

Sunscreen Purchase Intention amongst Young Moroccan Adults

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Abstract

Employing structural equation modeling and an extended theory of planned behaviour (TPB) incorporating the additional influence of price perception as a conceptual framework, this paper explored the determinants of sunscreen purchase intention for young Moroccan adults. Consistent with the TPB, results confirmed the importance of subjective norms, attitude and perceived control in shaping sunscreen purchase intention. However, contrary to assumptions price was not found to be a significant factor in sunscreen purchase intention. Results of this study support the application of the TPB in the sunscreen purchase context and highlight the importance of using its constructs over price in the development of effective marketing campaigns.

Key Words: Sunscreen, Purchase Intention, Price, Young Moroccan Adults

1. Introduction

This study explores the determinants of sunscreen purchase intention for young Moroccan adults. Morocco is a country located in the north west of Africa. It enjoys sunny weather for most of the year which implies relatively high levels of ultraviolet radiation (Meziane et al., 2008). Morocco is also a young country with over 51% of the population aged less than 25 years (Moroccan High Commission for Planning, 2004, 2010). Evidence suggests that young adults tend to spend more time in the sun (Abroms et al., 2003; Arthey and Clarke, 1995) be less likely to use a sunscreen than older adults (Abroms et al., 2003; Koh et al., 1997; Mermelstein and Riesenber, 1992; White et al., 2008) and thus be at greater risk of developing skin cancer in later life (Kutting and Drexler, 2007; Heckman and Coups, 2011). Despite this there a scarcity of research on sunscreen in general in Morocco and what research is available provides little insight into the underlying purchase motivations of Moroccans and in particular young Moroccan adults in relation to sunscreen. Meziane et al. (2008) for example, in one of the few Moroccan studies available explored knowledge of the sun's deleterious effects amongst adults aged on average between 30 and 50 years finding only 43% of respondents who indicated knowledge about sunscreen being a sun protective measure actually bothered to purchase a sunscreen.

These results were in spite of the fact that one of Morocco's first public awareness campaign's on the sun's harmful effects was running at the time of the study, suggesting routine purchase of sunscreen may be even lower. Indeed, an earlier study by Benchikhi et al. (2002) that explored sunscreen use in pregnant women in Casablanca, Morocco's largest city, found only 17% of the 425 respondents to the study used and by implication purchased sunscreen.

Numerous studies have demonstrated the predictive ability of purchase intentions in terms of consumer buying behaviour (e.g., Morwitz and Schmittlein, 1992; Tsiotsou, 2006). However, little is known about purchase intention within the context of sunscreen as most sunscreen studies have examined sunscreen usage behaviour patterns of individuals (Wang and Dusza, 2009). Information about sunscreen purchase intent is important from a consumer behaviour and marketing perspective. Such insights can assist marketing managers forecast sales of sunscreen products as well as assist with segmentation and promotional strategies (Morwitz and Schmittlein, 1992). Therefore this research by exploring the antecedents of sunscreen purchase intention amongst young Moroccan adults will assist marketing managers in their marketing decisions.

The theory of planned behaviour (TPB) is one model that has been successfully used to explore the antecedents of numerous consumer and health related intentions and behaviours (Ajzen, 1991; Downs and Hausenblas, 2005; Fishbein and Ajzen, 2010; Taylor and Todd, 1995; Webb and Sheeran, 2006) including various sun protective intentions (e.g., Hillhouse et al., 1997; Myers and Horswill, 2006; White et al., 2008). The TPB posits that intentions are the most proximal determinant of behaviour, which in turn can be predicted from attitudes, subjective norms and perceived behavioural control (Ajzen, 1991; Fishbein and Ajzen, 2010). Under the TPB it is assumed that the more favorable attitudes, subjective norms and perceived

behavioural control (PBC) are towards the behaviour in question the stronger the behavioural intention (Ajzen and Driver, 1992).

