WHAT MOTIVATES CONSUMERS TO CHOOSE SUGARED DAIRY PRODUCTS? A CROSS-SECTIONAL, ONLINE SURVEY

Jolindi Botha, Annchen Mielmann* & Heleen Dreyer

ABSTRACT

Too much sugar is known to have a negative effect of consumers' health, however the intake of added sugars has risen steadily over the years, resulting in a less healthy diet. A constant high intake of sugar-rich foods can lead to diseases such obesity and diabetes. Dairy product consumption is encouraged by dietary guidelines worldwide, yet food industries are adding large amounts of sugar to these products. Research into South African consumers' motives to choose and eat sugared products is still unrepresented in the international scientific literature, despite the growing economic significance of these markets. Furthermore a lack of knowledge exists regarding the sugar content in sugared dairy products among consumers. In order to understand why consumers choose such dairy products, it is necessary to comprehend sugar as an ingredient in food products, specifically sugared dairy, as well as consumers' motivations and food choices as determining factors in food choice behaviour.

This cross-sectional study investigated consumers' motives to choose and eat sugared dairy products. Adults (18 to 54 years; 40 males; 35 females) (n = 75) participated in an online survey. Consumers were motivated by sensory appeal, convenience and price to choose SDPs. Physical- and social eating contributed to their motives for eating sugared dairy products. Consumers' motives for these products were in contrast with their health values as they were unaware of the high levels of sugar present in sugared dairy products. These results suggest that a better understanding of food choice motives will enable the dairy industry and consumers to make more informed decisions and promote healthier food choices. Additionally, these results underline the need to re-evaluate and revise current food-based dietary guidelines and the classification of dairy products.

— ***Miss J Botha***
Department of Consumer Sciences
North-West University
School for Physiology, Nutrition and Consumer Sciences
Private Bag X6001
Potchefstroom
2520
South Africa
Tel: +27 (0)82 082 5202
Email: bothajolindi@gmail.com

— ***Dr A Mielmann****
Department of Consumer Sciences
North-West University
School for Physiology, Nutrition and Consumer Sciences
Private Bag X6001
Potchefstroom
2520
South Africa
Tel: +27 (0)18 299 2474
Email: Annchen.Mielmann@nwu.ac.za
*Corresponding author

— ***Mrs H Dreyer***
Department of Consumer Sciences
North-West University
School for Physiology, Nutrition and Consumer Sciences
Private Bag X6001
Potchefstroom
2520
South Africa
Tel: +27 (0)18 299 2471
Email: Heleen.Dreyer@nwu.ac.za

ARTICLE INFO

Article history
Received April 2018
Revision August 2018
Final Submission December 2018

Keywords
sugared dairy; food choice; health, behaviour; motivation; adults

INTRODUCTION

The intake of added sugars in food has risen steadily over the past decades (Whitney & Rolfes, 2011) with an impact that is devastating in public health contexts (WHO, 2014). As with several other societies, statistics indicate that sugar consumption has increased in South Africa (Ronquest-Ross et al., 2015). A constant high intake of sugar-rich foods can lead to diseases such obesity and diabetes (Chollet et al., 2013; Temple & Steyn, 2013). Further, although the consumption of dairy products is encouraged by dietary guidelines worldwide (Hoppert et al., 2013), food industries are adding large amounts of sugar to these products (Chollet et al., 2013), providing consumers with unhealthy, energy-dense food. In the context of added sugar, South Africans can consult nutrition labels only for the total sugar content (Jacobs et al., 2010). The classification of dairy products in the Agricultural Product Standard Act, 1990 (ACT No. 119 of 1990) provide only standards for milk, drinking yoghurt and yoghurt regarding the fat and protein content (South Africa, 2015). Added sugar is therefore not included on food labels to influence consumers' food choice.

Food choice is the consumer's decision making in relation to the selection and consumption of food products (Sobal et al., 2006). Consumers will not make a food choice in a certain way without being motivated to do so. The literature distinguishes between food choice and eating behaviour (Naughton et al., 2015; Renner et al., 2012; Kearny et al., 2000), indicating that there is a difference between a consumer's motives to choose and their motives to eat a food product. Motives to choose underpin the consumer behaviour of selecting a specific food product – this may be to buy it for themselves or to buy it for others. Motives to eat relate to consumers making the decision to eat it themselves. A relationship can therefore be seen between motives and food choice – the consumer will be motivated to eat a certain food product for a specific reason, and at the same time may be influenced to choose a food product for another reason. Motives for eating and food choices may also overlap, for example being in a negative mood state can trigger eating, but can also influence the choice of specific foods (Renner et al., 2012.

Presently it is not clear whether consumers are knowledgeable regarding the high sugar content in flavoured dairy products. To the authors' knowledge, no research has been conducted to determine consumer's motives to choose and eat SDPs in South Africa. Understanding the reasons behind food choices can be helpful in changing consumers' eating behaviour and encourage healthier food choices, contributing to health research and ultimately consumer well-being (Thuy, 2015). Therefore, the aim of the study was to investigate South African consumers' motives to choose and eat SDPs.

