Living away from home and the impact on University students’ eating motivation: Australia vs. Germany

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Submitted as refereed paper for:
Stream: Marketing and Communication
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This study compares the 18-24 years old University students’ motivation for food choice in Australia and Germany. The study also extends further to investigate the difference in dependent and independent students’ food motives and attitude towards healthy eating. In conducting this study, data collection was carried out using a self-administered questionnaire from University of the Sunshine Coast, Australia and BA University of Cooperative Education Ravensburg, Germany. The survey was participated by 310 students in Australia and 305 students in Germany. The study found that there is a significant difference in food motives of university students in Germany and Australia particularly in terms of convenience, sensory appeal, natural content, price and attitudes towards healthy eating. An analysis of difference between dependent German and Australian students revealed that German dependent students consume significantly less vegetable; and less meat, fish, poultry, eggs, nuts or legumes than Australians. A similar analysis conducted between independent German and Australian students indicated that independent German students have a significantly lower attitude towards healthy eating than their Australian counterparts and they eat significantly less vegetables; bread; milk yoghurt or cheese; meat, fish, poultry, eggs, nuts or legumes than independent Australian students.

Keywords: social marketing, food motives, dependent/independent, 18-24yrs, obesity
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Background

The issues of increasing obesity/overweight and their potential consequences to individuals and society have been well documented over the past ten years (World Health Organization 2005). Consequently social marketing campaigns that focus upon healthy eating are gaining popularity in most of the developed countries. Given the social and individual costs that the increasing rates of overweight and obesity have, understanding food choice from a consumer behaviour perspective may offer insights that enhance the effectiveness of healthy eating intervention strategies, especially those focused at youth. This paper examines the food choice motivations of two groups of university students from Germany and Australia in order to provide some direction for future social marketing campaigns aimed at this demographic.

Literature review

Overweight and obesity are some of the widespread problems in Western countries (Mela and Rogers 1993). Coronary heart disease, stroke and cancers, for example, are some of the major causes of death in the UK. Inappropriate diet and physical inactivity are linked with a range of adverse health outcomes (Toft et al. 2006). Approximately 56% of women and 65% of men in England are overweight ‘with a body mass index (BMI\(^1\)) of 25 to 30’ or obese ‘with BMI greater than 30’ (Mackereth and Milner 2007). Based on a recent study released by the International Association for the Study of Obesity (IASO), the proportion of overweight people in Germany has not changed during the last 20 years but the proportion of obese individuals has increased considerably. The study also reported that, among the European Union countries, Germany had the most overweight people. Around 70% of men and 50% of women in Germany are overweight or obese (Mensink, Lampert, Bergmann 2005). In Australia, the proportion of

\(^1\) Body mass index (BMI) is defined as the individual's body weight divided by the square of their height. The formulas universally used in medicine produce a unit of measure of kg/m\(^2\).
overweight or obese people in the age group of 18 to 24 years who are classified as overweight has risen from 16% to 22% since 1995, while the proportion considered obese increased from 5% to 7% during the same period (Australian Bureau of Statistics 2006, pp. 51-52). Overall, there is an increasing concern for obesity and overweight in Germany, United States, UK and other western countries (Deutsche Welle 2007, Cawley et al 2007).

The literature suggests that obesity can cause both physical and psychological consequences such as hypertension, asthma, breathing disorder, socially inept and lazy, negative self-image or decreased self-esteem (Noble et al. 2007, Peck and Lightsey 2008), sweating during normal daily activities, sleeping problems, daytime sleepiness, low self-esteem, low vitality, depressive mood (Hach et al. 2006). Therefore, to reduce the threat of possible disease and health care costs, it is necessary to take necessary measures to prevent obesity (Lobstein and Baur 2005). Obesity is influenced by a number of factors including the quantity and quality of food consumed, the level of physical exercise, lack of time for cooking, greater availability of high-energy foods/takeaways, decline in cooking skills for healthy eating, misleading or inadequate food labelling and consumer information (Catford and Caterson 2003).

For young children, parents have a great influence in food decisions but after 8 years of age other factors such as TV advertisement, nutrition education and peer pressure play an important role in making food choices (Hamilton-Ekeke and Thomas 2007). Past studies reveal that if the school children have an opportunity of making food choices, they tend to choose high fat food which would possibly result in imbalanced diet (Eves et al. 1997). The food environment at school can also have a significant effect on young adults’ food behaviour (French et al. 2004).

