

# Country-of-origin product image and willingness to purchase vitamin supplements

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This article investigates the country-of-origin (COO) product image consumers hold with regard to vitamins which they perceive to originate from different countries as well as their willingness to purchase vitamins that originate from these countries. Results indicate that respondents consider the COO product image of vitamins originating from South Africa and USA equally favourably, but more favourably than Chinese vitamins. Respondents are also more willing to buy vitamins originating from South Africa than those originating from USA or China. The study also found moderate to strong correlations between the COO product image and the willingness of respondents to purchase vitamins originating from each country.

## Land-van-oorsprong produkbeeld en bereidwilligheid om vitamie te koop

Hierdie artikel ondersoek die land-van-oorsprong (LVO) produkbeeld wat verbruikers hou van vitamie wat hulle meen van verskillende lande af kom. Die bereidwilligheid van verbruikers om vitamie wat van hierdie lande afkomstig is te koop, word ook ondersoek. Resultate dui daarop dat die LVO produkbeeld vir vitamie wat respondente meen van Suid-Afrika afkomstig is ewe gunstig is as die wat hulle glo van die VSA afkomstig is, maar baie meer positief is as vitamie wat hulle meen van China afkomstig is. Respondente is ook meer bereidwillig om vitamie te koop wat hulle meen van Suid-Afrika afkomstig is, as die wat hulle dink van die VSA en China afkomstig is. Die studie het ook korrelasies gevind tussen die LVO produkbeeld en die bereidwilligheid van verbruikers om vitamie te koop wat van die onderskeie lande afkomstig is.

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Competition among businesses operating in international markets is intensifying due to the rapid growth in international trade. This has led to international marketers needing an ever-expanding selection of instruments and constructs to enable them to suitably position their market offerings and compete successfully in competitive international markets (Klein *et al* 1998: 97). Country-of-origin (COO) is viewed as one such construct that plays an important role in international marketing. Laroche *et al* (2005: 97) state that consumers consider the origins of products important in their decision-making, with substantial implications for marketers on a strategic level both locally and internationally. Businesses operating in these highly competitive markets must take cognisance of their customers' perceptions of products which they believe originate from foreign markets (Ahmed & d'Astous 2008: 76).

Wang & Chen (2004: 391) state that markets are opening up worldwide. This explains the fact that consumers now have a greater product choice. Consequently the attitudes and perceptions of consumers towards foreign product choices have become essential research topics. Although numerous studies have been published on consumer perceptions and behaviour in relation to COO in general (Bhaskaran & Sukumaran 2007: 66), this article focuses on one product category, namely vitamins.

This article aims to determine the COO product image consumers in a developing country such as South Africa hold of vitamin supplements (vitamins) originating from their home country as well as from China and the USA. South Africa was chosen since it is the home country of respondents participating in the survey. The USA and China were chosen to represent a developed country and a developing country, respectively. In addition, this article determines consumers' intention to purchase (willingness to buy) vitamins which they perceive originate from these countries and whether consumers with a positive COO product image are also more willing to buy vitamins that originate from the abovementioned countries, respectively.

## 1. Theoretical background

### 1.1 Vitamin industry in South Africa

Vitamins are organic chemicals used by human beings to supplement their daily dietary intake requirements in order to improve their metabolism and overall health (Whitney & Rolfes 2005: 16). Vitamins are commercially available in the form of pills, capsules, tablets, liquids and powders (Whitney & Rolfes 2005: 16). The vitamin industry supplies a large number of different product permutations represented by many different brands (Narayana & Markin 1975: 1). In South Africa many of these products are available at pharmacies, health shops and grocery stores.

In 2005, the vitamin and dietary supplement industries in South Africa were worth an estimated R534 million. Vitamin sales increased rapidly over the past 30 years and will continue to do so (Berry 2007). An annual growth of 9% is forecast for the industry until 2010. This increase can primarily be ascribed to the trend in healthier living and the fact that these supplements have become more affordable. It is also spurred on by an ever-expanding middle class and a rise in income levels in South Africa (Berry 2007).

### 1.2 Country-of-origin

According to Kim (2006: 127), the country-of-origin (COO) effect of a product refers to the country whence consumers think a product originates. When consumers are faced with a choice between products, COO is often considered an important intangible extrinsic cue used to evaluate the choice of both low- and high-involvement products (cf Peterson & Jolibert 1995: 884, Ahmed *et al* 2004: 114, Khan & Bamber 2007: 24). Although Piron (2000: 317) mentions that intrinsic cues such as reliability and performance play a more significant role in consumer decision-making than COO, international marketers rely on COO as an extrinsic cue necessary to produce a desired image and attitude (Ahmed *et al* 2002: 294). This article found that a favourable COO product image compensates for a weak brand since consum-

ers who hold a favourable attitude towards a product will evaluate product quality favourably (Ahmed *et al* 2002: 295).