METHODOLOGY

Study population and sample size

A quantitative, descriptive cross-sectional survey was employed using non-probability purposive sampling. All permanent employees (N=211) of a nutrition company acted as the targeted population to conduct this research. The inclusion criteria required that respondents needed to either consume at least one of three SDPs, namely flavoured milk, yoghurt or drinking yoghurt regularly or have consumed it in the past. Respondents who are allergic to diary were excluded from the study. A total of 94 respondents participated in the study, however due to inclusion criteria not being met, 19 respondents did not complete the questionnaire. Therefore, 75 adults were included in the research.

Data collection and measurement instrument

Data collection took place by using a survey method in the form of an online questionnaire. In order to comply with ethic regulations,

recruitment was done by sending an e-mail to the target population containing an advertisement of the proposed study as a portable document format (pdf), approximately one week before data collection. The online questionnaire was subsequently distributed for completion to each permanent employee by sending it to the employees' e-mail addresses as facilitated by the Human Resources Department of the company.

The online questionnaire included a letter of consent to give permission to take part in the research. After reading the letter of consent, respondents had the option to accept or decline the informed consent. Once affirmative consent were given by clicking on the accept button the survey started with an information page which aided to familiarise respondents with the different SDPs. The questionnaire consisted of four sections: i) demographics; ii) sugar consumption and awareness (including Body Mass Index (BMI) and physical activity status) and sugared dairy preference (Boggiano, 2016; Hawks et al., 2004; Jackson et al., 2003; Merrill, 1997); iii) the Motivation for Eating Scale (MFES) (Hawks et al., 2004); and iv) the Food Choice Questionnaire (FCQ) (Steptoe et al., 1995).

Section two contained questions regarding respondent's sugar consumption and awareness (Table 2) (Boggiano, 2016; DSM, 2015). Respondents were asked: "How much sugar (in teaspoons) do you think are in one serving of your preferred product? Please note: one serving = one cup (250ml) to one and a half cup (375ml)". No differentiation was made when the respondents considered total or added sugars. In addition, the questionnaire included questions to determine respondents' BMI (Body Mass Index) and level of physical activity as to determine their health status. Body Mass Index (kg/m2) was calculated from self-reported weight and height, i.e. dividing weight in kilograms by the square of height in meters (kg/ m2). Respondents with a BMI > 25 kg/m2 were classified as being overweight. Furthermore, to determine consumers' sugared dairy preferences, respondents were asked: "How much do you like the following sugared dairy products?" using a 4-point Likert-type statements (1 = not at all, 5 = very much).

The MFES was created to evaluate the primary motives for the consumer's eating behaviour by using 5-point Likert-type statements (Hawks et al., 2003). It has been used successfully in previous studies concerning food choice (Hawks et al., 2003), reviewed by Hawks et al. (2004) and tested for validity and reliability by Merrill (1997). The questionnaire was, therefore, considered a reliable instrument to measure the motives behind food choice. The MFES is a comprehensive scale consisting of four subscales indicating the reasons why people initiate eating, why people stop eating, how people decide what to eat and how aware people are of sensations while they eat (Merrill, 1997). For the purpose of this study, only questions from the initiation of eating and how people decide what to eat subscales were used, as these are related to food choice. Scores on these subscales were then classified according to four categories: emotional eating, physical eating, environmental eating and social eating (Hawks et al., 2004). These subscales rarely function separately. Hawks et al. (2004) found clear correlations between emotional eating, environmental eating and social eating; explaining that stimuli from the environment and social eating cues increase the susceptibility to hunger. Physical eating was however found to be unrelated to the other subscales by the same study. These categories were used to classify scores in this study and is discussed briefly.

The FCQ questionnaire aimed to investigate consumers' motives for food choice based on nine different aspects: sensory appeal, health, weight management, mood, convenience, natural content, price, familiarity and ethical concern (Steptoe et al., 1995). Reviewing the FCQ, Fotopoulos et al. (2009) found it to be a reliable instrument in the context where it was administered.

Face validity was achieved by consulting experts in the field of Food and Consumer Sciences – they had experience regarding research in food and consumer behaviour. In order to achieve content validity, existing questionnaires were used. Having done a thorough literature study further supported both the content and construct validity. Construct validity determined whether the instrument was valid in measuring the different constructs of the

study. By performing a factor analysis, it was determined whether the different variables in the study are interrelated or not (Pietersen & Maree, 2007). Exploratory factor analysis (EFA) together with Principle Components Analysis (PCA) was employed for the scales in the measurement instrument to measure construct validity. Construct validity was confirmed by the EFA for all sections. Kaiser-Meyer-Olkin (KMO) values of the EFA were also acceptable for all sections.

Internal reliability was evaluated by means of inter-item correlations using Cronbach's alpha. The internal consistency of the four sections in the questionnaire was tested using Cronbach's alpha coefficient. The results were satisfactory for all the scales (Cronbach's alpha 0.59–0.83), measuring the good provider identity. Together with the validity, EFA indicated a high reliability of all factors in the measuring instrument.

