

Persuasive Advertising Cause Sin Goods Consumption by Students in Arab Region

الإعلان القائم على الإقناع لاستهلاك سلع الخطيئة من قبل الطلاب في المنطقة العربية

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Abstract:

Objective: This investigation aims to determine whether persuasive advertising outweighs health warnings and sin taxes to entice students to purchase unhealthy products in two Arabian cities in the Middle Eastern Region, such as Amman, Jordan, and Dubai, UAE.

Method: We first expose the participants to audio-visual advertisements of unhealthy goods before asking them to respond to a structured questionnaire. The SEM result indicates that product knowledge and brand expertise significantly increase consumer knowledge of unhealthy products and lure the students into buying them. Results also support that Impulsive buying and materialistic personality traits exacerbate the unhealthy product buying habits of students.

Result: In sum, it implies that mandatory health warnings fail when producers can respond with counterbalancing persuasive advertisements. Surprisingly, perceived sin tax policy intervention does not appear to affect purchasing intent - indicating impulsive buying and materialism among students. The result also allows the government to address budgetary constraints by increasing the sin tax.

Conclusion: The findings have ramifications for consumer policy, especially in safeguarding children and students. Health advisories prove ineffective when manufacturers can counter them with promotional campaigns. Additionally, levying additional taxes on such items has proven futile. Frequently, regulations' intended objectives diverge from their actual outcomes, as is evident in this scenario. Industries exhibit adaptability in navigating mandatory health warnings through compelling advertising cues.

Keywords: Public Health; Sin Taxes; Persuasive Advertising; Sin Goods; Impulsiveness; Materialism; Unhealthy Products; Consumer awareness; Purchase Intention.

الملخص:

الأهداف: الهدف من هذا البحث هو تحديد ما إذا كان للإعلانات المبينة على الإقناع تفوق على التحذيرات الصحية وضرائب الخطيئة لإغراء الطلاب بشراء منتجات الخطيئة في مدينتين عريبتين في منطقة الشرق الأوسط، عمان في الأردن ودبي في الإمارات العربية المتحدة.

المنهجية: تقوم منهجية الدراسة على عرض المشاركين بهذه الدراسة لعدة إعلانات مسموعة ومرئية لسلع غير صحية قبل أن يتم الطلب منهم بالرد على الاستبيان. تم استخدام برنامج النمذجة بالمعادلات البنائية لفهم ومعرفة الظواهر المعقدة والتي أشارت إلى أن المعرفة بالمنتج والعلامة التجارية تزيد بشكل كبير من معرفة المستهلك بالمنتجات غير الصحية لدى الطلاب.

النتائج: أظهرت نتائج البحث أن التحذيرات الصحية الإلزامية لم تنجح في تثبيط دور الإعلانات المبينة على الإقناع للمنتجات غير الصحية ومما يثير الدهشة أن تدخل صناع سياسة الضرائب من خلال زيادة ضريبة الخطيئة على تلك المنتجات لم يظهر أثر على نية الطلاب في المنطقة العربية على شراء منتجات الخطيئة مما يظهر سلوك الشراء المتسرع والتزعات المادية بين الطلاب. وأوصت الدراسة أيضاً على أن على الحكومات معالجة قيودها المالية من خلال فرض زيادة على ضرائب الخطيئة.

الخلاصة: على الحكومات فرض المزيد من الضرائب على منتجات الخطيئة والعمل على تقييد هذه المنتجات من خلال العمل على توعية الأطفال والطلبة بضرر هذه المنتجات والعمل على زيادة هذه الضرائب لدعم الميزانية الحكومية وزيادة الوعي حول دور هذه الضرائب ومعرفة التعامل مع هذه المنتجات رغم مرونة سياساتها التسويقية.

الكلمات المفتاحية: الصحة العامة؛ ضرائب الخطيئة؛ الإعلان المبني على الإقناع؛ بضائع الخطيئة؛ وعي المستهلك؛ نية الشراء النمذجة بالمعادلات البنائية.

1 Introduction

Unhealthy products such as cigarettes, alcohol, carbonated beverages, and fast food (sinful goods/unhealthy products hereafter) are always tricky to market due to their ingrained adverse social consequences (Allcott, Lockwood, & Taubinsky, 2019). Such products are typically thought to be detrimental to society (Carruthers, 2015). Davidson (2013) asserts that marketing and selling such products has been arduous for various reasons. For example, Goal 3 of the UN's Sustainable

Development Goals (SDGs) is: "Ensure healthy lives and promote well-being for all at all ages." It's the responsibility of each country to guarantee minimum standards in public health. Therefore, taxes on such products and regulatory interventions attain significance across markets where sin goods are sold (Colombo, S. Colombo L., & Galmarini, 2018). Similarly, the World Health Organization (WHO) suggested enforcing rigid restrictions on alcohol sponsorship, promotion, and advertising by hiking indirect taxes and pricing policies (WHO, 2021, p. 20). However, numerous empirical studies indicate that consumption of such unhealthy products by youngsters or students has not significantly decreased despite the health warnings provided in the advertisements (e.g., Unger, Effertz, Franke, & Teichert, 2014; Schuster, Zogg, Dent, Stacy, 2003). Effertz et al. (2014) show that a positive visual cue in the advertisement of soft drinks is enough to provoke purchase intention among adolescent students.