Studies on the topic of COO also indicate significant differences between different groups of respondents from the same sample.<sup>1</sup> Schaefer (1997: 68) reports that knowledgeable consumers are more prone to use COO as an extrinsic cue than less knowledgeable consumers. Ahmed & d'Astous (2004: 196) found, for instance, that demographic characteristics such as age and marital status influence the evaluations of COD and COA of Chinese consumers. Khan & Bamber's (2007: 31) study found demographic differences based on education level regarding the influence of COO patterns on the purchase of luxury goods. Chryssochoidis *et al* (2007: 1541) found differences in the evaluation of products among respondents based on a demographic characteristic, namely age, in their study on ethnocentric beliefs and the COO effect.

### 1.3 Role of COO in consumer decision-making

Many researchers view COO as a salient variable that not only affects a consumer's attitude towards a product, but is also a key determinant of consumer decision-making.<sup>2</sup> Phau & Suntornnond (2006: 39), for instance, found that COO has a strong direct influence on a consumer's decision-making. Chattalas *et al* (2008: 55) profess that the strong influence of the COO effect is irrefutable, given the mere fact that consumers would, for example, purchase a bottle of French champagne instead of a bottle of Austrian champagne, even though the former is much more expensive.

Some researchers are of the opinion that other factors play a stronger role in influencing attitude and consumer decision-making (Bhaskaran & Sukumaran 2007: 75). The purchase behaviour of consumers is grounded in their beliefs and evaluations regarding a product. According to Wang & Chen (2004: 399), patriotism or ethnocentric preference plays an important role in product choice. Ahmed *et al*

1 Cf Schaefer 1997, Ahmed & d'Astous 2004, Kahn & Bamber 2007, Chryssochoidis *et al* 2007.

2 Cf Bilkey & Nes 1982: 89, Al-Sulaiti & Baker 1998: 151, Bhaskaran & Sukumaran 2007: 75, Yasin *et al* 2007: 40.

(2004: 114) found that consumers of food products in Singapore prefer the 'Made in Singapore' label above any other. Although the relative strength of COO as a variable influencing consumer decision-making could be argued, COO exerts some influence on consumer decision-making. COO is increasingly gaining importance in a consumer's evaluation of products since s/he faces an increasing choice of products (Sohail 2005: 92, Yasin *et al* 2007: 40).

Sohail (2005: 92) indicates that consumers also consider COO in evaluating products in many different and varied product categories. Consumers also perceive products from developed countries more positively than products originating from developing countries (Ahmed & d'Astous 2004: 196, Sohail 2005: 92). Products produced in less developed countries are perceived to be more risky than those produced in developed countries (Laroche *et al* 2005: 97).

In a study conducted in Bangladesh, Kucukemiroglu & Hyder (2000: 123) found that COO significantly influences the product conceptions of consumers in a developing country. These consumers place greater emphasis on COO and their perceptions vary from one product category to another, as is the case in developed countries (Kaynak *et al* 2000: 123).

Sohail (2005: 92) mentions that since limited research has been conducted on the influence of COO on consumers in developing countries, it remains to be seen whether findings from studies in developed countries can be generalised to developing countries. As wider product choice becomes the norm in many developing countries, Essoussi & Merunka (2007: 423) argue that understanding the effects of COO in these countries (such as South Africa) will become increasingly important to international marketers.

A study by Michaelis *et al* (2008: 416) found that COO cues play an important role in terms of initial trust when an international marketer initially enters a host market. Over time, the role of these cues will diminish as the international marketer establishes itself (Michaelis *et al* 2008: 416).

### 1.5 Marketing strategies to improve COO product image

Schaefer (1997: 68) proposes that a positive COO could be used to great effect to position a new product, while a negative COO could adversely influence the success of a new brand. Consequently, marketers should focus on COO if the COO is positive, but should not provide customers with the COO cue if it is not positively perceived (Piron 2000: 317, Ahmed *et al* 2004: 114). However, Kim (2006: 136) warns that this strategy is not ideal in the long run.

Ahmed *et al* (2004: 114) point out that dealing with a less positive COO product image is difficult, and remedying the situation will take substantial effort over the long term. A strategic alliance could therefore be considered with a partner who has a more favourable COO product image. The operations and the processes of the partner could then be adopted and the alliance could be promoted to establish a more positive brand image (Ahmed *et al* 2004: 114).

Ahmed & d'Astous (2004: 196) suggest that international marketers from a country with a less favourable COO product image could also employ a pricing policy that promotes exclusivity. They also suggest that claiming that product satisfaction is guaranteed could also help to overcome the less favourable perceptions of consumers.

In terms of marketing products in a developing country, Kaynak *et al* (2000: 1238) propound that international marketers should aim products originating from countries with less favourable COO product images towards the middle and lower end of the market, while products from countries with a more favourable COO product image should be aimed towards the higher end of the market. Khan & Bamber (2007: 31) report the following findings regarding the role of COO information in an emerging market (Pakistan) in a segment at the higher end of the market:

- Consumers depend on COO information when they buy a product with which they are not so familiar.
- COO information may also be used when high-risk products are purchased.
- COO information plays an important role when expensive or luxury items are bought.

