

**Time perspectives and convenience food consumption among teenagers in Vietnam: The dual role
of hedonic and healthy eating values**

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Acknowledgements

The financing of the work by Vietnamese Ministry of Education and Training (Project B2017-TSN-06)
and Norwegian Research Council (Project No. 167553) is gratefully acknowledged.

Article type: Research paper

Targeting journal: Food Research International

May 2017

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ABSTRACT

This study uses the subscales of Consideration of Future Consequences (CFC) to explore the effects of future (CFC-future) and immediate (CFC-immediate) on convenience food consumption among teenagers in Vietnam. Furthermore, we investigate the mediating and dual role of hedonic and healthy eating values in the relationships between CFCs and convenience food consumption. Survey data from 451 teenagers in Central Vietnam and structural equation modelling were used to test the relationships in a proposed theoretical model. The results indicate that while CFC-immediate and hedonic eating value has a positive direct effect, CFC-future and healthy eating value has a negative direct effect on convenience food consumption. The findings also reveal that both CFC-immediate and CFC-future have positive effects on hedonic and healthy eating values. However, this study argues and tests the relative importance of the direct (asymmetric) effects of time perspectives on eating values, and finds that while CFC-future dominate in explaining healthy eating values, CFC-immediate dominate in explaining hedonic eating values.

Keywords. Convenience food, time perspectives, hedonic and healthy eating values, dual perspectives.

1. Introduction

Convenience food and fast food have become a prominent feature of the diet of children in Western countries and increasingly throughout the world (Olsen, Menichelli, Sørheim, & Næs, 2012).

Convenience food is defined as food that enables consumers to save time and effort in food activities related to achieving, planning, preparation, consumption, and post-meal activities in order to save time, physical energy, and mental effort (Buckley, Cowan, & McCarthy, 2007). For example, De Boer, McCarthy, Cowan, and Ryan (2004) define ready meals, take-away meals, and restaurant meals as different categories of convenience food. According to Costa, Dekker, Beumer, Romboust, and Jongen (2001), convenience food reflects various degrees of readiness for consumption from ready-to-eat or -heat, and ready-to-end-cook or -cook. Thus, this study includes different kinds of fast food or ready-to-eat foods (e.g., hamburgers, snacks, instant noodles) that are consumed at home, at restaurants, or outlets as convenient meals, and uses the broad categorical term ‘convenience food’ throughout this paper.

Convenience food typically contains a higher amount of salt, fats, and sugar, and is thus considered to be unhealthy (Dunn, Mohr, Wilson, & Wittert, 2011). Tastiness is an important determinant of teenagers’ preference for and consumption of convenience foods (Fitzgerald et al., 2010). In developing countries such as Vietnam, the convenience food market has boomed in recent years with a much higher growth rate (15–20%) than the average rate of the world (5–7%) over the past 10 years.¹ Health issues are seriously problematic with about 25% of the population being overweight or obese; in particular, this ratio is quite high for teenagers (approximately 30%) and is even higher in big cities like Ho Chi Minh City or Hanoi.² Vietnamese teenagers comprise about one-third of the population.³ Thus, the public authorities are concerned about the social/health and socio-economic consequences of a high percentage of overweight children and teenagers (Huong et al., 2015).

¹ Euromonitor; ² Vietnamese Preventive Medical Office, 2015; ³ Vietnamese General Directorate of Statistics 2014.

Regardless of the variety of factors that may impact food decisions (Steptoe, Pollard, & Wardle, 1995), including convenience food consumption (Bublitz, Peracchio, & Block, 2010; Dunn et al., 2011), only a few studies discuss the dual roles of both healthy eating values (as utilitarian values such as weight control or keeping a good health status) and pleasure eating values (as hedonic values such as getting pleasure from eating) as important factors influencing convenience food consumption (Babin, Darden, & Griffin, 1994). While hedonic eating values (e.g., tastiness) tend to lead to overeating, healthy eating values (e.g., weight control or good health) unhealthy food choices or increased decisions to eat convenience food (Dunn et al., 2011; Bublitz et al., 2010). Thus, the inclusion of both healthy eating values and hedonic eating values as trade-off values (dual roles) between time perspectives (personality traits) and food choice may give new theoretical and empirical insight about what drives or motivates Vietnamese teenagers' convenience food consumption.