From a health communication standpoint, Liu & Bailey (2020) argue that "use cues," "social cues," and "repetitions" accompanying the fast-food advertisement instil and reinforce purchase intention among students. Likewise, Bailey (2017) points out that biological food cues in advertising and packaging alter eating behaviour and motivate students to buy unhealthy fast foods. In another example, Eyal and Te'eni-Harari (2016) carried out a content analysis of Israeli television food advertising to check for the television-obesity link. They discovered that one-fourth of all television advertisements were for candies and sweetened beverages, promoting the economical purchase of the products. Likewise, Signorielli and Lears (2009) establish that television viewing was also associated with unhealthy food perceptions and incorrect knowledge of nutrition principles among fourth and fifth-grade students. Seconding this, prior television experience is found to predict unhealthy food preferences and diets in early adulthood and perceived taste had the most direct relationship to both healthy and unhealthy diets (Harris & Bargh, 2009).

Accordingly, it is integral to also mull over the public health communication aspect of advertising and promoting such unhealthy products.

As a policy measure to dissuade the consumption of such sinful goods, policymakers usually impose a higher tax to inflate the cost of buying them. As a solution, policymakers impose extra cess or surcharge on the cost of unhealthy products. The indirect tax regime in most countries has imposed such extra cess on such goods to unnerve consumption (E.g., Zeeshan, Thayyib, & Ahamad, 2022). John, Dauchy, and Goodchild (2019) uncovered that high GST imposition on tobacco would help impede the consumption of Tobacco in India. However, such imposition of extra taxes does not influence the consumption level either. For example, from a public health benefits perspective, Law et al. (2021) inspected the post-GST changes in purchase intentions of soft drinks in Urban India. Using interrupted time series from 2013 through 2018, the analysis found no significant impact of GST on soft drinks consumption. The research deduces that the high Indian GST tax rate on unhealthy soft drinks was not significantly averting the consumption of aerated drinks. Also, Perez-Moron (2022) shows that these taxes often err to inhibit consumption. Building on the existing literature, most studies connecting the link between cogent counterbalancing advertisements of unhealthy products enhance brand expertise and product knowledge among buyers due to intensive advertising using different audio-visual cues. Such informed literature leads us to ask: How persuasive advertising of sin goods is influencing increased consumption despite marketing restrictions and vice taxes?

The recurring advertisements of unhealthy goods often hinder the objective of government interventions through taxation policies and pricing restrictions (Colombo S. et al., 2018; Effertz, Franke, & Teichert, 2014). The optimal taxation of unhealthy goods and how well such vice taxes affect consumption are vastly scoured reasonably in the academic literature. It is uncommon in the literature to impugn persuasive advertising and related variables that affect purchasing of unhealthy products. In parallel, health communication literature dissecting strategic health messages as to how audio-visual messages contribute to or detract from persuasive efforts is also sparse. This study aims to discern whether persuasive advertising outweighs health warnings

and taxation to entice students to purchase such products in Amman, Jordan, and Dubai, UAE. Therefore, we survey the literature in two ways: (a) sinful products & firms and sin taxes on unwholesome products and (b) the persuasive advertising of sin products and how it stimulates the purchase intention among students in Jordan and the UAE. The central argument of this study is that advertising for sinful products results in more consumption of unhealthy products despite the provision of required warnings. Consequently, we contend that two primary latent constructs spur purchase intent: (1) consumer awareness and (2) personality attributes of the students.

Our research article contributes to the literature in different ways. First, we integrate our model with Ajzen's (1991) Theory of Planned Behaviour (TPB) to assert the unhealthy product buying behaviour of the students. Ajzen (1991) contends that any behaviour constitutes attitude, subjective norms, and perceived behavioural control. Next, to apprehend the attitude of the pupils, our model incorporates personality traits as second-order constructs consisting of (a) Buying Impulsiveness and (b) Materialism. Likewise, product knowledge, brand expertise, and perceived tax policy intervention would encompass the TPB model's subjective norms and perceived behavioural control components. Second, the study surveys the young population in the Middle East, where the indirect taxation system is relatively new. Third, to capture the health communication perspective, we employ the visual persuasion theory of Messaris (1997) to determine whether different audio-visual collocations influence students' consumption of unhealthy products. The study outcome illustrates that sin taxes do not effectively deter consumption. Besides, students' product knowledge, brand expertise, materialistic personality, and buying Impulsiveness are all boosted due to the persuasive advertisement, thus, leading to unhealthy product purchases.