- COO information is not really important when an inexpensive product is bought.

## 2. Problem statement, objectives and research hypotheses

### 2.1 Problem statement

Due to limited research on the influence of COO among South African consumers, the following problem statement was formulated: Do South African consumers view vitamins from developing countries less positive than those from developed countries? Do South African consumers view vitamins from their home country more favourable compared to foreign products? Are South African consumers more willing to purchase South African vitamins compared to products from the USA and China?

### 2.2 Objectives

To determine and compare the COO product image held by consumers of vitamins which they perceive to originate from South Africa, China and the USA, respectively. To determine and compare consumers' willingness to purchase vitamins which they perceive originate from South Africa, China and the USA, respectively. To determine whether there are significant differences between different groups (gender, age, level of education, level of usage, reasons for purchasing, and purchase outlets) of consumers with regard to COO product image and willingness to purchase vitamins. To determine whether there are significant links between the COO product image and the willingness to buy vitamins.

### 2.3 Hypotheses

The following null hypotheses are formulated for this study:

- $H_0$  1: The COO product images held by consumers regarding vitamins presented to them as originating from South Africa, China and the USA are not significantly different.

- $H_0 2$ : Different groups of consumers do not differ significantly with regard to their COO product image regarding vitamins presented to them as originating from South Africa, China and the USA.

For further refinement, the latter hypothesis can be subdivided into the following:

- $H_0 2_a$ : Males and females do not differ significantly in terms of their COO product image regarding vitamins presented to them as originating from South Africa, China and the USA.
- $H_0 2_b$ : Younger consumers do not differ significantly from older purchasers in terms of the perceived COO product image they hold regarding vitamins presented to them as originating from South Africa, China and the USA.
- $H_0 2_c$ : Consumers with different levels of education do not differ significantly in terms of their COO product image regarding vitamins presented to them as originating from South Africa, China and the USA.
- $H_0 2_d$ : Light users of vitamins (those taking vitamins once or less than once a week) do not differ significantly from heavy users (those taking vitamins two to three times a week or more often) in terms of their COO product image regarding vitamins presented to them as originating from South Africa, China and the USA.
- $H_0 2_e$ : Consumers who purchase vitamins for different reasons (to improve health, to increase energy, prescribed by doctor and to supplement a diet) do not differ significantly in terms of their COO product image regarding vitamins presented to them as originating from South Africa, China and the USA.
- $H_0 2_f$ : Consumers who purchase vitamins from different outlets do not differ significantly in terms of their COO product image regarding vitamins presented to them as originating from South Africa, China and the USA.
- $H_0 3$ : Consumers do not differ significantly in terms of their willingness to purchase vitamins presented to them as originating from South Africa, China and the USA.



- $H_0 4$ : Different groups of consumers do not differ significantly in terms of their willingness to purchase vitamins presented to them as originating from South Africa, China and the USA.

For further refinement, the latter hypothesis can be subdivided into the following:

- $H_0 4_a$ : Males and females do not differ significantly with regard to their willingness to purchase vitamins presented to them as originating from South Africa, China and the USA.
- $H_0 4_b$ : Younger consumers do not differ significantly from older purchasers in terms of their willingness to purchase vitamins presented to them as originating from South Africa, China and the USA.
- $H_0 4_c$ : Consumers with different levels of education do not differ significantly in terms of their willingness to purchase vitamins presented to them as originating from South Africa, China and the USA.
- $H_0 4_d$ : Light users of vitamins (those taking vitamins once or less than once a week) do not differ significantly from heavy users (those taking vitamins two to three times a week or more often) in terms of their willingness to purchase vitamins presented to them as originating from South Africa, China and the USA.
- $H_0 4_e$ : Consumers who purchase vitamins for different reasons (to improve health, to increase energy, prescribed by a doctor and to supplement a diet) do not differ significantly in terms of their willingness to purchase vitamins presented to them as originating from South Africa, China and the USA.
- $H_0 4_f$ : Consumers who purchase vitamins from different outlets do not differ significantly in terms of their willingness to purchase vitamins presented to them as originating from South Africa, China and the USA.
- $H_0 5$ : There is no significant relationship between the COO product image held by consumers regarding vitamins presented to them as originating from South Africa, China and the USA and their willingness to purchase these vitamins.

### 3. Methodology

#### 3.1 Sample

The target population for the study included individuals who purchase vitamins for themselves and/or members of their household in the North-West Province of South Africa. Two-stage non-probability sampling was used to select the respondents from the target population. Quotas based on population group and family-life cycle stage were first established to ensure that the target population is representative of the population under study. A mall intercept method was used to collect data. In total, 865 useable questionnaires were collected for analysis.