In the present study in order to enhance the predictability of consumer intention towards purchasing sunscreen in Morocco the TPB model was modified to include the influence of price. The decision to include price was based upon the results of a preliminary focus group study conducted as part of this research (see methodology section). However, inclusion of this variable also finds support in other consumer research that suggests price has a direct impact on purchase intention across a broad range of products (e.g., Dodds et al., 1991, calculators and stereo headsets; Lichtenstein et al., 1993, groceries) including sunscreen (e.g., Mayer et al., 2001).

2. Conceptual Framework

As indicated this study aims to improve understanding of the factors that influence the purchase intention of sunscreen amongst young Moroccan adults. The behaviour of interest is purchase intent because sunscreen use is dependent first and foremost upon purchasing sunscreen (Hillhouse et al., 1997). The framework is a modified version of the TPB model. Each of the intended study variables are discussed in the following section.

Sunscreen

The European Union, Japan, South America, and South Africa regulate sunscreens as over-the-counter cosmetic products (Hexsel et al., 2007). Therefore sunscreen can be defined as a cosmetic product that has a protective function against the sun's ultraviolet radiation (Loden et al., 2011).

Purchase intention

Intention is considered the center of Ajzen's (1991) TPB model capturing all the motivational factors leading to the actual behaviour. It reflects the extent to which consumers are willing to make efforts towards undertaking the behaviour and in the context of the present study suggests that the higher the intention to purchase sunscreen, the higher the likelihood that the actual purchase will occur (Ajzen, 1991). Intention can be predicted from attitudes, subjective norms and perceived behavioural control (Fishbein and Azjen, 2010).

Attitude and sunscreen purchase intention

Attitude is the personal determinant of intention. It refers to the degree to which a person has a favorable or unfavorable evaluation of the behaviour in question (Ajzen, 1991). In the context of the present study intention to purchase sunscreen requires individuals to have a positive attitude about sunscreen. If for example they do not think sunscreen is effective in protecting the skin or regard sunscreen unfavourably they are likely to have a negative evaluation of sunscreen and likewise a low purchase intent (Abroms et al., 2003; Banks et al., 1992; Cockburn et al., 1989; Hall et al., 2001; Hill et al., 1984; Leary and Jones, 1993). Abroms et al. (2003) for example in a focus group study on gender differences in sunscreen use amongst young adults found males used sunscreen less than females and had a more negative attitude towards its use because it took too much effort and time to apply, was difficult to carry around, had an

unpleasant smell, a greasy texture and was not masculine. Similarly Hall et al. (2001) found the proportion of adolescents who used and by implication purchased sunscreen was lower among those who had a negative attitude toward protection. Numerous other studies have highlighted the importance of attitude as a predictor of intention to use sunscreen (e.g., Bandi et al., 2010; Branstrom et al., 2004; Heckman and Coups, 2011; Hill et al., 1984; Hillhouse et al., 1997; Hoffman et al., 1999; Myers and Horswill, 2006; Pertl et al., 2010; White et al., 2008). Heckman and Coups (2011) for example in a study on correlates of sunscreen use amongst 242 Philadelphian high school students found sunscreen use was more likely to be associated with positive attitudes about sunscreen and skin protection as opposed to negative attitudes toward skin cancer or photo-aging risks. Thus it is hypothesized that:

H1: There is a positive relationship between attitude towards sunscreen and intention to purchase sunscreen.

Subjective norms and sunscreen purchase intention

Subjective norms are the social determinants of intention and reflect social pressure perception in respect of a given behaviour (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 2010). In the context of the present study they reflect an individual's perception of whether people who are important to them would or would not approve of their sunscreen purchase intention. It is difficult to find studies that focus specifically on sunscreen purchase intent. Further, whilst there are a number of studies on the predictive ability of subjective norms for sunscreen use these provide competing conclusions. For example White et al. (2008) in a study of young people in Queensland Australia, a high risk skin cancer area, found group and subjective norms to be the strongest predictors of adolescents' and young adults' intentions to perform sun protective behaviour including sunscreen use. Pertl et al. (2010) also found subjective norms to be a strong predictor of sunscreen intention. Conversely, other studies (e.g. Hillhouse et al., 1997; Jones et al., 2001; Terry and Hogg, 1996) found subjective norms to be the weakest predictor of sunscreen use in the TPB model. And Myers and Horswill (2006) in a study of the social cognitive predictors of sun protection intention found subjective norms were not a significant predictor at all.