Eating behaviours are often determined by individual's consideration of future consequences (CFCs) as trade-offs between immediate outcomes (e.g., pleasure, time, or convenience) and future outcomes (e.g., adverse health effects, low body mass, or longevity; Joireman, Shaffer, Balliet, & Strathman, 2012). An individual's CFC is defined by Strathman, Gleicher, Boninger, & Edwards (1994) as the extent to which people consider the potential distant outcomes of their current behaviours and are influenced by those potential outcomes. Although there is a discussion about the structure of CFC (e.g., Ryack, 2012), this study follows some recent studies and makes a distinction between CFC-future and CFC-immediate (Dassen, Houben, & Jansen, 2015; Joireman, Balliet, Sprott, Spangenberg, & Schultz, 2008; Joireman et al., 2012; van Beek, Antonides, & Handgraaf, 2013). Individuals with high CFC-future believe certain behaviours are worthwhile because of future benefits and are willing to sacrifice immediate benefits like pleasure or convenience to achieve more desirable future states. In contrast, individuals with high CFC-immediate are more concerned with maximising immediate benefits at the expense of costs or benefits that will not occur for some time.

This study seeks to answer some unexplored questions, such as ‘Do hedonic and healthy eating values have simultaneously combined impacts on convenience food consumption? Do CFC-immediate and CFC-future influence convenience food consumption directly and indirectly through hedonic and healthy eating values? If such combined effects exist, how does their relative importance differ?’ To answer our research questions, first a conceptual framework and research hypotheses on the relationships between the constructs of CFC, eating values and convenience food consumption are developed. Then the study uses structural equation modelling approach (Anderson & Gerbing, 1988) to test the proposed model and research hypotheses. Therefore, by answering these questions that focus on convenience foods in the context of a developing country like Vietnam, this study contributes to the literature by proposing that CFC-immediate and CFC-future (Sweeney & Culcea, 2017) would have different relative (asymmetric) effects on hedonic and healthy eating values. A deeper understanding of how to shift the temporal focus away from these immediate benefits towards future outcomes in order to make healthy choices (Dassen et al., 2015) is important for developing more effective communication and intervention programmes addressing (un)healthy eating behaviour (Anderson & Miroso, 2014; Bublitz et al., 2010).

2. Literature background

2.1. Dual eating motivation: Healthy versus hedonic eating value

Extant consumer research has established that consumption can take place for hedonic or utilitarian reasons, values, or attitudes (Voss, Spangenberg, & Grohmann, 2003). Hedonic and utilitarian values are not essentially two ends of a one-dimensional scale: ‘Different products can be high or low in both hedonic and utilitarian attributes’ (Okada, 2005, p. 43). In this article, we examine teenagers’ consumption of convenience food based on a dichotomisation of those two fundamental motivational value systems. Healthy eating values are conceptually defined as utilitarian values as consumers’ seeking of aesthetic benefits acquired from a food’s capacity to present a sense of nutritious value, good

health, body beauty, weight control, or to enhance personal expression (Okada, 2005). In contrast, hedonic eating values are conceptually defined as the seeking of hedonics through eating and is perceived through taste, pleasure, freedom, fun, escape from reality, fantasy, and other emotions as opposed to goal achievement (i.e., good health; Voss et al., 2003; Zurawicki, 2015).