Data analysis

Data was analysed by the Statistical Package for Social Science (SPSS). Descriptive statistics analysis was applied to all sections of the questionnaire, which included frequencies, mean scores and standard deviations. Inferential statistics included exploratory factor analysis (EFA), Cronbach's alpha coefficient, T-tests and non-parametric correlations. Effect sizes were considered for all statistics. Differences between variables were calculated by using Cohen's d-values. Associations between variables were calculated by using Spearman's rank correlation coefficient (r). Cronbach alpha values indicated an internal consistency with acceptable internal reliability for all sections (Table 3). The construct validity was confirmed by EFA. By consulting Kaiser-Meyer-Olkin (KMO) values, the EFA indicated a high reliability (between 0.5 and 1.0) for all factors in the questionnaire which are acceptable (Field, 2009).

Ethical considerations

Ethical approval for this study was obtained from the Health Research Ethics Committee (HREC) of the Faculty of Health Sciences of the North-West University (NWU) (Reference number: NWU-00339-16-S1). Participation in this study was voluntary. All participants gave consent before commencing with the questionnaire. The completed questionnaires were handled with confidentiality and personal information about the respondents was not made known to any party.

RESULTS AND DISCUSSION

Demographics

The sample consisted of a near-equal gender distribution (53.3% male; 46.7% female). The younger respondents were strongly represented, with 96% being between the ages of 18 and 44. Population groups represented, consisted of white (84%), black (10.7%), coloured (4%) and Indian (1.3%) respondents. The majority of the sample was earning between R20 001 and R50 000 (46.7%) and married or living with a partner (53.3%). Frequencies and distributions of respondents' demographics are presented in table 1.

Health-awareness

The male respondents were classified as obese as their mean BMI score was 30kg/m2 (SD = 0). The women respondents were classified as healthy with a mean BMI score of 21.75 kg/m2 (SD = 2.5). Male respondents' high BMI score can be supported with their physical activity status, as 77.4% exercised more than three times a week, therefore leading a relative active lifestyle. Respondents are employed at a nutrition company whose products promote muscle building and with a moderate physical activity lifestyle, it can be speculated that the high reported BMI values are due to muscle mass instead of high fat percentages.

Regarding knowledge of sugar consumption, respondents thought that one serving of a SDP contained three to four teaspoons of sugar (M = 3.9), however the sugar content of commercial SDPs is generally higher (Chollet et al., 2013), as the average total sugar (including lactose) present per serving of a SDP (4g per teaspoon) are 24g (6 teaspoons) in 250ml to 375ml.

Table 2 depicts the factor loadings for the EFA for the scale used for a question regarding sugar intake and SDPs. These data yielded three

TABLE 1: FREQUENCIES AND DISTRIBUTION OF RESPONDENTS' DEMOGRAPHICS (*n*=75)

Demographic characteristics	Total	%
Gender		
Male	40	53.3
Female	35	46.7
Age in years		
18-24	21	28
25-34	35	46.7
35-44	16	21.3
45-54	3	4
Population group		
Black	8	10.7
Coloured	3	4
White	63	84
Indian	1	1.3
Home language		
English	16	21.3
Afrikaans	52	69.3
isiZulu	4	5.3
Xitsonga	1	1.3
Other	2	2.7
Approximate personal income		
R0-R4000	10	13.3
R4001-R8000	8	10.7
R8001-R20 000	17	22.7
R20 001-R50 000	35	46.7
Not disclosed	5	6.7
Marital status		
Single/widow/widower/divorced	35	46.7
Married/living with a partner	40	53.3

factors which were labelled "health awareness", "health risks" and "product characteristics". Health awareness was awareness and concern regarding sugar intake in general. Health risks were information regarding obesity and diabetes and the link with sugar consumption and product characteristics were aimed at the sugar content of SDPs.

The mean factor scores of respondents' answers (Table 3) reflected that they agree with all these statements regarding health awareness (M = 2.91), health risks (M = 3.14) and product characteristics (M = 1.88) to some extent. Within the health risks category, respondents agreed to a great extent with these statements, indicating that they are aware that overconsumption of sugar can causes obesity and diabetes. Statements regarding health awareness indicated that respondents care about their sugar intake (58.7% to a great extent) and within the product characteristics category, 90% of respondents indicated that they are aware that dairy with a high amount of added sugar is not healthy. Respondents however do not show a high concern for the amount of sugar in dairy - 60% agreed to a small or to some extent that they are concerned about the amount of sugar in dairy, while only 42.7% indicated that dairy products do not need additional sugar. These findings support what the researchers suspected - that these consumers' motives to choose SDPs are in contrast with their health values and they may not be aware of the high sugar content in SDPs which they view as healthy.

Motives to choose SDPs

Exploratory factor analysis was used for the scales to determine construct validity. Confirmatory factor analysis (Table 4) was conducted on the literature model as to obtain a good fit among the factors according to the nine literature categories (Steptoe et al., 1995). Large correlations among factors were however

TABLE 2: EXPLORATORY FACTOR ANALYSIS OF CONSUMERS' HEALTH AWARENESS REGARDING SUGAR

Item on scale	Health awareness	Non-communicable Diseases	Product characteris-tics
I pay more attention to the amount of sugar added in a dairy product than I did 3 years ago	.74		
I care about my sugar intake	.73		
I am more concerned about the ingredients in dairy than I was 3 years ago	.72		
I am concerned about the amount of sugar in dairy	.71		
Do you think the consumption of sugar is unhealthy?	.59		
Dairy does not need additional sugar	.44		
Dairy with low or reduced sugar is better for my health	.44		
Do you think the intake of sugar causes diabetes?		.74	
Do you think the intake of sugar causes obesity?		.74	
I prefer dairy that is sweetened			.81
Dairy is healthy, no matter the amount of sugar it contains			.78
Inter item correlation	.30	.61	.43
α	.76	.76	.59
Mean factor score	2.91	.14	1.88
SD	.67	.85	.66
KMO	.70		

α = Cronbach's alpha; SD = Standard Deviation; KMO = Kaiser-Meyer-Olkin.