However normative influences are likely to vary across cultures (Fishbein and Ajzen, 2010). Arguably in collectivist cultures subjective norms are more influential than in individualist cultures (Park et al., 2007). Myers and Horswill (2006) for example posited that a possible reason for the non-significance of subjective norms in their study was respondent's reluctance to admit to the influence of others over their own attitudes, practices and behaviours. This explanation seems plausible given their data were collected from young adults studying at the University of Reading in the United Kingdom. The United Kingdom is considered an individualistic culture (Hofstede, 2009) where individual thought is highly prized and personal goals are given priority over collective goals (Jansz, 1991; Kagitcibasi, 1997). Morocco on the other hand is considered a collectivist culture (Hofstede, 2009; Jansz, 1991; Veltri and Elgarah, 2009) where the interests of the group take precedence over those of the individual and where individual freedom is restricted by the group. As such Moroccans are prone to comply with subjective norms. Thus it would seem likely that in the Moroccan context intention to buy sunscreen will be influenced by important others. Hence it is hypothesized that:

H2: There is a positive relationship between subjective norms and intention to purchase sunscreen.

Perceived behavioral control and sunscreen purchase intention

Perceived behavioural control (PBC) is reflected by an individuals' perception of how easy or difficult performance of a given behaviour is likely to be (Ajzen 1985, 1988). It is appropriate to use in situations where the behaviour under study may not be under the complete control of the individual (Ajzen, 1988) for example in those situations controlled by external barriers such as time and money constraints (Sparks, 2007). Purchase of sunscreen could plausibly be characterized by such barriers.

In the context of the present study individuals who perceive they have control over purchasing sunscreen will have stronger intention to buy sunscreen. Once again it is difficult to find studies that focus specifically on sunscreen purchase intent, however numerous studies have found that PBC significantly impacts intention to use sunscreen (e.g., Branstrom et al., 2004; Heckman and Coups, 2011; Hillhouse et al., 1997; Pertl et al., 2010; White et al., 2008). For example Hillhouse et al., (1997) in a study of the psychological determinants of sunbathing, tanning salon use and sunscreen use for students at an American University found PBC contributed significantly to influencing intention to use sunscreen. Likewise Heckman and Coups (2011) found students reported greater sunscreen use if they had a higher level of PBC over skin protection. Interestingly Pertl et al. (2010) in a study that examined the role of PBC (conceptualised as self-efficacy and controllability) in predicting sunscreen and sunbed use intentions found self-efficacy (measured using 'easy/difficult' and 'I could' items) but not controllability (measured using 'under my control' and 'up to me' items) emerged as a significant predictor of sunscreen use intention for young Irish adults aged 16 to 26 years. Thus it is hypothesized that:

H3: There is a positive relationship between perceived behavioural control and intention to purchase sunscreen.

Price and sunscreen purchase intention

Foster and Cadogan (2000) suggest price is the most important consideration for the average consumer when purchasing products. Price refers to what a consumer gives up (measured in monetary terms) to obtain a desired good or service (Zeithmal, 1988). As such higher prices are likely to negatively affect the probability of purchase (Lichtenstein et al., 1993). Whilst studies that focus on the specific relationship between sunscreen price and purchase intention are scarce numerous studies have found that price has a negative impact on use of sunscreen (e.g., Abroms et al., 2003; Loden et al., 2011; Mezaine et al., 2008; Nicol et al., 2007; Otas et al., 2007; Purdue, 2002; Robinson et al., 2000). For example, Otas et al. (2007) found price was a demotivating factor for Turkish families to use sunscreen regularly and Nicol et al. (2007) found that cost was a limiting factor for French beach goers to use sunscreen as often as necessary to achieve actual skin protection. Mezaine et al. (2008) in one of the few studies that asked respondents about sunscreen purchase intention found cost a limiting factor for Moroccans to buy sunscreen even when aware of the sun's deleterious effects. Finally Mayer et al. (2001) in a