2 Theory and Hypothesis

In general, the optimal taxation of such sin goods and the effectiveness of such vice taxes on consumption are judiciously explored in the literature. However, the studies on the impact of persuasive advertising of sin goods, including perceived tax policy interventions as one of the predictor variables and their effects on consumption, are rare.

2.1 Sinful Firms and Products

Fabozzi et al. (2008, p.85) define sinful firms as "corporations which provide products or services to gratify sin-seeking behavior such as consumption of alcohol, adult services, gaming, tobacco, weapons, biotech alternations." However, the definition of "sins" can vary from one society to another. Therefore, one can assert the definition by linking two major theories (1) social norm theory and (2) theory of organizational stigma. Such firms are socially stigmatized due to their social unacceptability at large. Similarly, the operations of such firms are against social norms.

Oh, Bae and Kim (2016) examined the advertising spending of 'sinful firms' and performance vulnerability and found that sinful firms spend more on Corporate Social Responsibility advertising.

2.2 Persuasive Advertisement and Consumer Awareness

The research so far discovered that persuasive advertisement of sin goods increases consumption among young people. Unger et al. (2003) showed a positive relationship between alcohol brand recall and alcohol consumption among adolescents. Likewise, Waiters et al. (2001) argue that children of all ages enjoy viewing humorous advertisements for all types of beverages and buying soft drinks. Effertz et al. (2014) show that a positive visual cue in the advertisement of soft drinks is enough to provoke the purchase intention. Using an experimental approach, discovered that advertising elements mitigate the effects of warnings on attitudes and purchase intentions. Maclean and Buckell (2021) find that information sources influence the choice of adult e-cigarette smokers in the United States. Chen et al. (2005) found that persuasive advertisement elements (people character, animal character, music, story, and humour) significantly affect adolescent purchasing intention. It also found that Ads that emphasize product quality or the drinking age were rated less favorably and elicited less product desire. Thus, enticing advertising for sinful products may consume evil products despite the mandatory warnings provided. Therefore, we argue that two primary latent constructs trigger purchase

intention. Thus, any advertisement of such sin goods is to increase consumer awareness. At the same time, the actual buying behaviour reflects both *consumer awareness* and the *personality traits* of the buyer.

2.2.1 Consumer Awareness

Consumer awareness of the product has been considered the central construct that would affect the purchasing intention of any product. The awareness is, in general, shaped in different ways. In their review, Elder et al. (2021) demonstrated that tax policy intervention also increases the product's price and prevents consuming sin-goods. We also borrow the theory of planned behavior by Ajzen (1991) as the underlying lens to corroborate the model.

Besides, Effertz et al.'s (2013) two significant constructs: (1) product knowledge (Burton et al. (1999) and (2) Brand Expertise (Kleiser & Manter, 1994), are the two primary second-order constructs affecting the purchase intention.

From a health communication perspective, "use cues" and "social cues" embedded in the advertisement also reinforce the purchase intention amongst students (Liu & Bailey, 2020). Often, product placement and disclosure, along with age, are considered effective (Uribe & Fue-ntesGarcia, 2020). But most ads in the Middle East do not divulge the age-related risks when they promote unhealthy products. Instead, they all focus on increasing brand expertise and counterbalancing advertisements that can activate buying behavior. Hence, the use cues and social cues form social support and subsequent buying decision among students.

2.2.1.1 Perceived Sin Tax Intervention

Despite the wide variety of policy instruments used in practice, the existing literature focuses almost exclusively on taxation. Policymakers often tax more sin goods to discourage public consumption. Such taxes are known as sin or vice taxes (Perez-Moron, 2022). Most governments raise taxes on sinful goods to ease budgetary pressure and crisis. However, empirical evidence shows that such taxes do not intimidate consumption (e.g., Perez-Moron, 2022). From a health viewpoint, Misra et al. (2011) argue that there is an increasing trend of childhood obesity and abdominal obesity among school children in different Urban cities in India. Also, Ranjani et al. (2016) establish that adolescent obesity is higher in North India than in South India. The same study also reports an increasing trend of obese children over the decade. Likewise, Gupta, Kapil, & Singh (2018) found that over 30% of school-aged children in rural Himachal Pradesh, India consume junk foods within 24 hours. It brings about obesity and diet-related diseases among school-going children in India.