TABLE 3: HEALTH-CONSCIOUS CONSUMERS' HEALTH AWARENESS AND MOTIVES TO EAT AND CHOOSE SUGARED DAIRY PRODUCTS

Factor	Factors within sec-tions	Mean factor score	Likert Scale*	α	KMO
Health awareness	Health awareness	2.91	1	.76	.70
	NCDs	3.14		.76	
	Product characteristics	1.88		.59	
Motivation	Physical eating	2.18	2	.86	.72
	Emotional eating	2.05		.86	
	Social eating	2.15		.51	
	Environmental eating	2.06		.76	
Food choice	Health	2.26	2	.90	.89
	Weight control	1.95		.81	
	Sensory appeal	3.18		.82	
	Natural content	2.02		.83	
	Ethical concern	1.92		.82	
	Convenience	3.01		.86	
	Familiarity	2.42		.74	
	Mood	2.36		.90	
	Price	2.51		.75	

*Type of Likert scale used: 1: 1 = Not at all; 4 = To a great extent, 2: 1 = Never; 5=Always; α = Cronbach's alpha; KMO = Kaiser-Meyer-Olkin.

evident, indicating that the factors can be grouped together statistically.

Mean factor scores (Table 3) with a greater influence, included sensory appeal (M = 3.18), convenience (M = 3.01) and price (M = 2.51), indicating that respondents base their choice of SDPs on taste, which motivates them to choose the product. This supports research showing consumers' preference for high levels of sucrose

TABLE 4: CONFIRMATORY FACTOR ANALYSIS OF MOTIVES TO CHOOSE SUGARED DAIRY PRODUCTS

	Inter item correlation	α	Mean factor score	SD
Health	.76	.90	2.26	1.01
Weight control	.59	.81	1.95	.87
Sensory appeal	.62	.82	3.18	.97
Natural content	.63	.83	2.02	.96
Ethical concern	.59	.82	1.92	.97
Convenience	.67	.86	3.01	1.03
Familiarity	.49	.74	2.42	.91
Mood	.82	.90	2.36	1.11
Price	.60	.75	2.51	.98
KMO	.89			

α = Cronbach's alpha; SD = Standard Deviation; KMO = Kaiser-Meyer-Olkin.

in food (Markey et al., 2015; Chollet et al., 2013; Hoppert et al., 2013) including drinking yoghurt (Thompson et al., 2007) and is also in line with SA consumers' motives to choose fruit beverages (Visser, 2007).

Respondents were motivated by the convenience aspect of SDPs. This supports research involving yoghurt drinks, which were found to be chosen because they are portable and convenient to consume anywhere (Allgeyer et al., 2010). Many respondents (65.1%) indicated that they sometimes (43.9%) choose SDPs when they need a quick snack at work and because it is easily available in retail shops (69.7%). These respondents function in a corporate environment and may experience limited time to prepare and cook food (Marquis, 2005). Sugared dairy products therefore act as a convenient snack or meal which does not require any preparation.

Respondents were also motivated by the price of the product. Monetary value is the primary motivation for food and beverage purchases among SA consumers (Euromonitor, 2016). Although the price of food products is generally found to be most important to consumers earning a low income (Visser, 2007), these respondents from a high socio-economic group also considered the price. It is therefore evident that respondents consider SDPs as highly nutritious and good value in relation to its price.

Categories with a moderate influence included familiarity (M = 2.42), mood (M = 2.36), health (M = 2.26) and natural content (M = 2.02). Although research indicates that consumers have become more health conscious (Nielsen, 2015) and that health claims on yoghurt labels motivate consumers to choose it (Miklavec et al., 2015), health only showed a moderate influence, indicating that health claims on these products perhaps do not have a high influence in motivating them to choose it.

Motives to eat SDPs

Table 5 depicts the factor loadings for the EFA of consumers' motives to eat SDPs. Four eating factors were identified, namely emotional, physical, environmental and social as stipulated in the MFES (Hawks et al., 2004). It was reflected by mean factor scores (Table 3) that the different motives to eat SDPs all have an influence on these respondents' motives to eat SDPs and they indicated a greater influence of the motives, physical eating (M = 2.18) and social eating (M = 2.15). Respondents are therefore primarily motivated by physical eating motives to eat SDPs – they therefore eat dairy products when they are hungry. This may be important to consider when these products, high in sugar, are eaten as a meal instead of other nutritious foods. However, in the second part of the questionnaire, respondents were asked to indicate how often they buy SDPs as a snack, indicating that 80% only buy it once every two weeks or less. While this finding is in contrast with responses discussed in the motives to choose section, which indicated their food choices being the need for a snack at work, it may support physical eating as the main motive to eat SDPs. This confirms that respondents eat