study of sun safety strategies among young zoo visitors found discounting the price of sunscreen increased willingness to purchase the product. Hence it is hypothesized that:

H4: There is a positive relationship between sunscreen price and sunscreen purchase intention.

3. Research Methodology

Preliminary study

Given the wide range of possible determinants impacting the purchase intention of sunscreen as well as the lack of previous Moroccan research on which to draw, a preliminary focus group study was undertaken with the aim of identifying those determinants seen to be of particular importance to Moroccan men and women. Focus groups can be a useful means of preliminary data collection when little is known about the phenomenon of interest (Kruegar and Casey, 2000; McDaniel and Gates, 2010). Furthermore Fishbein and Ajzen (2010) recommend use of qualitative methods to identify salient beliefs about a particular behaviour prior to the later application of the TPB for quantitative prediction.

Two focus groups were conducted in two different cities within Morocco. The first group was composed of 4 female and 4 male university students, aged between 19 and 24 years while the second group was composed of four couples with a variety of backgrounds and occupations aged between 20 and 40 years. The first focus group took 45 minutes and the second 75 minutes. Both groups were held in private focus group facilities. Focus group questions covered whether participants purchased sunscreen, the context and frequency of sunscreen purchase, reasons for sunscreen purchase, attitudes towards sunscreen in general, and determinants of sunscreen purchase.

Results indicated that all participants purchased sunscreen however females were more likely than males to purchase sunscreen regularly. This finding reflects previous research results (e.g., Abrams et al., 2003; Hall et al., 2001; Thieden et al., 2005; Jones et al., 2007; Koh et al., 1997). Results also indicated that avoiding sunburn was the main reason for purchasing sunscreen, perceived pressure from family and friends encouraged sunscreen purchase and sunscreen purchase was generally seen to be a positive behaviour. In addition, most participants indicated that price influenced their sunscreen purchase decision.

Main study

Online questionnaires were used for the main study. Using the internet to collect data on human behaviour has been found to be more efficient and less expensive than other modes of data collection (Kraut et al., 2004). Further, internet based questionnaires have been found to be a suitable alternative to more traditional paper-based measures, with no significant differences noted in terms of internal validity (Riva et al., 2003). In the present study an email with a description of the study, an invitation to participate and a unique link to the online survey was sent to 380 people selected randomly from the employee contact list of three Moroccan government institutions and three Moroccan universities. A reminder email was sent one week after the initial email and again two weeks after the initial email. Any remaining non

respondents were telephoned to verify receipt of the emails and to serve as a final reminder to complete the survey. A total of 269 completed questionnaires were obtained.

Questionnaire and measures

To remain consistent with previous research the major variables in the TPB (attitude, subjective norms, intention, and perceived behavioural control) were measured using items consistent with the questionnaire construction manual developed by Azjen (2006). While items measuring price were adapted from Sukato and Elsey's (2009) research on male consumer behaviour in buying skin care products in Thailand. The questionnaire comprised 20 questions. Draft questionnaires were reviewed by a number of university professors and revised as needed. For respondent convenience the final questionnaire was translated into French. Whilst Arabic is the official national language in Morocco and English is popular in education, international trade and diplomacy, it is French that is most widely used in government, education, business and the media (Sadiqi, 2006; Saib, 2001). In line with the procedure recommended by Brislin (1980) all survey measures were first translated from English into French and then independently back-translated into English by another translator. Discussion between the translators was used to adjust the French translation for the few identified differences between the original English version and the back-translated version. A pilot was then conducted to determine whether the questionnaire flowed naturally, whether the questions were clear and easy to understand and to establish a completion time. Twenty respondents participated in the pilot. A number of minor modifications to question wording were made as a result of the pilot. Following completion of the pilot the final questionnaire was posted online.