In general, sin tax imposition and price increases can discourage the consumption of socially unwelcome products. Such taxes can, at the very least, prevent the purchase intent of students with less pocket money per month (Effertz et al., 2014). John, Dauchy, & Goodchild (2019) argue that high-GST imposition on tobacco would help curb the consumption of Tobacco in India. Cowie et al. (2014) also base that smokers quit smoking due to price hikes. In contrast, John & Dauchy (2020) recently found that the GST transition has helped decrease the price of tobacco products in India. Likewise, Law et al. (2021) found that GST imposition on aerated drinks in India is not significantly changing the consumption pre and post-GST regime. The trend requires comprehensive policy-level intervention and control of products that cause such health issues. Law et al. (2021) checked out the post-GST changes in purchase intentions of soft drinks in Urban India. Using interrupted time series from 2013 through 2018, the analysis found no significant effects of GST on consuming aerated soft drinks. The research deduced that the high GST plus compensation cess tax on soft drinks was not significantly aimed at discouraging the consumption of aerated drinks. Seconding this, Perez-Moron (2022) uncovered that the sin tax is not always effective at deterring unhealthy behavior even though it increases government revenue. Recently, John, Tullu, and Gupta (2022) showed that the Indian tax policy on ASBs has mostly been ineffective in raising the actual retail prices of ASBs, leading to a rise in ASB consumption. They also recommended that ASBs should be taxed like unhealthy products like tobacco and alcohol. They propose that sin tax should go up enough to keep up with both general price inflation and income growth, making them less affordable.

Extending the consumer socialization construct of Effertz et al. (2014), this theoretical model also embodies the perceived tax policy intervention that would impact purchase intention (Law et al., 2021). By treating taxing policy awareness as a part of consumer awareness, we assume that tax increase on unhealthy goods does discourage their purchase intention.

2.2.1.2 Product Knowledge

Information flow to the markets becomes the primary determinant of welfare and public health knowledge. The scientific information about the product leads to positive health behavior (Ippolito & Mathios, 1991). Moorman and Matulich (1993) found that health ability is developed through health knowledge and communication, resulting in restrictive health behaviors. Product knowledge is the second most crucial variable that makes up consumer awareness (Effertz et al., 2014). Product knowledge demonstrates an accurate comprehension of the nutritional value of the product. In this case, the buyer learns that long-term consumption of sinful products results in serious health consequences. For example, Burton et al. (1999) exhibit how nutritional information on the package guides buying products. Similarly, Li, Miniard, and Barone (2000) find that the trial intention of a consumer increases as their daily value reference knowledge increases. Teisl, Levy, and Derby (1999) also that education and information sources play an integral role in increasing consumer awareness of diet-disease relationships. Sometimes, peer communication (social norms in TPB theory) influences alcohol consumption among students (Carey et al., 2016). However, Effertz et al. (2014) found that product knowledge did not exert any significant impact on the purchase intention of the unhealthy product.

2.2.1.3 Brand Expertise

Brand expertise correlates with brand selection and purchase (Kleiser & Mantel, 1994). Vieseli and Shaw (2010) proposed a knowledge, media consumption, and brand image model as antecedents of brand salience. By quasi-experimental design, respondents were asked to freely recall brands using category cues, followed by multi-item assessments of brand knowledge, brand associations, and purchase behavior. A SEM analysis of the data supported an empirical model of brand salience, positing a correlation between brand salience and purchase probability. On the other hand, in order to evaluate brand knowledge, a subset of the brand expertise scale items developed by Kleiser and Mantel (1994) was applied. It was done so that the brand expertise could be measured. Effertz et al. (2014) have not evidently shown the effect of brand expertise in predicting the purchase intention of adolescents. Putting all of the antecedents of consumer knowledge together, we hypothesize that:

H1: Perceived sin tax intervention to discourage public consumption of unhealthy products affect the purchase intention of students.

H2: Product knowledge significantly persuades students to buy unhealthy products.

H3: Brand Expertise significantly persuades students to buy unhealthy products.

2.2.2 Personality Traits

In addition, pertinent personality assessments were also carried out to comprehend the purchasing behaviour of consumers. Here, these were the materialistic beliefs and their Impulsiveness leading to purchase decisions.

2.2.2.1 Buying Impulsiveness

Advertisements, in general, can result in adolescents making riskier decisions if they have not yet learned how to control their emotions (Figner & Weber 2011). Impulsive buying is when a customer buys something without thinking it through first (Zhang, Winterich, & Mittal, 2010). Ochsner and Gross (2005) and Schreiber et al. (2012) point out that positive emotions elicited by advertisements should be more significant for younger recipients when potential health risks are not adequately disclosed, as they stimulate uncontrolled and impulsive decision-making. The well-established Buying Impulsiveness Scale developed by Rook and Fisher (1995) was used to estimate the children's propensity to make purchases without prior consideration. From a health perspective, Chang (2007) discover that high school students possess self-smoker image congruency among "smoking" students. Self-smoker image congruency was higher for smokers than for non-smokers; hence, attitudes toward cigarette advertising were linked to this. By previous literature, such smokers consider that smoking is more masculine, adventurous, pleasure-loving, and sociable. Hence, unhealthy cigarette buying decisions often become impulsive and irrational.