TABLE 5: EXPLORATORY FACTOR ANALYSIS OF CONSUMERS' MOTIVES TO EAT SUGARED DAIRY PRODUCTS

Item on scale	Physical eating	Emotional eating	Social eating	Environmental eating
Have forgotten to eat and am starved	.88			
Am physically hungry and food sounds good	.83			
Am weak/lightheaded because I haven't eaten	.82			
Realise it's mealtime, so I automatically eat	.74			
Feel physical hunger pains	.71			
Need comforting		.85		
Overconsume when under stress		.80		
Want to treat myself		.74		
Want to cheer up		.74		
Feel it is connected to a memory of happiness		.73		
Once started to eat, it's hard to stop		.70		
Reward myself after a challenging task – I feel I "deserve" it		.64		
Feel irritable when I haven't eaten		.37		
Feel bored		.41		
Am with friends who are eating it			.75	
Don't want to offend someone who bought it for me			.35	
See something good at a checkout stand				.44
See an advertisement of the product				.35
Have tempting food in front of me				.59
Am busy preparing food				.53
Inter item correlation	.50	.41	.35	.44
α	.86	.86	.51	.76
Mean factor score	2.17	2.05	2.15	2.06
SD	.73	.75	.94	.65
KMO	.71			

α = Cronbach's alpha; SD = Standard Deviation; KMO = Kaiser-Meyer-Olkin.

TABLE 6: CONSUMERS' MOTIVES TO EAT SUGARED DAIRY PRODUCTS - SOCIO-DEMOGRAPHIC CHARACTERISTICS

Socio-demographic	Motive	M	SD	*r*	d
Gender: Men	Price	2.69	1.02	.09	.40
Population group: Black (n=8)	Health	2.76	1.01	.20	.52*
	Sensory appeal	4.05	.56	.01	.99**
	Convenience	4.00	.86	.01	1.10**
	Price	3.29	.81	.03	.87**
Population group: White (n=63)	Social eating	2.23	.96	.32	.37
Marital status: Single (n=35)	Weight control	2.16	.95	.06	.42
	Ethical concern	2.17	1.03	.04	.47

M = Mean; SD = Standard Deviation; r = Spearman's rank correlation coefficient; d = Effect size: .2 = small; .5 = medium*; .8 = large**

SDPs when they are hungry and consider it to be part of a meal instead of a snack, and therefore they do not classify these products together with other snack foods. This type of motivation to eat often originates in the physiological effects of the specific food product in the body, such as food providing needed energy in order to fuel all activities (Whitney & Rolfes, 2011). It is possible that a similar effect is present in SDPs, due to its sugar content – this may provide consumers with needed energy and therefore the motivation to eat it. Respondents are also motivated by social eating to eat SDPs. Lewis (2017) confirmed that SDPs