Sunscreen was defined in the questionnaire as a product that "helps prevent the sun's ultraviolet (UV) radiation from reaching the skin".

Attitude towards sunscreen purchase intention was measured using four items. Respondents were asked to rate their attitude toward purchasing sunscreen on a set of seven point semantic differential scale items. The scale contained four adjective pairs. Two of these adjective pairs had an instrumental tone (necessary/unnecessary and beneficial/harmful) and two had an affective tone (pleasant/unpleasant and enjoyable/unenjoyable). In line with Ajzen's (2006) recommendations overall attitude was measured by averaging the four scales (after reverse scoring appropriate items) such that lower scores indicated a less positive attitude towards the purchase of sunscreen.

Subjective norms toward sunscreen purchase intention were measured using two seven point semantic differential items. The first question asked respondents if people who were important to them would approve/ disapprove of their purchase of sunscreen and the second question asked whether people important to them would think they should/should not purchase sunscreen.

Perceived behavioural control was measured using two seven point scale items. The first question asked respondents whether the decision to purchase sunscreen was up to them (strongly agree/strongly disagree) and the second question asked whether buying sunscreen when it was next sunny was impossible/possible.

Intention to buy sunscreen was measured using two seven point scale items. The first item asked respondents if they intended purchasing sunscreen when it was next sunny (extremely unlikely/extremely likely). The second question asked if the respondent planned to purchase sunscreen when it was next sunny (strongly agree/strongly disagree).

Price was measured using two seven point scale items. The first question asked respondents if price influenced whether or not they purchased sunscreen (strongly agree/strongly disagree). The second question assessed the likelihood a respondent would purchase sunscreen based on price (extremely unlikely/extremely likely). The two scales measuring the direct effect of price and price influence on the intention to buy were averaged to provide a measure which we called 'price influence'.

The questionnaire also contained standard socioeconomic and demographic questions including gender, age, occupation, education, income and city of residence.

4. Sample and Data Analysis

Sample

The 380 distributed questionnaires resulted in a sample of 268 (a response rate of 70%). Thirty observations were deleted due to missing data leaving a usable sample of 238 data points. Geographically the sample comprised respondents from the top 10 largest metropolitan areas in Morocco (Casablanca, Rabat, Fes, Marrakech, Agadir, Tangier, Meknes, Oujda, Tetuan, Kenitra) in roughly proportionate numbers (Moroccan High Commission for Planning 2004).

In our sample 65% were female. This compares to a Moroccan population where 51% are female and 49% are males (Moroccan High Commission for Planning 2010). Most of the respondents (79%) were aged between 18 and 24 years, with 17% aged between 25 and 34 years and the remaining respondents aged between 35 and 44 (3%) and above 45 years (1%). As indicated earlier we focused on young Moroccan adults because young adults are more likely to spend more time in the sun and be less likely to use a sunscreen than older adults (Abroms et al., 2003). In addition young adulthood is when skin damage is most likely to occur and when individuals accrue most of their risk for developing skin cancer in later life (Abroms et al., 2003; Stern et al., 1986).

In keeping with the age distribution, 79% of respondents were students and 17% were employed. The educational level also reflected the age and occupation distribution with the majority of respondents (56%) indicating they held a bachelor degree as their highest academic qualification, followed by 22% indicating they held a masters, 6% a PhD and only 16% of the sample reporting high school education or below. Whereas the macroeconomic aggregate numbers for the Moroccan population from the World Bank indicate that for the year 2009 the literacy rate for the adult population was 56% (World Bank, 2009).