2.2.2.2 Materialism

Materialism is another personality trait that influences the purchasing behaviour of consumers (Moschis & Churchill, 1978). Materialism is a desire for wealth and material possessions without regard for moral or spiritual matters (Buijzen & Valkenburg, 2003). Effertz et al. (2014) report that a higher level of materialism increased unhealthy food purchase intention among adolescents. However, the co-variate exhibited a weak

influence on explaining the purchase intention. We measured the materialistic attitude of students using Moschis and Churchill's (1978) scale. In the context of consumer socialization, this scale was especially tested with adolescents.

H3: Buying Impulsiveness makes students purchase unhealthy products.

H4: Materialistic personality of students makes students buy unhealthy products.

Summing up, all of the theoretical and literary support led us to develop this model below:

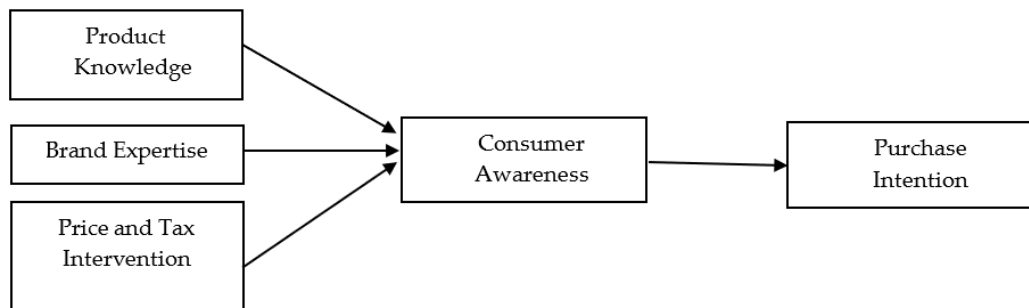


Figure (1): Hypothesized Model

3 Materials and methods

To investigate the direct influence of Consumer Awareness (product knowledge, brand expertise, and perceived tax policy intervention) and Personality Traits (buying Impulsiveness and materialism) on unhealthy products purchase intention of students, a model is developed to investigate the direct relationship between consumer awareness and personality traits on purchase intention.

3.1 Survey Design and Pilot Testing

The survey contained three phases. Like Effertz et al. (2014), the first phase was an experimental step wherein an advertisement (both audio-visuals and printed advertising with warnings) of sin goods was shown to the respondents. In the next step, a questionnaire meant to capture (a) demographic details such as age, gender, and pocket money per month and (b) measure six latent variables as identified by the literature survey. Before conducting the primary survey, we conducted two-phase piloting to improve the reliability of the survey instrument (Saunders et al., 2009). First, the survey instrument was reviewed by students (10 from each city) and five researchers with expertise in marketing, indirect taxes, and health communication. According to their recommendations, contextualization and subjectivity modifications were made to the language and content of scale indicators. Second, a pilot study involved 58 students from both countries. Pilot data statistical validation confirmed that the scale items exhibited sufficient internal consistency and loading under the respective constructs.

3.2 Main survey

To test this theoretical model, the research examined students in the city of Dubai, UAE, and Amman, Jordan. We preferred the random sampling method for data collection. Respondents were contacted near the surroundings of pubs, nightclubs, and entertainment destinations. Only 341 out of the 1203 students who received the questionnaires responded appropriately to the survey.

3.3 Survey Design & Measures

Like Effertz et al. (2014), the first phase consisted of an experimental step in which respondents were exposed to advertisements for unhealthy goods (both audio-visual and printed advertisements with warnings). The survey instrument was developed by adopting multiple-item scales from published articles using a 5-point Likert-type scale (1 = Strongly Disagree; 5 = Strongly Agree).

The study used six latent variables: consumer awareness, a second-order variable measured by product knowledge, perceived tax policy intervention, and brand expertise. Product knowledge, brand expertise, personality, and perceived tax policy interventions are the model's main predictors, directly predicting one

outcome variable: purchase intention. To measure purchase intention, which is the dependent variable, we modified the scale of Baker and Churchill (1977) that suits the context of sin-goods purchase intention. In contradiction to Effertz et al. (2014), we renamed consumer socialization as consumer awareness with three sub-constructs: Product Knowledge, Brand Expertise, and perceived tax policy intervention. We adopted the scale Burnton et al. (1999) for product knowledge. Likewise, Kleiser and Mantel (1994) developed a scale to understand the brand expertise of consumers; thus, we made necessary changes to the scale to suit the context of the model. Following the review of Elder et al. (2021), we formulated the measure of a perceived tax policy intervention. We cited Moschis and Churchill (1978) to measure the Materialistic attitude of the youngsters. Similarly, the personality trait of buying Impulsiveness (three items) was adopted from Rook and Fisher (1995) and Effertz et al. (2014).