#### 3.2 Data collection

An interviewer-administered survey was used to collect data from respondents. Structured questions were used to elicit responses. The questionnaire measured “COO product image” and “willingness to buy” vitamins perceived to originate from South Africa, China and the USA, respectively.

#### 3.3 Measuring instrument

The questionnaire consisted of three main sections. The first section served as an introduction, as it explained the intent of the survey. Screening questions were subsequently posed to ensure that only respondents who purchase vitamins for their own consumption or for that of others in the household participated in the study. The next section determined the demographic profile of the respondents as well as their vitamin consumption preferences. The final section of the questionnaire included multiple-item, unlabelled, seven-point scales that measured the perception of the respondents by requiring them to indicate their level of agreement with a number of items or statements. Multiple-item scales are suitable to measure a number of scale items linked to a construct or object (Aaker *et al* 2004: 293). Only the end points of the scales were identified with “strongly disagree” and “strongly agree”, respectively (Burns & Bush 2000: 306).

Suitable scale items, considered reliable and valid, were obtained from the Marketing Scales Handbook (Bruner *et al* 2005: 184-5) to measure “COO product image” and “willingness to buy” (Darling & Arnold 1988, Darling & Wood 1990, Klein *et al* 1998). Scale items were adapted for use in the questionnaire to measure perceptions regarding vitamins. The questionnaire was pre-tested before it was fielded among the target population of the study.

### 3.4 Data analysis

Paired sample *t* tests were conducted to determine whether there are significant differences between the three pairings of countries (South Africa and China, South Africa and the USA, and the USA and China) in terms of the overall mean scores calculated for each measurement set.

Independent sample *t* tests were conducted to determine whether there are significant differences between the overall mean scores of two groups (male versus female, younger versus older respondents, those without post-school education or less versus those with post-school education as well as heavy versus light users). In order to conduct the independent sample *t* tests, age categories as they appeared on the questionnaire were collapsed into two groups (39 years and younger, representing 58.9% of the respondents, and 40 years and older, representing 41.1% of the respondents; into those without post-school education and those with post-school education, and into light users and heavy users.

A one-way analysis of variance (ANOVA) was performed to determine whether there are significant differences between the means of more than two groups (groups with different reasons for consuming vitamins and groups buying vitamins from different outlets). Duncan’s Multiple Range Test was used as a Post Hoc Test to identify the groups between which significant differences can be observed when equal variances can be assumed. Duncan’s Multiple Range Test tabulates the means of groups that are significantly different in different subsets (Burns & Bush 1999: 561). Dunnett’s T3 was used as Post Hoc Test to identify the groups between which significant differences are evident when equal variances cannot be assumed (Eiselen *et al* 2005: 124). Since the authors relied on a 95% level of confidence,

or a 5% level of significance, a  $p$  value of equal or less than 0.05 indicates a significant difference between overall mean scores.

The Spearman's product moment correlation technique was used to determine whether there are any significant relationships between the COO product image held by consumers regarding vitamins presented to them as originating from South Africa, China and the USA, and their willingness to purchase vitamins. Since both variables are interval-scaled data, the association between the variables is linear and both variables are normally distributed (Eiselen *et al* 2005: 96).

## 4. Results

### 4.1 Distribution of results

Before presenting the results, it is necessary to determine whether the results obtained for each of the scale items show a normal distribution, although this is not imperative if the sample size is larger than 30 (Eisele *et al* 2007: 79). The kurtosis and skewness of the results for each scale item were examined. A scale item for which the skewness of the distribution is less than 2.00, or where the kurtosis of the distribution is less than 7.00, falls within acceptable limits of normality (West *et al* 1995: 74). All scale items measured fell within these limits and can therefore be assumed to show a normal distribution. Since scale items are normally distributed and the sample size is large ( $n = 865$ ), parametric tests were used for testing hypotheses (paired sample  $t$  tests, independent sample  $t$  tests, one-way ANOVAs and Pearson Product Moment Correlations).

### 4.2 Construct validity

Construct validity was assessed by relating scale items taken from previous research and adapting them for use in this study. Results indicated significant paths to the constructs with low residuals.

### 4.3 Reliability

Cronbach's *alpha* was used to calculate the reliability of the measurement sets used in this study. Table 1 indicates that each measurement set used in the study can be considered reliable.

Table 1: Cronbach's *alpha* for measurement sets used in the study

Measurement set	Cronbach's <i>alpha</i>
COO product image of vitamins originating in South Africa (6 scale items)	0.797
COO product image of vitamins originating in China (6 scale items)	0.793
COO product image of vitamins originating in the USA (6 scale items)	0.813
Willingness to purchase vitamins originating in South Africa (5 scale items)	0.758
Willingness to purchase vitamins originating in China (5 scale items)	0.830
Willingness to purchase vitamins originating in the USA (5 scale items)	0.810

### 4.4 Demographic profile of respondents

In total, 865 respondents completed the questionnaire. Table 2 reflects the demographic profile of the respondents.