Analysis

Structural equation modelling (SEM) using AMOS 20 was used to control for measurement error and to test the implications of the TPB on sunscreen use amongst young Moroccan adults. As can be seen in table 1, all measures, except for demographic variables, were based on likert scales and therefore were treated as continuous variables (Rhemtulla et al., 2010). All constructs were checked for normality. Age was the only variable found to moderately deviate from normality with a kurtosis of 5.9. We proceeded with estimation using bootstrapping but found that it did not improve on our estimation. In other words, there were no differences in terms of fit between the standard errors from the Bollen-Stine bootstrap and those from the maximum likelihood.

In examining the effect of price influence on the intent to buy sunscreen amongst young Moroccan adults, we introduced age to control for the respondents fixed effects. Thus age was introduced as a covariate to control for the potential differences in income constraints that could influence sunscreen buying behaviour. Table 1 lists the constructs, the questions and scale items.

Table 1. Variable definition and descriptive statistics

Variable	Unit of Measurement	Mean	SD
Respondent's characteristics			
Age, 1=Under 18, 2=18-24 years, 3=25-34 years, 4=35-44 years, 5=45 years or more	1-5	2.25	0.54
Gender, 1= Male, 0=Female	0-1	0.34	0.47
Employed, Yes=1, No=0	0-1	0.17	0.37
Student=1, Otherwise=0	0-1		
Education, 1=No formal education, 2=Primary school, 3=Secondary school, 4=High school, 5=Bachelor, 6=Master, 7= Ph.D.	1-7		
Price		4.18	1.69
I am likely to buy sunscreen based on price, extremely unlikely/extremely likely	7-point scale	4.06	1.98
Price influences whether or not I purchase sunscreen, strongly agree/ strongly disagree	7-point scale	4.31	2.1
Subjective norms		5.4	1.55
Most people who are important to me approve/disapprove of me buying sunscreen	7-point scale	5.29	1.85
People who are important to me think that I should/should not buy sunscreen	7-point scale	5.53	1.7
Perceived control		5.04	1.47
For me buying sunscreen when it is next sunny would be possible/ impossible	7-point scale	4.44	2.12
It is mostly up to me whether or not I buy sunscreen strongly disagree/ strongly agree	7-point scale	5.65	1.75
Attitude		5.11	1.32
Purchasing sunscreen is pleasant/unpleasant	7-point scale	4.57	1.8
Purchasing sunscreen is necessary/unnecessary	7-point scale	5.19	1.93
For me, purchasing sunscreen is harmful/beneficial	7-point scale	5.81	1.5
For me, purchasing sunscreen is enjoyable/unenjoyable	7-point scale	4.89	1.68
Purchase intention		4.35	1.83
Intend to purchase sunscreen when it is next sunny, unlikely/likely	7-point scale	4.06	2.17
I plan to purchase sunscreen when it is next sunny agree/disagree	7-point scale	4.66	2.08

5. Results

The fit indexes from the structural model indicate that the model fits the data. The overall model statistics show that the chi-square for the model is 7.156 (d.f. = 7, $p > .05$), therefore indicating that the model constructs can reproduce the original variance-covariance matrix. Moreover, as reported in Table 2, the goodness-of-fit index (GFI), the adjusted goodness-of-fit index and root mean square error of approximation (RMSEA) are good (.99, .97, and .01, respectively).

Table 2. Results

Goodness of fit measures: CMIN/DF=1.022, GFI=.99, AGFI=.970, RMSEA=.010			
	Estimate	S.E.	p Value
Subjective Norms → Purchase Intention	.207	.064	.001
Perceived Control → Purchase Intention	.386	.067	.000
Attitude → Purchase Intention	.515	.079	.000
Price Influence → Purchase Intention	-.031	.05	.533
Age → Purchase Intention	-.097	.155	.532

These results lend support to the TPB constructs as good predictors of sunscreen buying amongst young adults in Morocco. Estimates for subjective norms, perceived control, as well as attitude are all significant ($p < .05$) indicators of sunscreen buying intention. The direct positive effect of attitude, subjective norms and perceived control on intention to buy sunscreen are 0.515, 0.207, and 0.386, respectively. Furthermore, our model shows that the coefficients of price influence as well as age are not significant ($p > .05$) leading us to believe that these variables are not good predictors of sunscreen buying intention. Table 3 exhibits the covariance structure between the three classical constructs of TPB all of which are positive and significant.