Table (1): Description of Variables and Factors

Factor/Construct	Source	Items/Indicator	Loading Factor	Cronbach's Alpha	
Dependent variable	Purchase Intention	(Baker & Churchill, 1977)	I would support The consumption of this product.	0.813	0.87
			I would like to try this product.	0.879	
			I would buy this product if I happened to see this at a store	0.801	
			I would out seek actively these products to purchase them.	0.853	
Consumer Awareness	Product Knowledge	(Effertz et al., 2014; & Teisl et al., 1999)	I clearly know that this product is harmful to my health and wellbeing.	0.671	0.84
			Compared to others, I am reasonably informed about this product.	0.812	
			Consumption of this product can cause serious negative consequences Long-term.	0.873	
	Brand Expertise	(Kleiser & Mantel, 1994)	I automatically know which brands of these products to buy.	0.751	0.86
			Without much effort, I can identify my brand at the store.	0.770	
			I know most of the existing brands of these products.	0.801	
			I can recognize all of the brands of these products.	0.821	
	Tax Policy Intervention (Perceived)	(Elder et al., 2021)	I know that these products are costly.	0.721	0.82
			Government imposes additional taxes to the discourage consumption of these products.	0.752	
			I anticipate that the price of these products would go further up.	0.793	
Personality Traits	Materialism	(Moschis & Churchill, 1978)	Indeed, money can buy happiness.	0.674	0.81
			My dream in life is to own expensive things	0.681	
			I buy some things hoping to impress others.	0.813	

Buying Impulsiveness	(Rook & Fisher, 1995)	Others judge me based on the products and brands I use.	0.802	0.83
		Sometimes, I feel like buying things head over heels.	0.821	
		I often buy products without even thinking	0.813	
		I carefully plan most of my purchases.	0.641	

3.4 Data Screening

Since the questionnaire contained personal and sensitive questions about the respondents, the majority of the respondents hesitated to fill the form out accurately. Thus, we got only less response rate of 34% out of 1003. The raw data were inspected for missing, improper, and outlier values before conducting statistical validation analyses. Sixteen questionnaires with missing responses were eliminated from the sample. The authors also checked for disengaged responses and identified eight responses that fell into this category. The results of Cook’s distance test for statistical outlier observation showed that ten responses exhibited Cook’s statistics above the threshold of 1 (Stevens, 2012); thus, they were also excluded from the data, and the study obtained its final sample of 307 responses See Table (2) below.

Table (2): Respondent’s Demographic Profile (N = 307)

Demographic variable	Frequency	Percentage (%)
<i>Age</i>		
< 15 (High School)	70	22.80
15-19 (Intermediate)	156	50.90
19-25 (College)	81	26.30
<i>Gender</i>		
Male	218	71.00
Female	89	29.00
<i>Pocket Money/Month (In JOD)</i>		
0-50	117	38.10
50-100	104	33.90
>100	86	28.00

3.6 Dealing with Method Bias

The study used the full-collinearity test (Kock, 2015) to determine whether it suffers from method bias, even though it adhered to the qualitative checks and measures recommended by Podsakoff et al. (2012) when developing the survey instrument. All variables (predictors) should be turned into outcome variables (Kock, 2015), who also advises that VIFs should never be higher than 3.3 in any model. We conducted multiple regression analyses and discovered that the VIFs for each variable in each model was less than the threshold of 3.3, indicating that there were no potential method biases in the data (Kock, 2015).

4 Results

4.1 Measurement Model

The study’s conceptual framework comprises six latent constructs, including a second-order construct. Therefore, it is necessary to validate the reflective measurement model’s fitness, reliability, and validity, namely convergence and divergence (Kline, 2015). The hypotheses regarding the direct effects were then evaluated using a SEM model. AMOS (v.23) software was used to draw and run CFA and SEM models. CFA and SEM global fit indices were observed to be well above thresholds, see Table (3).

Table (3): CFA and SEM Model Fit Indices

Model	CMIN/DF	GFI	TLI	CFI	RMSEA
CFA Model (first-order)	1.806	0.932	0.980	0.984	0.052
CFA Model (Secondorder)	1.901	0.929	0.972	0.967	0.041
Recommended Value	Acceptable 14 (Wheaton, 1987)	≥0.90 (Shevlin & Miles, 1998)	≥.95 (Hu & Bentler, 1999)	≥0.95 (Hu & Bentler, 1999)	<0.07 (MacCallum et al., 1996)

In addition to global fit indices, the measurement model verifies convergent and divergent validity and scale internal consistency (Kline, 2015). The study confirms the measurement model’s (first and second-order models) convergent validity using CFA loadings and Average Variance Extracted (AVE). A construct holds good when the average standardized CFA loading is at least 0.708 and AVE (squared value of average CFA loading) is at least 0.50 (Hair et al., 2006; Henseler et al., 2009). Table 4 confirms that average CFA loading and AVE values for each latent construct (at first and second-order levels) are well above the cut-off limits, and the study’s measurement models converge.