Of the 865 respondents, 41.1% were male and 58.9% female. The majority of the respondents (31.7 %) were between the ages of 20 and 29, 18.3% between the ages of 30 and 39, 16.2% between the ages of 40 and 49 and 16.3% between the ages of 50 and 59. The majority of the respondents have a matriculation certificate (40.9%) followed by those who have a university degree (30.5%) and a technical diploma or degree (16.9%).

Table 2: Demographic profile of respondents

		Percentage
Gender	Male	41.1
	Female	58.9
Age	19 or younger	8.9
	20-29	31.7
	30-39	18.3
	40-49	16.2
	50-59	16.3
	60-69	6.8
	70 or older	1.7
Education	No formal education	1.6
	Some primary education	1.3
	Primary education completed	1.4
	Some secondary education	5.0
	Matric	40.9
	Technical diploma or degree	16.9
	University degree	30.5
Other	2.4	

#### 4.5 Vitamin consumption preferences of respondents

Table 3 presents the vitamin consumption preferences of respondents in terms of the regularity with which vitamins are taken, the reasons for taking the vitamins, as well as the outlets from where the vitamins are purchased. The majority of the respondents consume vitamins daily (39.9%); 15.7% of the respondents take vitamins only when they remember, and 14.1% take vitamins when they are ill. Most respondents buy vitamins to improve their health (60.1%), followed by those who purchase vitamins for more energy (20.9%). The majority of the respondents purchase vitamins from pharmacies (64.5%), followed by grocery stores (21.2%) and health stores (11.7%), respectively. Respondents were also asked to indicate which vitamins they buy. In terms of the kind of multivitamins being purchased, the majority of the respondents (31.2%) indicated

that they purchase vitamins as prescribed by a doctor; 26.7% indicated that they buy energy boosters, and 13.8% indicated that they buy multivitamins.

Table 3: Vitamin consumption preferences of respondents

	Percentage	
How often do you consume vitamins?	More than once a day	6.1
	Daily	39.9
	2-3 times a week	12.0
	Weekly	10.4
	When I remember	15.7
	When I am ill	14.1
	Other reasons	1.9
Main reason for purchasing vitamins	To improve health	60.1
	For more energy	20.9
	Prescribed by my doctor	10.5
	To supplement my diet	8.2
	Other	0.4
Where do you purchase vitamins?	Pharmacy	64.5
	Health store	11.7
	Grocery store	21.2
	Other stores	2.6
What kind of vitamins do you purchase? (multiple answers)	Multivitamins	13.8
	Prescribed by medical practitioner	31.2
	Energy boosters	26.7
	Specific vitamins (C, D or E)	2.1

#### 4.6 COO product image

Respondents also had to indicate their level of agreement with six items that measure the COO product image of vitamins presented to them as originating from South Africa, China and the USA, respectively. Table 4 presents the mean scores obtained, on a scale from 1 to 7. A score of 1 represents “strongly disagree” and a score of 7 is “strongly agree” with each of the scale items.

Table 4: Mean scores for “COO product image” scale items

Scale item	South Africa	China	USA
Vitamins made in ..... are carefully produced.	4.84	3.88	4.88
Vitamins made in ..... are generally of a lower quality than similar vitamins available from other countries.*	4.70	4.09	4.80
Vitamins made in ..... show a very high degree of technological advancement.	4.55	4.02	4.92
Vitamins made in ..... usually show a clever use of colour and design.	4.74	4.16	4.71
Vitamins made in ..... are usually quite trustworthy.	5.04	3.92	4.96
Vitamins made in ..... are usually good value for money.	5.13	4.13	4.80
Overall mean score for “COO product image”	4.84	4.03	4.85

\* Inverted scores for negative scale items are presented for the purpose of statistical comparison

Table 4 clearly shows that respondents view vitamins presented to them as originating from the USA most favourably in terms of being carefully produced (mean = 4.88), being of a better quality (mean = 4.80), and showing a high degree of technological advancement (mean = 4.92). Respondents view vitamins presented to them as originating from South Africa most favourably in terms of clever use of colour and design (mean = 4.74), trustworthiness (mean = 5.04), and good value for money (mean = 5.13). Respondents rated vitamins presented to them as originating from China the lowest for all the scale items measured.

Significant differences were, however, found with respect to null hypothesis 1, that the COO product image held by consumers regarding vitamins presented to them as originating from South Africa, China and the USA are not significantly different.