Eating behaviour or meal pattern ‘food and nutrient intake pattern’ is affected by the individual differences, interpersonal influences (Marquis 2004), convenience (Marquis 2005), social and physical environments such as living at home and away from home, cultural differences based on racial or ethnic
background of the family (Cluskey et al. 2008). Eating behaviour is also influenced by various dimensions of food availability such as food production and manufacture, marketing, delivery and sale (Steptoe et al. 1995), and TV viewing (Eisend and Moller 2007). Conceptual model developed by Bisogni et al. (2005) demonstrates a link between food management skills and food choice capacity. Four components of the model are: standards ‘changing expectations of what and how we should eat’, food management skills ‘knowledge and abilities to keep food costs down and to cook and prepare meals’, circumstances ‘personal, social and environmental influences such as income, having a spouse or a partner, work schedules, health conditions, employment etc.’, and food choice capacity ‘ability to meet standards’.

One study that examined the eating pattern of young people by gender and race in the United States reported that average intakes of female and black youths did not meet the recommended level in some vitamins/minerals and fruit and vegetables (Levine and Guthrie 1997). A recent study in the United States has also shown an association of racial discrimination with increased BMI and obesity among Asian Americans (Gee et al. 2008). Influence of gender and work hours in eating behaviour has also been discussed in the case of Australian University students (Piggford et al. 2008). Young adults who live away from home have been reported to have symptoms of binge eating compared to those who live with their parents at home (Barker and Galambos 2007).

Thus the critical importance of early intervention to establish healthy eating habits has driven many of the youth-centered social marketing campaigns around the world. In Australia, evidence exists that young adults, as opposed to older adults, are not only more likely to be overweight or obese, but they are also less likely to consume the minimum recommended daily amount of fruit and vegetables (Australian Bureau of Statistics 2006). Such trends suggest that benefits may be derived from exploring the factors which influence their food choices, as we have in this research.
In the absence of empirical evidence, we suspected that where people live is one factor that may influence attitude toward food choice. In Australia and Germany young adulthood represents a transitional stage in life when adult independence and self-responsibility are actualized; attending university is one of the catalysts to many young adults moving away from the family home to begin living independently.

The transition from dependent to independent living, which often coincides with enrolment in tertiary education, has an impact on food choices for many young people. However, food preferences are formed much earlier in life. Whilst some researchers have found that newborn babies demonstrate preferences for sweet tastes, and dislike of bitter or sour tastes (Steiner 1977; Rosenstein and Oster 1988), others have tracked the development of taste prenatally into the womb (Savage, Fisher and Birch 2007) as many flavours in the mother’s diet have been found in the amniotic fluid some of which is consumed by the foetus. However, whilst a child’s first experiences with flavour might occur prior to birth (Savage et al. 2007), there appears to be general acceptance in the literature that the first five years of life is an important time to provide a foundation for eating behaviours and choices (Savage et al. 2007; Westenhoefer 2002). However, other researchers (Branen and Fletcher 1999) suggest that less is understood about how food habits track from childhood into adulthood.

A number of studies report similar findings about food choice behaviour, in that tertiary education students’ generally do not make healthy food choices. In American studies, for example, Tavelli et al. (1998) found that only 8% of college students consumed the minimum recommended intake for each of the food groups. Haberman and Luffey (1998) reported that more than 80% of college students consume inadequate quantities of grains, dairy products and fruit and vegetables, while Huang et al. (2003) found 69% of college students were not consuming the recommended amount of fruit and vegetables. Indeed, Germans with a Hauptschulabschluss (those who finish school after 9th grade, with no further education) are twice as likely to be overweight or obese than Germans with an Abitur (general qualification for university entrance; finishing school after 13th grade) or Fachhochschulreife (finishing school after 12th
Of particular relevance to our research was a United Kingdom study of young adults aged 18 to 25 years. While this study by Beasley et al. (2004) was limited to investigating the consumption of specific food types rather than quantities and frequencies of food groups, and respondents were not restricted to tertiary education students, it did provide some initial indications of a relationship between place of residence and healthy food choices. This study found that respondents who lived independently were more likely to consume a ‘good’ diet than those living in the family home (Beasley et al. 2004). One explanation for such behaviour is that independent living brings with it the responsibility of various food-related activities such as budgeting, purchase, preparation and cooking, which are skills that young adults may not possess when transitioning from a dependent living arrangement (Beasley et al. 2004; Crossley and Nazir 2002).