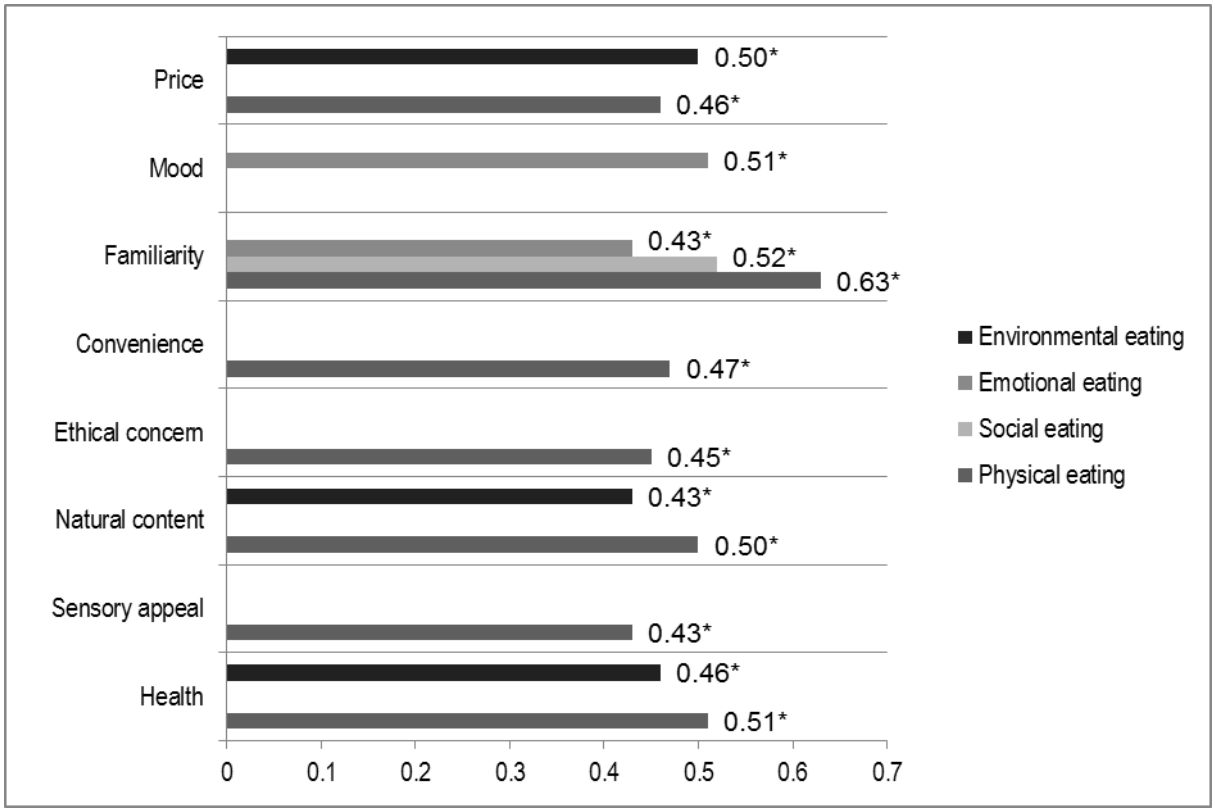

FIGURE 1: CORRELATIONS BETWEEN CONSUMERS' MOTIVES TO CHOOSE AND MOTIVES TO EAT SUGARED DAIRY PRODUCTS

may be shared among friends while reflecting values of friendship and hospitality.

Motives according to socio-demographic characteristics

Non-parametric correlations were revealed by T-tests between gender, population group and marital status and respondents' motives to choose and to eat SDPs (Table 6). Gender influenced price as a motive to choose SDPs (M = 2.69; d = 0.40), indicating that men are more motivated by the price of these products than women. This supports findings regarding shopping motives which describe women to pay attention to uniqueness and assortment of goods and men to participate in a more logical and efficient shopping process, while being motivated by price and value for money (Lewis, 2017; Schiffman & Kanuk, 2014).

Population group influenced the highest amount of motives. Black respondents (n=8) were motivated by convenience (M = 4.00; d = 1.10) and sensory appeal (M=4.05; d = 0.99). White respondents (n=63) were motivated by social eating (M = 2.23, d = 0.96), meaning that SDPs may be shared among friends while reflecting values of friendship and hospitality (Ensaff et al., 2015).

When researching food choices, marital status is generally involved in aspects such as convenience as a motivation for food choices in general - consumers who are single or living alone often spend less time cooking and preparing food, therefore assigning a high priority towards convenience products (Flagg et al., 2013; Marquis & Manceau, 2007). Single respondents in this research were however rather motivated by weight control (M = 2.16; d = 0.42) and ethical concerns (M = 2.17; d = 0.47) when choosing SDPs. Weight control was similarly found to be one of the main motivators of single consumers' Food choices among young adults (Marquis, 2005). Single consumers generally choose food products to sustain their health and as such ethical aspects can becomes important. Single consumers often also have a larger expendable income than consumers who

need to choose products for their children or household (Marquis & Manceau, 2007). They are therefore able to buy more expensive products with added ethical and natural benefits.

Correlation between motives to choose and motives to eat SDPs

If a relationship is seen between motives to eat and motives to choose, it indicates that the consumer is motivated to eat a SDP for a specific reason, and at the same time may be influenced to choose one for another reason. These aspects were addressed with the Spearman's correlation coefficient and revealed several correlations, with a significance value of $p < 0.001$ for all coefficients (Fig. 1). Health correlated with physical- and environmental eating ($r = 0.51$; $r = 0.46$), indicating that while respondents, who are hungry and for example, see a SDP at a convenience store, are motivated to eat something, they are influenced by a motivation to make a healthy food choice and choose a SDP. Sensory appeal correlated with physical eating ($r = 0.43$), showing that when respondents are hungry, the pleasant taste motivates the choice of a SDP. Natural content correlated with physical and environmental eating ($r = 0.50$; $r = 0.43$), suggesting that hungry respondents, influenced by an environmental stimulus, look for products that contain natural or authentic ingredients rather than synthetic ingredients which they view as being harmful and a possible risk (Kamal & Karoui, 2015; Lahteenmaki, 2003) to their health.

Ethical concern and convenience correlated with physical eating ($r = 0.45$; $r = 0.47$). Ethical concern was however found to have a low influence on respondents' choice of SDPs. Familiarity correlated with physical eating ($r = 0.63$), emotional eating ($r = 0.43$) and social eating ($r = 0.52$). Familiarity supports a kind of habit-driven consumption behaviour, as Visser (2007) found that SA consumers' choice of fruit beverages was mainly motivated by being familiar to these products. Solomon et al. (2010) stated that an emotional connotation such as a memory of growing up and consuming SDPs as a child, can provide a sense of security, consuming a familiar product, due to culture playing a significant role in the forming of dietary habits while growing up (Prescott et al., 2002). Mood correlated with emotional eating ($r = 248$ 0.51), indicating the pleasure experienced from eating a pleasant tasting food product has a positive effect on the mood state of an individual (Gardner et al., 2014; Lahteenmaki, 2003). Boggiano et al. (2014) found that when consumers are in a bad mood they tend to choose sweet tasting food products.

CONCLUSIONS

The negative effects that added sugars have on consumer health are well known in research communities. However, a lack of consumer knowledge exists regarding the sugar content of SDPs. In order to understand why they choose dairy products, it was necessary to comprehend all the aspects regarding sugar as an ingredient in food products, specifically sugared dairy, as well as consumers' motivation and food choice as determining factors in food choice behaviour. While the consumption of milk and dairy products should be encouraged as part of a healthy diet, the amount of sugar added to these products should be considered. Results indicated that consumers are health-conscious, however their motives to choose SDPs were in contrast with their health values and they are not knowledgeable regarding the sugar content in SDPs which they consider as healthy. While consumers were motivated by sensory appeal, convenience and price to choose SDPs, physical eating and social eating contributed to their motives to eat SDPs. Although the sample size was relatively small and generalisations cannot be drawn from these results, there were some noteworthy differences between Black and White respondents pertaining to motives for choosing SDP. Black respondents were motivated by convenience and sensory appeal while White respondents were more motivated by social eating. Thus ethnicity and cultural setting does influence motives to chooses SDP and need further investigation.