The results of the paired sample *t* test indicate that there is a significant difference between the overall mean scores for the COO product image held by respondents regarding vitamins presented to



them as originating from South Africa and China ( $p$  value = 0.000). Respondents hold a significantly higher COO product image of vitamins presented to them as originating from South Africa (mean = 4.84) versus vitamins presented to them as originating from China (mean = 4.03). There is no significant difference between the mean scores for South Africa (mean = 4.84) and the USA (mean = 4.85), but there is a significant difference, however, between China (mean = 4.03) and the USA (mean = 4.85;  $p$  value = 0.000), since respondents hold a significantly higher COO product image for vitamins presented to them as originating from the USA than from China.

It can therefore be concluded that respondents hold a significantly higher COO product image of vitamins presented to them as originating from South Africa and the USA than vitamins presented to them as originating from China (a developing country) ( $p$  value < 0.05).

The following findings were made with respect to null hypothesis 2, that different groups of consumers do not differ significantly with regard to their COO product image regarding vitamins presented to them as originating from South Africa, China and the USA:

- Males and females do not differ significantly in terms of their COO product image of vitamins presented to them as originating from South Africa, China and the USA ( $H_0 2_a$ ).
- Younger respondents do not differ significantly from older respondents in terms of their COO product image regarding vitamins presented to them as originating from South Africa, China and the USA ( $H_0 2_b$ ).
- Respondents with different levels of education do not differ significantly in terms of their COO product image regarding vitamins presented to them as originating from South Africa and the USA, but the independent sample  $t$  test, however, indicates that respondents with a matriculation education or lower (mean = 4.13) hold a significantly higher COO product image of vitamins presented to them as originating from China than those respondents with a post-matriculation education (mean = 3.94;  $p$  value = 0.016) ( $H_0 2_c$ ).

- Respondents who are light users do not differ significantly from heavy users in terms of the COO product image they hold regarding vitamins presented to them as originating from South Africa, China and the USA ( $H_0 2_d$ ).
- Respondents who purchase vitamins for different reasons do not differ significantly in terms of their COO product image regarding vitamins presented to them as originating from South Africa, China and the USA ( $H_0 2_e$ ).
- Respondents who purchase vitamins from different outlets do not differ significantly in terms of their COO product image towards vitamins presented to them as originating from China and the USA, but the one-way ANOVA indicates that respondents who buy from grocery stores (mean = 4.97) hold a significantly higher COO product image of vitamins presented to them as originating from South Africa than those respondents who purchase vitamins from health stores (mean = 4.64;  $p$  value = 0.40). The COO product image for vitamins presented to respondents as originating from South Africa of respondents buying from pharmacies (mean = 4.82) do not differ significantly between either health stores and grocery stores ( $H_0 2_f$ ).

It can therefore be concluded that significant differences could not be found between groups in terms of the COO product image of vitamins presented to them as originating from South Africa, China and the USA, respectively, for different groups of respondents based on gender, age, usage rate and reasons for purchasing vitamins. Significant differences could, however, be found in terms of COO product image based on groups with different levels of education as well as groups purchasing vitamins from different outlets ( $p$  value < 0.05). Respondents with a matriculation education or less perceive vitamins presented to them as originating from China significantly more positively than those who are better educated. Respondents who purchase vitamins from grocery stores also view vitamins presented to them as originating from South Africa significantly more positively than those buying vitamins from a health store ( $p$  value < 0.05).

#### 4.7 Willingness to buy

Respondents had to indicate their willingness to buy vitamins by indicating their level of agreement with five items that measure their willingness to buy a vitamin they perceive to originate from South Africa, China and the USA, respectively. Table 5 presents the mean scores, on a scale from 1 to 7 (where 1 is “strongly disagree” and 7 is “strongly agree”) of each of the scale items for each country as well as the overall mean score for the measurement set for each country.

Table 5: Mean scores for “willingness to buy” scale items

Scale item	South Africa	China	USA
I would feel guilty if I bought a ..... vitamin.*	5.67	4.31	4.99
I would never buy a ..... vitamin.*	5.84	4.43	5.29
Whenever possible, I avoid buying ..... vitamins.*	5.73	4.23	5.05
Whenever available, I would prefer to buy vitamins made in .....	5.03	3.40	4.45
I do not like the idea of owning ..... vitamins.*	5.54	4.17	4.89
Overall mean score for “willingness to buy”	5.57	4.12	4.94

\* Inverted scores for negative scale items are presented for the purpose of statistical comparison

Table 5 shows that respondents have the highest level of agreement with scale items that relate to vitamins presented to them as originating from South Africa, followed by vitamins presented to them as originating from the USA. In terms of scale items measuring willingness to buy, the lowest level of agreement for all scale items relates to vitamins respondents perceive to be from China.

Null hypothesis 3 stated that the willingness of consumers to purchase vitamins presented to them as originating from South Africa, China and the USA is not significantly different, but significant differences were, however, found.