Although there is some research available on university students and their food choice behaviour, little research has focused on the differences between independent and dependent young adults’ behaviour in regard to healthy eating. Therefore, this study investigates the following research questions:

**Research question 1:** Is there a difference in food motives and serving of food between university students in Germany and Australia?

**Research question 2:** Is there a difference in food motives and the serving of food by the type of residence (dependent or independent) of Australian and German students?

**Method**

This project used a descriptive research design in a cross-sectional setting. The research involved the self-administration of a questionnaire with 305 university students in Germany and 310 in Australia. For our study, the questionnaire was pre-tested on an expert panel and on a subsequent pilot with a small sample
of respondents from the target population. Quota sampling was applied due to the unavailability of an appropriate sampling frame and this method of sampling ensured control of particular characteristics of the target population (Moser 1952; Moser and Stuart 1953). Quota sampling is a two-stage process. The first stage involves determining which strata, or control characteristics, will be used (Hair et al. 2003). Characteristics commonly used as quota controls include gender, age and education level (Moser & Stuart 1953). The second stage involves determining the sample size and then establishing quotas for each control characteristic, ensuring that each characteristic approximates those of the target population. The sample can then be selected according to the quotas for each control characteristic (Hair et al. 2003).

Quantitative data was collected randomly from young adults aged 18 to 24 years at the German and Australian universities. We used a drop-off technique with our questionnaire in which 1) the researcher randomly approached prospective respondents, 2) introduced the purpose of the study to the prospect, 3) invited them to participate, 4) screened them for eligibility, 5) left the questionnaire with them to complete, and 6) returned at a later point in time to collect the completed questionnaire (Burns and Bush 2003). This technique not only reduced the degree of interviewer bias but also allowed for a quick turnaround time, as well as person-to-person contact giving the researcher the opportunity to build rapport with the prospective respondent (Dillman 2002; Malhotra et al. 2002).

Notably, students who required a special diet due to a medical condition were excluded from our study and gender was employed as the control characteristic as recommended by Moser and Stuart (1953). As such, the ratio of males to females in the target population is reflected in the quotas for the samples; useable data from Germany included 111 males and 194 females whilst, in Australia, useable data from 124 males and 186 females was collected. In order to minimize selection bias, data was collected on different days, at various times and in an assortment of locations around the campuses (Sudman 1980; Sudman and Kalton 1986), including outside classrooms, the campus eateries and high and low traffic communal areas.
Measures for 1) attitudes toward healthy eating, 2) residence and 3) food choice were adapted from existing literature (e.g. Bagozzi and Warshaw 1990, Steptoe, Pollard & Wardle 1995, Marquis 2005). Firstly, attitude towards healthy eating was measured by five semantic differential scales. Measures concerning residence were created based on definitions of independence and dependence provided by Crossley and Nazir (2002) as well as Beasley et al. (2004). Food choice was measured by adapting questions from the 2004-2005 Australian National Health Survey (NHS) (Australian Bureau of Statistics 2006) which is an accepted measure that has been used in similar studies. The dimensions of food motives used in this study are health, mood, convenience, sensory appeal, natural content, price, weight concern, familiarity, ethical concern and attitudes towards healthy eating. To enhance accurate assessment of food portion size, the questionnaire was accompanied by a series of color photographs depicting sample serves of various foods from each of the five food groups examined. Food serves included in the study are vegetables; fruits; bread; milk, youghurt or cheese; meat, fish, poultry, eggs, nuts or legumes.

**Results**

In terms of motivation for food choice, the most important characteristic was *price* for both the German and Australian students. For German students living in the family home, *health, sensory appeal* and *price* were most important to them when choosing food, whilst the Australian students rated *price* and *convenience* as most important to them in terms of food motives. For both German and Australian students living independently, *price* was the most important consideration. *Ethical concerns* were of least concern to students in both countries.

*Response to research question 1:* The first research question was concerned with whether there was a significant difference in food motive and the serving of food between university students in Germany and Australia.
The figures in Table 1 suggest that there is a significant difference in the motivation of university students for food choice in Germany and Australia particularly in terms of convenience, sensory appeal, natural content, price and attitudes towards healthy eating. The comparison indicates German students are lower in these dimensions except for natural content. However, there is no evidence of difference in these countries in the following dimensions: health, mood, weight concern, familiarity, and ethical concern.

(Table 1 about here)

When attention is focused on the consumption pattern of food, it was found that German students ate significantly less amounts of vegetables; milk, yoghurt or cheese; meat, fish, poultry, eggs, nuts, or legumes; and also the total number of serves than did Australian students. There is, however, no significant difference in the consumption of fruit and bread between Germany and Australia. The high level of obesity thus leads to a question of other lifestyle difference such as amount of exercise, how people spend their time and so forth. This study, however, does not cover the lifestyle aspect.