Moreover, Cronbach’s alpha and composite reliability were utilized to determine the internal consistency of the measurement scales (CR). Cronbach’s alpha and CR statistics (See Table 4) for each latent variable were also greater than 70 (Bagozzi & Yi, 1988; Hair et al., 2006). Moreover, all the scales used to capture latent constructs demonstrate sufficient internal consistency with Cronbach’s alpha (α) and composite (CR) reliability values exceeding the 0.70 thresholds (Stevens, 2012).

Table (4): CFA loadings, Cronbach’s alpha, CR, and AVE

Variable name	No. of items	Avg CFA Loading	Alpha (α)	CR	AVE
Purchase Intention	4	0.80	0.87	0.87	0.64
Consumer Awareness (second-order construct)	–	0.80	0.80	0.81	0.65
Product Knowledge	3	0.79	0.84	0.85	0.62
Brand Expertise	4	0.83	0.86	0.87	0.69
Perceived Tax Policy Intervention	3	0.82	0.83	0.84	0.68
Personality (second-order construct)	–	0.85	0.85	0.86	0.68
Materialism	4	0.84	0.81	0.82	0.70
Buying Impulsiveness	3	0.78	0.83	0.84	0.61

Note. AVE: Average Variance Extracted; CR: Composite Reliability

Before proceeding with the hypothesis testing using SEM, the study also determined the divergent validity of the model using Fornell and Larcker’s (1981) methodology. According to Fornell and Larcker’s (1981) approach, a latent variable is sufficiently divergent when its average CFA loading (square root of AVE value) is more significant than off-diagonal correlation coefficients, Table (5), bold values on the diagonal) (Chin et al., 1997). Statistics displayed in Table 4 confirm that on diagonal bold values (average CFA loading of each latent construct) are significantly higher than off-diagonal correlation coefficients, indicating that the measurement model has sufficient divergence (Chin et al., 1997). Table (6) also provides descriptive statistics, including every latent variable’s mean and standard deviation. The correlations between latent constructs are consistent with the hypotheses.

Table (5): Descriptive Statistics, Correlations, and Divergent Validity

Variable name	M	SD	PI	TPI	PK	BE	MAT	BI	Buying Impulsiveness
Purchase Intention		5.13	.801	.801					
Perceived Tax Policy Intervention		4.88	1.09	.402**	.829				
Product Knowledge		5.11	1.16	.481**	.447*	.807			
Brand Expertise		4.95	1.44	.473**	.508**	.331**	.852		
Materialism		4.66	1.20	.495**	.542**	.411**	.518**	.840	
Impulsiveness	4.60	1.33	.428**	.459**	.307**	.296**	.381**	.785	

Note: **Correlation is significant at the 0.01 level (2-tailed); **M** = Mean; **SD** = Standard Deviation **PI** = Purchase Intention; **TPI** = Perceived Tax Policy Intervention; **PK** = Product Knowledge; **BE** = Brand Expertise; **MAT** = Materialism; **BI** = Buying Impulsiveness.

4.2 Hypotheses Testing

The study ran an SEM model to test the hypotheses related to the direct effect of the predictor variable, consumer awareness of sinful goods, and personality traits of the students against the outcome variable, purchase intention. The study probes the direct effect of Consumer Awareness (Hypotheses H1 and H3) and Personality Traits (Hypotheses H4 and H5) on Purchase Intention (PI). We used SPSS and AMOS 21.0 to test our hypothesis. In the SEM model, we also examined the control effects of age, gender, and monthly pocket money, but none significantly affected the outcome variable. The results from Table 5 indicate that perceived tax intervention does not substantially discourage student’s purchase intention ($\beta = 0.068$; p -value > 0.05). Hence, the H1 has been rejected. In contrast, product knowledge ($\beta = .554$; p -value < 0.01) and brand expertise ($\beta = 0.382$; p -value < 0.01) constituting consumer knowledge construct are significantly increasing the purchasing intention, henceforth; supporting hypotheses H2 and H3. Similarly, Materialistic ($\beta = 0.677$; p -value < 0.01) and Buying Impulsiveness ($\beta = 0.288$; p -value < 0.05) personality trait was also found to be statistically significantly increases purchase intention, thus extending support to hypotheses H4 and H5.

Table (6): Structural Model Result

Hypothesis	Estimate	SE.	CR.	P	Decision
H1: PT - IPI	0.068	0.041	1.65	$p > 0.05$	Not Supported
H2: PK - PI	0.554	0.046	12.04	***	Supported
H3: BE - PI	0.382	0.042	9.09	***	Supported
H4: MAT - PI	0.677	0.045	15.04	***	Supported
H5: BI - PI	0.288	0.049	5.89	**	Supported

SE = Standard Error, CR = Critical Ratio, *** $p < 0.01$, ** $p < 0.05$; $\chi^2 = 1.806$, CFI = 0.984, GFI = 0.932, RMSEA = 0.052.