Table 3. Covariance structure

	Estimate	S.E.	p Value
Subjective norms → Perceived control	.891	.16	.000
Perceived control → Attitude	.957	.142	.000
Subjective norms → Attitude	1.034	.15	.000

6. Discussion

The aim of this study was to identify the determinants of sunscreen purchase intention for young Moroccan adults, using an extended theory of planned behaviour incorporating the additional influence of price. Contrary to expectations results show that price is not a good predictor of sunscreen purchase intent. However consistent with TPB assumptions (Ajzen and Fishbein, 1980) findings indicate that an individual's attitude towards sunscreen coupled with the attitude of important others towards sunscreen (subjective norms) and the individual's level of control over behaviours related to sunscreen purchase are good predictors of sunscreen buying intention amongst young Moroccan adults. Thus this study is a further validation of the TPB as a useful predictor of consumer behaviour within the context of sunscreen purchase decisions. The results are also in line with previous studies that suggest the

TPB is a useful predictor of sun protective intentions in young adults (e.g., Hillhouse et al. 1997; Myers and Horswill 2006; White et al. 2008).

Of interest is the finding that subjective norms are significant in sunscreen purchase intention. Whilst this finding is consistent with the TPB model assumptions, it contradicts Myers and Horswill (2006) findings that subjective norms have no predictive ability in relation to sunscreen intention. However it does seem to lend support to the argument that because Morocco is a collectivist society (Hofstede, 2009) Moroccan's are more likely to be influenced by the opinions of important others when making sunscreen purchase decisions. In a collectivist society people give more priority to others in decision making to avoid conflicts (Ohbuchi et al, 1999). Alternatively the finding may be due to the fact that young adults are more susceptible to social influence than older adults as they are still establishing their self-identity (Rivis and Sheeran, 2003).

Equally interesting is the finding that price is not a good predictor of sunscreen purchase intention. This seems to directly contradict Foster and Cadogan's (2000) assertion that price is the most important consideration for the average consumer when purchasing products, at least within the context of sunscreen purchase for Moroccans. It also goes against the findings of a number of other sunscreen studies (e.g., Abroms et al. 2003; Loden et al. 2011; Mezaine et al. 2008; Nicol et al. 2007; Otas et al. 2007; Purdue 2002; Robinson, Rigel, and Amonette 2000). One possible explanation for this might be that the majority of respondents to this study were well-educated and computer literate suggesting they were either wealthy themselves or students of wealthy parents and as such may have been less price conscious than other segments of the Moroccan population. Price consciousness refers to the degree to which a consumer focuses exclusively on paying lower prices (Lichtenstein et al., 1993; Tellis and Gaeth, 1990). It has been found that less price conscious consumers have greater price acceptance and less price recall ability (Lichtenstein et al., 1988; Sherif and Nebergall, 1965). Further Gabor and Granger (1961) in a study of grocery prices using 640 housewives found that price consciousness was inversely correlated with income. Alternatively the lack of price sensitivity in relation to sunscreen purchase intent may simply mean that other determinants are more important for young Moroccan adults such as quality or brand name. Previous consumer research suggests that brand name impacts willingness to buy (e.g., Baek et al. 2010; Foster and Cadogan, 2000; Dodds et al. 1991; Erdem and Swait, 1998; Hoyer and Brown, 1990). Whilst it is difficult to find studies that explore the specific relationship between brand name and sunscreen purchase intention, there have been a number of studies that found brand influenced cosmetic purchase intention (e.g., Johri and Sahasakmontri, 1998; Eze et al., 2011). Further Snyder (1989) in an early study found that familiarity with a sunscreen brand name played an important role in consumers' responses to product advertising claims. Claims for familiar brands were more believable and led to more a more positive attitude toward trial of the product. Previous consumer research also suggests that quality perceptions impact purchase intentions (e.g., Carman, 1990; Boulding et al., 1993; Parasuraman et al., 1996; Tsotsou, 2006). Once again it is difficult to find studies that explore the specific relationship between quality and sunscreen purchase intention. However there have been a number of studies that investigated the influence of quality and purchase intention on the related product