Response to research question 2: Our second research question was concerned with whether there was a difference in food motive and the serving of food by the type of residence ‘dependent or independent’ of Australian and German students.

This question has been addressed for dependent and independent students. Those students who lived with their parents or grandparents were considered as dependent and those who lived in student accommodation, shared accommodation or their own house or apartment were considered as independent. The figures in Table 2 suggest that German dependent students have significantly different food motives in the following areas: convenience, sensory appeal, natural content and price. In terms of food serving, dependent German students consume significantly less vegetables; and less meat, fish, poultry, eggs, nuts or legumes than did Australian students. However, there is no evidence of difference in the consumption
of fruit; bread; milk, yoghurt or cheese; and also the total number of serves between dependent German and Australian students.

(Table 2 about here)

Similar analysis conducted for independent German and Australian students shows that independent German students have a significantly lower attitude towards healthy eating than their Australian counterparts. In terms of food motives, they are significantly lower than Australian in the following dimensions: health, convenience, sensory appeal, and price but significantly higher in natural content. In terms of serving of food, independent German students eat significantly less vegetables; bread; milk yoghurt or cheese; meat, fish, poultry, eggs, nuts or legumes than independent Australian students. This is also the case for total number of serves.

Discussion and strategic implications

This study investigated the difference in motivation for food choice between university students in Germany and Australia. The study found few significant differences in the motivation of university students in Germany and Australia for food choices. The findings indicate Germany significantly lower in convenience, sensory appeal, price and attitudes towards healthy eating. The results also suggest that Germans ate significantly less amount of vegetables; milk, yoghurt or cheese; meat, fish, poultry, eggs, nuts, or legumes; and also the total number of serves. There is, however, no significant difference in the consumption of fruit and bread between Germany and Australia. In spite of having no difference in the concern for weight in these two countries Germans are more obese than Australians. The high level of obesity thus leads to a question of other lifestyle difference such as amount of exercise, how people spend their time and so forth. This study, however, does not cover the lifestyle aspect. The future study, therefore, should integrate the lifestyle aspect in such studies to reach a definite conclusion of why Germans are more obese than Australians.
The study also investigated whether there was a difference in the motivation for food choice and attitudes for healthy eating for students who lived in their family home (dependent) and those who lived away from home (independent) for 18 to 24 years old University students in Germany and Australia. The results suggest that in terms of food serving, dependent German students consume significantly less vegetable; and less meat, fish, poultry, eggs, nuts or legumes than Australians. However, there is no evidence of difference in the consumption of fruit; bread; milk, yoghurt or cheese; and also the total number of serves between dependent German and Australian students. Independent German students, on the other hand, have a significantly lower attitude towards healthy eating than their Australian counterparts. In terms of food motives, they are significantly lower than Australian in the following dimensions: health, convenience, sensory appeal, and price but significantly higher in natural content. In terms of serving of food, independent German students ate significantly less vegetables; bread; milk yoghurt or cheese; meat, fish, poultry, eggs, nuts or legumes than independent Australian students. This is also the case for total number of serves. Consistent with the contentions of Beasley et al. (2004) and Crossley and Nazir (2002), it is suspected that independent respondents are likely to assume greater personal responsibility for their food choices in comparison to dependent respondents, whose food choices may be somewhat controlled by their parent(s). However, further research is required to empirically ascertain why this difference exists.

It is also found that the most important characteristics in terms of food choice for German students living in the family home were **health, sensory appeal** and **price**, whilst, for independent students, **price** was overwhelmingly the most important characteristic. In Australia, along with price and sensory appeal, convenience was also very important factor for dependent student. For independent students, even in Australia price was the most dominant factor. Based on various past studies (Woolridge 2008; Cawley et al. 2007; Noble et al 2007; Lobstein and Baur 2005; Bisogni et al. 2005), attention should be drawn to the following strategies for managing/reducing over-weight and obesity:
- Launch social marketing campaigns to educate parents and family members in relation to physical activity practices and nutritional value of different foods
- Initiate promotional measures using leaflets which indicate dietary intake requirement for healthy living
- Promote positive aspects of healthy food choice
- Involve retail stores in this campaign and get them to display the benefits of healthy eating with a list of healthy food
- Increase public awareness of advantages and disadvantages of fast food eating (such as McDonald, KFC, etc. etc.)
- Involve food providers in promoting healthy eating by providing low-fat food with high in desirable minerals/good vitamins and fiber such as fruits and vegetables, low fat dairy products, soy products, lean meat etc.
- Develop healthy school policies with regard to school cafeterias, vending machines and snack bars, physical activity classes and recess activities
- Linking of school practice with home and community activities with regard to eating behaviour and physical activities
- Develop flexibility and promote lifelong learning - recognition of the fact that standards in food choice can change with time
- Involve all groups in the community irrespective of their culture, ethnic or racial group or gender difference using appropriate technique.