5 Results and Discussion

We performed Structural Equation Modelling (SEM) to measure the purchase intention as the dependent variable to determine how much each predictor variable affected the outcome. 307 observations were shown in audio-visual advertisements of unhealthy products first. Next, a well-structured questionnaire adopted from different sources was distributed and analyzed. The study strived to measure the effect of different advertisements (both audio-visuals) on the purchase intentions of young students in the city of Amman, Jordan, and Dubai, UAE. The study assumed that the extensive consumer awareness (proxied through product knowledge, brand expertise, and perceived tax policy intervention) and personality traits (proxied through buying impulsiveness and materialistic attitude) on purchase intention. As expected, the students know that a substantial amount of additional taxes are included in the purchase price of the unhealthy goods they purchase. In addition, the students anticipated that the price would increase further. However, this does not affect their purchasing intention. It must be due to their impulsive behavior when they see such products. Thus, H1 of the

relationship between perceived tax policy intervention and buying choice does not hold true. The finding supports the empirical discovery of Perez-Moron (2022). This result suggests that increasing taxes to discourage sinful tax consumption has not been adequate among Middle Eastern students. However, this result shows no control effect on the student's age, gender, and monthly pocket money.

Persuasive advertisements appear to significantly impact consumer knowledge, despite the health warnings provided in the advertisement itself. Evidence suggests that most respondents knew the adverse effects of the products ($M=5.11$ and $SD =1.16$). Still, they have not changed their plans to buy sinful products. The relationship worked out well, just like it does for other products. This shows that, similar to the views of Burton et al. (1999), the persuasive advertising and product knowledge thus created works well to prompt purchase intention among the students. Similarly, the brand expertise also turned out to be influencing unhealthy buying. It indicates that the students can easily recall the brands they would purchase if they were to buy unhealthy products for diet or leisure purposes. Again, respondents are familiar with most brands in these product categories. Thus, it suggests that neither the restrictive health behavior mentioned by Moorman and Matulich (1993) nor the positive health behavior of Ippolito and Mathios (1991) is present among students. If we now consider the effect of brand expertise on purchase intent, we find that it had a positive and significant impact, reiterating that persuasive advertising "cues" have effectively generated purchase intent. This finding replicates the result of Kleiser and Mantel's (2010) and Vieseli and Shaw's (1994). As shown in the beverage experiment, making students aware of the link between diet and disease [(See Teisl et al., 1999)] did not work here either. The findings imply that all advertising for these irreverent products must be immediately curtailed in the best interest of the public. At the very least, policymakers must ensure that products come with a clear warning that makes students less likely to buy them. Student personality traits are another vital factor affecting their decision to purchase sinful products. The results indicated that both impulsive buying behavior and materialistic personality significantly increase the purchasing intent. Materialistic and impulsive students tend to disregard the health warnings and negative consequences of unhealthy products and consume them anyways. The previous literature by Moschis and Churchill (1978) and Rook and Fisher (1995) support this finding.

Our findings provide implications for consumer policy, especially for protecting children and the student population. Health warnings fail when producers can respond to mandatory warnings by creating counterbalancing advertisements. Adding to it, imposing extra taxes on such products has also not been of help. Often, the intended purpose and the actual result of regulation are quite different; this is the case here. The industries are flexible in dealing with mandatory health warnings with persuasive advertising cues. The findings could also explain why the results in the warning literature aren't entirely consistent with one another. Disentangling the warning from the other components of the advertisement, such as by broadcasting it in advance or allocating the warning an appropriate space in print media, is one of the possible mechanisms that could be used to ensure that warnings are adequate. Other mechanisms include: This course of action constitutes the primary recommendation from our investigations, and those in charge of making decisions regarding public health matters should investigate it in greater depth. King, Niederdeppe, and Dahl (2021) recommend retaining visual juxtaposition examples in soft drink advertising, which consist of two images placed next to one another in a single visual presentation, to improve public communication of the health risks associated with unhealthy products. Likewise, Uribe and Fuentes-Garcia (2020) uncover that product placement disclosure and promotion increase the awareness and recall of the unhealthy aspects of fast foods. Disclosure of age restrictions in advertisements and on-product labels can help combat this unhealthy consumption behavior among students. From a revenue viewpoint, the government can alleviate the budgetary pressure and crisis by increasing sin taxes to the optimal level and treating them as an additional revenue source. This result also provides ample room for future research on the optimal sin tax structure. Law et al. (2021) highlight that no comprehensive analysis exists on the relationship between GST/indirect reforms, industry practices, and individual behavioral choices. Thus, it also highlights room for further research to examine the impact of indirect tax reform reforms on public health services.

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