The results of the paired sample *t* test indicate that there is a significant difference between the overall mean scores for willingness to buy vitamins presented to respondents as originating from South

Africa and China. Respondents indicated that they are significantly more willing to buy vitamins from South Africa (mean = 5.57) than vitamins presented to them as originating from China (mean = 4.12;  $p$  value = 0.000). A significant difference was also found between the willingness to buy vitamins from South Africa versus vitamins from the USA. Respondents are significantly more willing to buy vitamins presented to them as originating from South Africa (mean = 5.57) than from the USA (mean = 4.94;  $p$  value = 0.000). Respondents are also significantly more willing to buy vitamins presented to them as originating from the USA (mean = 4.94) than from China (mean = 4.12;  $p$  value = 0.000).

It can therefore be concluded that respondents are significantly more willing to buy vitamins presented to them as originating from South Africa, than vitamins presented to them as originating from China and the USA. Respondents are also significantly more willing to buy vitamins presented to them as originating from the USA than from China. Hypothesis 3 is therefore rejected.

With respect to null hypothesis 4 which states that different groups of consumers do not differ significantly with regard to their willingness to buy vitamins originating from South Africa, China and the USA, the following were found:

- Males and females do not differ significantly in terms of their willingness to buy vitamins presented to them as originating from South Africa, China and the USA ( $H_0 4_a$ ).
- Younger respondents do not differ significantly from older respondents in terms of their willingness to buy vitamins presented to them as originating from South Africa, China and the USA ( $H_0 4_b$ ).
- Respondents with different levels of education do not differ significantly in terms of their willingness to buy vitamins presented to them as originating from South Africa, China and the USA ( $H_0 4_c$ ).
- Light users do not differ significantly from heavy users in terms of their willingness to buy vitamins presented to them as originating from South Africa, China and the USA ( $H_0 4_d$ ).
- Respondents who purchase vitamins for different reasons do not differ significantly in terms of their willingness to buy vitamins

presented to them as originating from South Africa, China and the USA ( $H_0 4$ ).

- Respondents who purchase vitamins from different outlets do not differ significantly in terms of their willingness to buy vitamins presented to them as originating from China and the USA, but the one-way ANOVA indicates that respondents who buy vitamins from grocery stores (mean = 5.56) and pharmacies (mean = 5.64;  $p$  value = 0.04) are significantly more willing to buy vitamins they perceive to be from South Africa than those respondents who purchase vitamins from health stores (mean = 5.21) ( $H_0 4_p$ ).

It can therefore be concluded that significant differences could not be found between different groups of respondents in terms of willingness to buy vitamins presented to them as originating from South Africa, China and the USA, respectively, for different groups of respondents based on gender, age, education level, usage rate and reasons for purchasing vitamins, except in terms of the different outlets from which the vitamins are purchased. Respondents who purchase vitamins from grocery stores and pharmacies are significantly more willing to purchase vitamins presented to them as originating from South Africa than those who purchase vitamins at health stores ( $p$  value < 0.05). Hypothesis 4 is therefore partially accepted.

#### 4.8 COO product image and willingness to buy

With respect to null hypothesis 5, that there is no significant relationship between COO product image held by consumers regarding vitamins presented to them as originating from South Africa, China and the USA, respectively, and the willingness of respondents to purchase vitamins from these countries, the following findings were made:

- There is a moderate significant relationship (Pearson Correlation Coefficient = 0.491;  $p$  value = 0.000) between respondents' COO product image and willingness to buy vitamins presented to them as originating from South Africa.
- There is a significant relationship (Pearson Correlation Coefficient = 0.560;  $p$  value = 0.000) between respondents' COO product

image and willingness to buy vitamins presented to them as originating from China.

- There is a significant relationship (Pearson Correlation Coefficient = 0.564;  $p$  value = 0.000) between respondents' COO product image and willingness to buy vitamins presented to them as originating from the USA.

It can therefore be concluded that there are moderate to significant relationships between respondents' COO product image and their willingness to buy vitamins presented to them as originating from each of the countries in question ( $p$  values < 0.05, respectively). Hypothesis 5 could therefore not be accepted.

Based on the COO product image scores for the three countries, it is evident that respondents perceive vitamins presented to them as originating from South Africa and the USA equally favourably. However, respondents perceive vitamins presented to them as originating from China significantly less favourably. Respondents are significantly more willing to buy products presented to them as originating from their home country, South Africa, than products presented to them as originating from the USA or China, although they considered vitamins presented to them as originating from USA and South Africa in an equally positive light. This finding supports Bhaskaran & Sukumaran's (2007: 75) assertion that, when considering COO, it is important not to disregard the interconnectedness of potential influences on consumer behaviour by viewing COO effects in isolation.

## 5. Managerial implications and recommendations

### 5.1 Improving COO product image

Respondents perceive vitamins presented to them as originating from South Africa equally favourably compared to vitamins presented to them as originating from the USA. However, respondents perceive vitamins presented as originating from China less favourably. The fact that home-country vitamins are favourably viewed could indicate that respondents exhibit patriotic preference, as illustrated in

the literature, in terms of the COO product image of South African vitamins. This issue requires further investigation.