However, based on the review of the obesogenic environment, Harker et al. (2008) observed that most of the past interventions strategies have been ineffective and presented eight criteria to assist social marketers in developing more useful intervention strategies. The criteria include relevance, environment, accessible enlightened settings, congruence, home foundation, framework, achieve involvement and rigour.
References


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**TABLE 1: Test of difference in the food motives and serving of food that influence food choice by respondents’ country – Germany vs. Australia**

<table>
<thead>
<tr>
<th>Food motives and serving of foods</th>
<th>Germany Mean (N) (SD)</th>
<th>Australia Mean (N) (SD)</th>
<th>t-value</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Food motives</strong>&lt;sup&gt;2&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td>3.48 (300) (0.54)</td>
<td>3.52 (303) (0.65)</td>
<td>-0.94</td>
<td>Equal</td>
</tr>
<tr>
<td>Mood</td>
<td>3.18 (300) (0.63)</td>
<td>3.18 (303) (0.67)</td>
<td>0.015</td>
<td>Equal</td>
</tr>
<tr>
<td>Convenience</td>
<td>3.39 (300) (0.81)</td>
<td>3.63 (303) (0.63)</td>
<td>-4.22***</td>
<td>Lower</td>
</tr>
<tr>
<td>Sensory appeal</td>
<td>3.49 (300) (0.61)</td>
<td>3.72 (303) (0.56)</td>
<td>-4.92***</td>
<td>Lower</td>
</tr>
<tr>
<td>Natural content</td>
<td>3.36 (300) (0.70)</td>
<td>2.89 (303) (0.86)</td>
<td>7.41***</td>
<td>Higher</td>
</tr>
<tr>
<td>Price</td>
<td>3.69 (300) (0.66)</td>
<td>3.89 (303) (0.71)</td>
<td>-3.56***</td>
<td>Lower</td>
</tr>
<tr>
<td>Weight concern</td>
<td>3.19 (300) (0.97)</td>
<td>3.14 (303) (1.02)</td>
<td>0.64</td>
<td>Equal</td>
</tr>
<tr>
<td>Familiarity</td>
<td>2.77 (300) (0.66)</td>
<td>2.86 (303) (0.76)</td>
<td>-1.51</td>
<td>Equal</td>
</tr>
<tr>
<td>Ethical concern</td>
<td>2.59 (300) (0.78)</td>
<td>2.54 (303) (0.85)</td>
<td>0.87</td>
<td>Equal</td>
</tr>
<tr>
<td>Attitudes towards healthy eating</td>
<td>3.71 (292) (0.63)</td>
<td>3.86 (303) (0.69)</td>
<td>-2.89**</td>
<td>Lower</td>
</tr>
<tr>
<td><strong>Serving of food</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>2.14 (297) (1.24)</td>
<td>2.58 (303) (1.33)</td>
<td>-4.25***</td>
<td>Lower</td>
</tr>
<tr>
<td>Fruit</td>
<td>1.58 (300) (0.65)</td>
<td>1.47 (303) (0.72)</td>
<td>1.94</td>
<td>Equal</td>
</tr>
<tr>
<td>Bread</td>
<td>2.44 (300) (0.97)</td>
<td>2.60 (303) (1.02)</td>
<td>-1.94</td>
<td>Equal</td>
</tr>
<tr>
<td>Serves of milk, yoghurt or cheese</td>
<td>1.55 (300) (0.62)</td>
<td>1.68 (303) (0.60)</td>
<td>-2.48*</td>
<td>Lower</td>
</tr>
<tr>
<td>Serves of meat, fish, poultry, eggs, nuts or legumes</td>
<td>0.74 (300) (0.44)</td>
<td>0.94 (303) (0.24)</td>
<td>-6.93***</td>
<td>Lower</td>
</tr>
<tr>
<td>Total number of serves&lt;sup&gt;3&lt;/sup&gt;</td>
<td>8.45 (297) (2.23)</td>
<td>9.27 (303) (2.42)</td>
<td>-4.33***</td>
<td>Lower</td>
</tr>
</tbody>
</table>

† stands for p < 0.10, * stands for p < 0.05, ** stands for p < 0.01, *** stands for p < 0.001

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<sup>2</sup> On a 5-point scale with 1 = not important at all to 5 = very important.