of cosmetics. For example Anderson and He (1998) found a number of attributes including quality influenced Chinese consumer's cosmetic purchase decisions. Whereas Eze et al. (2011) found that quality was the most important factor consumers look for when purchasing cosmetic products. Thus quality and brand name may be areas for future research.

7. Managerial Implications

In summary this research suggests that young Moroccan adults who have more favourable attitudes toward purchase of sunscreen, perceive that important others approve of them purchasing sunscreen and perceive they have control over purchasing sunscreen will have stronger sunscreen purchase intentions. From a consumer behaviour and marketing perspective these results may assist Moroccan and other developing country marketing managers develop more effective sunscreen promotional strategies. The finding that a favourable attitude toward sunscreen is important for purchase intention suggests marketers might consider using mass media to promote messages on the advantages of sunscreen for skin protection as opposed to the risks of skin cancer as individuals tend to develop more positive attitudes towards sunscreen if they believe in the positive impact of skin protection (Hillhouse et al., 1997; Heckman and Coups, 2011). The finding that perceived behavioural control impacts sunscreen purchase intention suggests that purchase of sunscreen is seen to be under the volitional control of the individual and therefore promotion of sunscreen purchase in the context of this study should address control beliefs namely purchase opportunity and dependence on others. The contribution of subjective norms as a strong determinant of sunscreen purchase intention suggests that marketing messages should encourage family and friends to persuade those close to them to purchase sunscreen. Finally results suggest that for young Moroccan adults' price does not impact purchase intention and therefore marketers are unlikely to benefit from marketing messages promoting lower prices.

8. Research Implications

The strength of this study is that it represents an important first step in understanding the sunscreen purchase motivations of young Moroccan adults, an area of inquiry in which little is already known (Meziane et al., 2008). This study also confirms the usefulness of the TPB for enhancing understanding of sunscreen purchase intention. Finally this study finds price, a construct thought to predict purchase intention has no predictive value within in the context of young Moroccan adults and sunscreen. This may serve as the foundation for future study.

There are however, a number of limitations to this research. The key limitation is the use of a computer literate, well-educated convenience sample all of whom had an email address. Given there is still a high illiteracy rate amongst Moroccans (Moroccan High Commission for Planning, 2010), it would be desirable for future research to include respondents from the broader Moroccan community, perhaps using a face to face survey method. Another limitation is the possible bias inherent in the use of self-reports of behaviour. Thus future studies that focus on more direct evidence of sunscreen purchase intention may be warranted. An additional limitation was the relatively small sample size. This was offset somewhat by ensuring respondents came from as wide a geographic area as possible. However a larger sample would improve validity. It is also possible that factors related to sunscreen purchase intention that are

not specified by the TPB and price were overlooked given our analysis was limited to TPB and price constructs. However, the TPB was chosen because has been shown in the past to have a high level of predictive power for sunscreen use and thus likely to be a good match for the elements believed to be involved in sunscreen purchase (Hill et al., 1984). Finally, the majority of respondents were young adults. In spite of the advantages of using a sample of this age, young adults may differ from individuals of other ages in important ways that are relevant to the study of sunscreen purchase intention. Thus it would be useful for future research to study other populations in Morocco.

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