The implication of this finding is that marketers of South African vitamins could promote the origin of the product. Marketers should more specifically promote the message that South African vitamins are carefully produced, of a superior quality, technologically advanced, show a clever use of colour, are cleverly designed, are trustworthy and offer value for money. The benefits of the product should also be promoted in order to improve the COO product image of vitamins. A marketer of USA vitamins in South Africa could focus on improving the COO product image of USA vitamins by focusing on the superiority of a product produced in the USA and perhaps targeting the higher end of the market and charging a higher price. When marketing vitamins produced in China in South Africa, the challenge to improve the COO product image is much more daunting. Marketers could downplay the COO of the vitamins. They could also form a strategic alliance with a South African marketer or a marketer from another country such as the USA that is positively perceived in South Africa. The marketer of vitamins produced in China could then adopt the practices of the partner and proceed to build positive brand image in the long run for the product in South Africa. In addition, marketers could decide to target the middle to lower end of the South African market, focusing on a low-price strategy. Another option is to establish a price-quality relationship by charging a high price for the vitamins in an effort to convey a position of exclusivity for the Chinese vitamins.

## 5.2 Role of education

Respondents with a matriculation education or less perceive vitamins presented to them as originating from China significantly more positively than respondents who are better educated. The implication of this finding is again to target Chinese vitamins towards the middle and lower end of the market and rather compete on the basis of lower price.

## 5.3 Willingness to purchase

Respondents are significantly more willing to buy vitamins they perceive to be from South Africa than vitamins they perceive to be from

China or the USA. Marketers of South African vitamins could therefore tie their marketing efforts to South Africans' patriotic preferences of local products. As mentioned earlier, the implication is that marketers of South African vitamins should focus strongly on this aspect in their marketing communications to improve willingness to buy among their markets. Further investigation is, however, needed to determine why respondents view South African and USA vitamins equally favourably in terms of COO product image, but when it comes to willingness to buy, respondents are significantly more willing to buy vitamins presented to them as originating from South Africa.

#### 5.4 Role of outlets

It was found that respondents who purchase vitamins from grocery stores and pharmacies are significantly more willing to purchase vitamins presented to them as originating from South Africa than those who purchase vitamins at health stores. Consumers who have a significantly more favourable COO product image with regard to vitamins originating from South Africa mostly buy vitamins at grocery stores, and those who are more willing to buy vitamins originating from South Africa buy at grocery stores and pharmacies. Those who purchased vitamins from health stores are significantly less willing to buy vitamins originating from South Africa. This could imply that consumers buying vitamins from a specialist store, such as a health shop, could consider products from developed countries more favourably and thus be less willing to buy vitamins presented to them as originating from South Africa. Respondents who buy vitamins from grocery stores also view vitamins from South Africa significantly more positively than those buying from a health store. The implication of this finding is that a marketer of vitamins originating from South Africa should focus its distribution efforts towards national grocery chains – this is where marketers may find consumers who hold the most positive COO product image towards vitamins originating from South Africa.

The study concludes with the finding that there are significant relationships between the COO product image for vitamins presented to originate from USA and the willingness of respondents



to buy these products. The same is true for vitamins presented to originate from China. The relationship between COO product image and willingness to buy vitamins originating from South Africa is, however, moderate. The reason for this is that vitamins presented to originate from South Africa and USA are perceived equally favourably, but the respondents are significantly more willing to buy vitamins originating from South Africa. This situation affects the relationship between COO product image and willingness to buy regarding vitamins originating from South Africa.

## 6. Limitations and future research

The study was restricted to the North-West province. Findings can therefore not be generalised to the entire population in South Africa. Fieldworkers were required to fill quotas based on population group and family life cycle stage. A low incidence rate of black consumers who consume vitamins combined with time and budget constraints resulted in a sample that is representative of the white population, since a higher incidence rate was observed among white consumers. It is recommended that the study be duplicated in other regions of the country in order to draw comparisons between this study and future studies conducted in other regions of the country. A comparative study could also include consumers from other countries. The sample selection should be performed more rigorously in order to ensure that respondents reflect the demographic profile of the South African population more accurately.

## 7. Conclusion

The most notable finding of the study is that the consumers of vitamins who participated in this study hold a positive COO product image of vitamins they perceive to be from South Africa and the USA. These consumers of vitamins viewed vitamins they perceive to be from China significantly less favourably. In terms of the willingness to buy vitamins, consumers are significantly more willing to buy South African vitamins than vitamins from the USA and China, although consumers are also significantly more willing to

buy USA vitamins than those they perceive to be from China. Significant relationships could also be found between the COO product image consumers hold of the three countries and their willingness to buy vitamins originating from each of these countries. Although consumers had a similar COO product image of vitamins presented to originate from South Africa and the USA, they were significantly more willing to buy vitamins originating from South Africa, possibly because of ethnocentrism or patriotic preference.

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