Research into South African consumers' motives to choose and eat sugared products is still unrepresented in the international scientific literature, despite the growing economic significance of these markets. This research is the first of its kind in SA, serving as a baseline for further investigation. Insight on consumers'

food choice was provided, which may be beneficial for both the consumer and industry. Consumers view SDPs as part of a meal instead of a snack. Therefore, the dairy industry can be provided with better insight regarding the behaviour of the consumer, enable better product positioning to target a specific market and provide guidance in new food product development regarding the sugar content of SDPs. In addition, this research can be used as a basis to educate consumers regarding their choice of SDPs. A better understanding of food choice motives will enable consumers to make informed decisions, promote healthier food choices and ultimately contribute towards consumer well-being. Results indicated the lack of knowledge in terms of the sugar content of SDPs among consumers – this establishes the need to re-evaluate and revise the current food-based dietary guidelines and classification of dairy products in the Agricultural Product Act. It is recommended for future research to conduct the methods used in this research by using a larger sample of consumers. These results should encourage studies of other food categories to gain greater insight into consumers' motives for choosing sugared products.

REFERENCES

Allgeyer, L.C., Miller, M.J. & Lee, S.Y. 2010. Drivers of liking for yogurt drinks with prebiotics and probiotics. Journal of Food Science, 75(4): 212–219.

Boggiano, M.M. 2016 Palatable eating motives scale in a college population: distribution of scores and scores associated with greater BMI and binge-eating. Eating Behaviour, 21(1): 95–98.

Boggiano, M.M., Burgess, E.E., Turan, B., Soleymani, T., Daniel, S., Vinson, L.D., Lokken, K.L., Wingo, B.C. & Morse, A. 2014. Motives for eating tasty foods associated with binge-eating: results from a student and weight loss seeking population. Appetite, 83(1):160 –166.

Chollet, M., Gille, D., Schmid, A., Walther, B. & Piccinali, P. 2013. Acceptance of sugar reduction in flavoured yoghurt. Journal of Dairy Science, 96(9): 5501–5511.

DSM. 2015. Understanding consumer preference on sugar reduction: dairy. Available at: http://www.dsm.com/content/dam/dsm/foodandbeverages/en_US/documents/dsm_global_insights_sugar_reduction_paper_1.pdf. Accessed on 5 December 2015.

Ensaff, H., Coan, S., Sahota, P., Braybrook, D., Akter, H. & McLeod, A. 2015. Adolescents' food choice and the place of plant-based food. Nutrients, 7:4619-4637.

Euromonitor. 2016. Health and wellness in South Africa. Available at: http://www.euromonitor.com/health-and-wellness-in-south-africa/report. Accessed on 3 April 2017.

Field, A. 2009. Discovering statistics using SPSS. Thousand Oaks, California: Sage.

Flagg, L.A., Sen, B., Kilgore, M. & Locker, J.L. 2013. The influence of gender, age, education, and household size on meal preparation and food shopping responsibilities. Public Health Nutrition, 17(9): 2061–2070.

Fotopoulos, C., Krystallis, A., Vassallo, M. & Pagiaslis, A. 2009. Food choice questionnaire (FCQ) revisited. Suggestions for the development of an enhanced general food motivation model. Appetite, 52(1):199-208.

Gardner, M.P., Wansink, B., Kim, J. & Park, S. 2014. Better moods for better eating? How mood influences food choice. Journal of Consumer Psychology, 24(3): 320–335.

Hawks, S.R., Merrill, C.G., Gast, J.A. & Hawks, J.F. (2004). Validation of the motivation for eating scale. Ecology of Food and Nutrition, 43 (4), 307–326.

Hawks, S.R., Madanat, H.N., Merrill, R.M., Goudy, M.B. & Miyagawa, T. 2003. A cross-cultural analysis of "motivation for eating" as a potential factor in the emergence of global obesity: Japan and the United States. Health Promotion International, 12(2): 153–162.

Hoppert, K., Zahn, S., Janecke, L., Mai, R., Hoffman, S. & Rohm, H. 2013. Consumer acceptance of regular and reduced-sugar yogurt enriched with different types of dietary fibre. International Dairy Journal, 28(1): 1–7.

Jackson, B., Cooper, M.L., Mintz, L. & Albino, A. 2003. Motivations to eat: scale development and validation. Journal of Research in Personality, 37(4): 297–318.

Jacobs, S.A., De Beer, H. & Larney, M. 2010. Adult consumers' understanding and use of information of food labels: a study among consumers living in the Potchefstroom and Klerksdorp regions, South Africa. Public Health Nutrition, 14(3): 510–522.

Kamal, M. & Karoui, R. 2015. Analytical methods coupled with chemo metric tools for determining the authenticity and detecting the adulteration of dairy products: a review. Trends in Food Science and Technology, 46(1): 27–48.

