smoking among adolescents (Moan & Rise, 2006). In

the present study the role of self-identity did not reach statistical significance (borderline in the Spanish sample) attesting to the marginal role in the prediction of intention to quit smoking. One likely explanation for the marginal role of self-identity in this context derives directly from identity theory (Burke, 2004) which says that functioning of self-identity rests upon a match between the meanings smokers hold for themselves in terms of being a smoker (i.e. the identity standard) and their perception of self-relevant meanings related to interactive smoking situations. This equilibrium between identity and external situation may be disturbed due to the stigmatization and negative description of smokers which to some extent are shared by smokers themselves (see Falomir et al., 2000). In turn this may contribute to low validity of the measures of self-identity and thus lower predictive power.

In a manner similar to self-identity, the role of moral norms in the context of the TPB has typically been shown to have an effect on behavioural intentions beyond the TPB components (see Manstead, 2000). This is also the case when it comes to the area of quitting intentions (Moan & Rise, 2005) as well as intentions to reduce smoking (Moan & Rise, 2006). Thus the role of moral norms for quitting intentions in the present study (borderline in the Norwegian sample) corroborates these results supporting the notion that quitting smoking is a moral behaviour.

To summarise, the present study has provided evidence of the moderating role of culture in the TPB so that the role of subjective norm in the prediction of intentions to quit smoking was significantly stronger among Spanish smoking students than Norwegian smoking students. Nevertheless, this conclusion hinges on the finding that Norway is a more individualistic country than Spain as measured on the dimension of individualism/collectivism (Allik & Realo, 2004). Secondly, the stronger effect of group identity on quitting intention in Norway than in Spain indicates that existence of a conflict between smokers and non-smokers moderates this relation. This is consistent with predictions deriving from social identity theory. Third, the results support the marginal role of self-identity in the formation of quitting intentions. Fourth, the universal role of moral norm in quitting smoking is noteworthy, a finding which should be taken more serious in persuasive anti-smoking campaigns.

More generally, the results also attest to the notion that the social context is important to consider in accounting for quitting smoking. Noteworthy in this context is the indication of an escalating conflict between smokers and non-smokers in countries with a high level of regulatory measures against smoking, which may be taken greater advantage when promoting quitting smoking.

Finally, there are a number of limitations to take into account in TPB studies like the present one. However, these limitations would appear to be shared by most of the published TPB studies, and have been extensively reported (cf. Moan and Rise, 2005). For the present study some issues warrant considerations. For example, we have assumed that “culture scores” apply to individual respondents, which certainly need not be the case. Thus the next step would be to explore whether the results are replicated using individual level measures of individualism and collectivism. It would have been advantageous to provide a broader range of items in order to tap into a complex constructs like identity, preferably with a view to convergent and discriminant validity.

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