<sup>3</sup> Maximum no of serves = 14 where low = 0 to 7 and high = 8 to 14.
TABLE 2: Test of difference in the food motives and serving of food that influence food choice by respondents’ country – Germany vs. Australia for dependent students

<table>
<thead>
<tr>
<th>Food motives and serving of foods</th>
<th>Germany Mean (N) (SD)</th>
<th>Australia Mean (N) (SD)</th>
<th>t-value</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Food motives</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td>3.55 (82) (0.55)</td>
<td>3.47 (173) (0.65)</td>
<td>0.98</td>
<td>Equal</td>
</tr>
<tr>
<td>Mood</td>
<td>3.15 (82) (0.65)</td>
<td>3.17 (173) (0.67)</td>
<td>-0.17</td>
<td>Equal</td>
</tr>
<tr>
<td>Convenience</td>
<td>3.29 (82) (0.80)</td>
<td>3.63 (173) (0.63)</td>
<td>-3.70***</td>
<td>Lower</td>
</tr>
<tr>
<td>Sensory appeal</td>
<td>3.56 (82) (0.59)</td>
<td>3.73 (173) (0.56)</td>
<td>-2.18*</td>
<td>Lower</td>
</tr>
<tr>
<td>Natural content</td>
<td>3.39 (82) (0.67)</td>
<td>2.83 (173) (0.83)</td>
<td>5.37***</td>
<td>Higher</td>
</tr>
<tr>
<td>Price</td>
<td>3.58 (82) (0.67)</td>
<td>3.85 (173) (0.69)</td>
<td>-2.91**</td>
<td>Lower</td>
</tr>
<tr>
<td>Weight concern</td>
<td>3.14 (82) (1.03)</td>
<td>3.06 (173) (1.02)</td>
<td>0.56</td>
<td>Equal</td>
</tr>
<tr>
<td>Familiarity</td>
<td>2.84 (82) (0.64)</td>
<td>2.88 (173) (0.75)</td>
<td>-0.46</td>
<td>Equal</td>
</tr>
<tr>
<td>Ethical concern</td>
<td>2.68 (82) (0.86)</td>
<td>2.56 (173) (0.84)</td>
<td>1.09</td>
<td>Equal</td>
</tr>
<tr>
<td>Attitudes towards healthy eating</td>
<td>3.73 (79) (0.64)</td>
<td>3.70 (173) (0.69)</td>
<td>0.34</td>
<td>Equal</td>
</tr>
<tr>
<td><strong>Serving of food</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td>2.13 (82) (1.12)</td>
<td>2.53 (173) (1.19)</td>
<td>-2.54*</td>
<td>Lower</td>
</tr>
<tr>
<td>Fruit</td>
<td>1.67 (82) (0.65)</td>
<td>1.49 (173) (0.72)</td>
<td>1.91</td>
<td>Equal</td>
</tr>
<tr>
<td>Bread</td>
<td>2.63 (82) (0.95)</td>
<td>2.54 (173) (1.03)</td>
<td>0.72</td>
<td>Equal</td>
</tr>
<tr>
<td>Serves of milk, yoghurt or cheese</td>
<td>1.61 (82) (0.58)</td>
<td>1.64 (173) (0.65)</td>
<td>-0.31</td>
<td>Equal</td>
</tr>
<tr>
<td>Serves of meat, fish, poultry, eggs, nuts or legumes</td>
<td>0.84 (82) (0.37)</td>
<td>0.92 (173) (0.26)</td>
<td>-2.07*</td>
<td>Lower</td>
</tr>
<tr>
<td><strong>Total number of serves</strong></td>
<td>8.89 (82) (2.19)</td>
<td>9.12 (173) (2.39)</td>
<td>-0.74</td>
<td>Equal</td>
</tr>
</tbody>
</table>

† stands for p < 0.10, * stands for p < 0.05, ** stands for p < 0.01, *** stands for p < 0.001

4 On a 5-point scale with 1 = not important at all to 5 = very important.
5 Maximum no of serves = 14 where low = 0 to 7 and high = 8 to 14.