Kearny, M., Kearny, J.M., Dunne, A. & Gibney, M.J. 2000. Sociodemographic determinants of perceived influences on food choice in a nationally representative sample of Irish adults. Public Health Nutrition, 3(2): 19–226.

Lahteenmaki, L. 2003. Consumers and functional foods. In: Functional dairy products (Mattila-Sandholm, T. & Saarela, M., eds.), Cambridge: Woodhead, pp. 347–358.

Lewis, M. 2017. Men vs. women: differences in shopping habits and buying decisions. Available at http://www.moneycrashers.com/men-vs-women-shopping-habits-buying-decisions/. Accessed on April 2017.

Markey, O., Lovegrove, J.A. & Methven, L. 2015. Sensory profiles and consumer acceptability of a range of sugar-reduced products on the UK market. Food Research International, 72(1): 133–139.

Marquis, M. 2005. Exploring convenience orientation as a food motivation for college students living in residence halls. International Journal of Consumer Studies, 29(1): 55–63.

Marquis, M. & Manceau, M. 2007. Individual factors determining the food behaviours of single men living in apartments in Montreal as revealed by photographs and interviews. Journal of Youth Studies, 10(3): 305–316.

Merrill, C.G. 1997. Reliability and validity of the motivation for eating scale. Masters Dissertation, Utah State University.

Miklavec, K., Pravst, I., Grunert, K.G., Klopcic, M. & Pohar, J. 2015. The influence of health claims and nutritional composition on consumers' yoghurt preference. Food Quality and Preference, 43(1): 26–33.

Naughton, P., McCarthy, S.N. & McCarthy, M.B. 2015. The creation of a healthy eating motivation score and its association with food choice and physical activity in a cross sectional sample of Irish adults. International Journal of Behavioural Nutrition and Physical Activity, 12 (74): 1–10.

Nielsen. 2015. We are what we eat: healthy eating trends around the world. Available at: https://www.nielsen.com/content/dam/nielsenglobal/eu/nielseninsights/pdfs/Nielsen%20Global%20Health%20and%20Wellness%20Report%20-%20January%202015.pdf. Accessed on January 2017.

Pietersen, J. & Maree, K. 2007. Standardisation of a questionnaire. In: First steps in research (Maree, K., Creswell, J.W., Ebersohn, L., Eloff, I., Ferreira, R., Ivankova, N.V., Jansen, J.D., Nieuwenhuis, J., Pietersen, J., Plano Clark, V.L. & van der Westhuizen, C., eds,), 1sted. South Africa: Van Schaik.

Prescott, J., Young, O., O'Neill, L., Yau, N.J.N. & Stevens, R. 2002. Motives for food choice: a comparison of consumers from Japan, Taiwan, Malaysia and New Zealand. Food Quality and Preference, 13(1): 489–495.

Renner, B., Sproesser, G., Strohbach, S. & Schupp, H.T. 2012. Why we eat what we eat. The eating motivation survey (TEMS). Appetite, 59(1): 117–128.

Ronquest-Ross, L.C., Vink, N. & Sigge, G.O. 2015. Food consumption changes in South Africa since 1994. South African Journal of Science, 11(9-10): 1–12.

Schiffman, L.G. & Kanuk, L.L., 2014. Consumer behaviour: global and Southern African perspectives. Upper Saddle River, New Jersey: Pearson.

Sobal J., Bisogni, C.A., Devine, C.M., & Jastran, M. 2006. A conceptual model of the food choice process over the life course. In The psychology of food choice (Shepherd, R. and Raats, M., eds.). Wallingford, UK: CAB International. (pp. 1 –18).

Solomon, M.R., Bamossy, G., Askegaard, S. & Hogg, M.K. 2010. Consumer Behaviour: a European perspective. Essex: Pearson.

South Africa. 2015. Government notice: Regulations relating to the classification, packing and marking of dairy products and imitation dairy products intended for sale in the Republic of South Africa (Notice R260, 38615:5). Pretoria: Government gazette.

Steptoe, A., Pollard, T.M. & Wardle, J. 1995. Development of a measure of the motives underlying the selection of food: the food choice questionnaire. Appetite, 25(1): 267–284.

Temple, N.J., & Steyn, N.P. 2013. Sugar and health: a food-based dietary guideline for South Africa. South African Journal Clinical Nutrition, 26(3): 100–104.

Thompson, J.L., Lopetcharat, K. & Drake, M.A. 2007. Preferences for commercial strawberry drinkable yogurts among African American, Caucasian and Hispanic consumers in the

United States. Journal of Dairy Research, 90 (11): 4974–4987.
Thuy, X.U.P. 2015. Motivations of everyday food choices. PhD Thesis, Kansas State University.
Visser, C.E. 2007. Acceptability, choice and preference of brands and flavours of dairy fruit beverages by black female consumers. Masters Dissertation, University of Pretoria.
Whitney, E. & Rolfes, S.R. 2011. Understanding Nutrition. Belmont, CA: Wadsworth.
World Health Organisation (WHO). 2014. Global status report on noncommunicable diseases. Geneva: WHO. Available at: http://www.who.int/nmh/publications/ncd-status-report-2014/en/. Accessed on January 2017.