Previous studies also state that consumers can obtain both hedonic and utilitarian values during the consumption experience (Hofmann, Friese, & Strack, 2009; Okada, 2005; Zurawicki, 2015). By nature, people are motivated to enjoy themselves; however, having fun also raises such issues as guilt and a need for justification. Therefore, consumers may consume convenience foods for hedonic eating values if at the same time they are allowed to justify healthy eating values (Okada, 2005). In addition, though human beings embody a unique ability for planned behaviour, they also often act impulsively; thus, consumers are conflicted between their long-term health values to restrain from convenience food consumption and their immediate impulses that promise hedonic fulfilment during eating convenience food (Hofmann et al., 2009). Consequently, these two conflicting values may be salient when consumers make convenience food consumption decisions. While hedonic eating values may increase the intensity of desire for convenience food and lead consumers to choose this better-tasting but less healthy option over a less-tasty but healthier option (e.g., Wilcox, Vallen, Block, & Fitzsimons, 2009), healthy eating values can influence guilt and self-presentation goals that lead consumers to justify their activated hedonic eating values (Okada, 2005).

The relationship between healthy eating values and food choice is widely discussed in the literature (Steptoe et al., 1995). Consumers who are concerned with their health often attempt to avoid eating convenience foods and limit meals eaten outside of the home, particularly at fast food restaurants (Bublitz et al., 2010). In contrast, the relationship between hedonic eating values and convenience food consumption is not fully explored except for a small amount of empirical evidence on the links between some aspects of hedonic eating values such as taste, appearance, and hedonic preferences and convenience food consumption (Tuorila & Pangborn, 1988). While aspects of hedonic value seem to be

the most important factors underlying food choice for the majority of consumers, healthy eating values are often followed (Dassen et al., 2015). Thus, the first two hypotheses of this study are as follows:

H1: Hedonic eating values have a positive effect on convenience food consumption.

H2: Healthy eating values have a negative effect on convenience food consumption.

2.2. Consideration of future consequences

Regarding both the concept and operationalisation of CFC, different perspectives exist about the construct consisting of one, two, or multiple factors (Ryack, 2012; Zhang, Kong, Zhang, & Li, 2012).

This study uses a dual system of personality and value (Hofmann et al., 2009) and accepts the perspective of a two-factor structure of individual time perspective (Joireman et al., 2008). This perspective implies that individuals may dominate in a time orientation, but the consideration of future and immediate consequences are not polar opposites. It means that individuals may consider their eating behaviour in relation to future or immediate consequences in a separate or simultaneous manner (van Beek et al., 2013; Dassen et al., 2015; Joireman et al., 2012).

Following this approach, we investigate whether ‘unhealthy’ convenience food consumption behaviour is differentially predicted by CFC-future and CFC-immediate. Furthermore, this study responds to a call for research on the unique contributions of CFC-future and CFC-immediate (Joireman et al., 2008). The research also explores their role in a specific domain: eating values and convenience food consumption (van Beek et al., 2013). Previous studies in the health domain reveal mixed and inconsistent results about the role of CFC-future and CFC-immediate and their behavioural consequences, because the health domain actually consists of multi-faceted categories comprised by fairly different behaviours (e.g., eating, smoking, or exercising; Dassen et al., 2015; van Beek et al., 2013). Based on empirical evidence supporting a link between CFCs and (un)healthy food attitudes and choices (Dassen et al., 2015; De Marchi, Caputo, Nayga, & Banterle, 2017; Joireman et al., 2008, 2012; van Beek et al., 2013), the following hypotheses are suggested:

H3: CFC-immediate has a positive effect on convenience food consumption.

H4: CFC-future has a negative effect on convenience food consumption.

2.3. Consideration of future consequences and eating values

This study extends Joireman et al.'s (2012) two-factor structure of CFC by suggesting that both CFC-future and CFC-immediate may predict healthy and hedonic eating values with different relative magnitudes. Our suggestions are based on two arguments. First, the two-factor structure of CFCs allows the testing of competing models regarding how CFCs are related to a given outcome, such as being overweight or sensory satisfaction based on the two possibilities of the perspectives of positive and negative asymmetries or bias (Elliott, Brewster, Thomson, Malcolm, & Rasmussen, 2015; Schifferstein & Desmet, 2010). The first possible asymmetry is that CFC-immediate will be more predictive of hedonic eating values as short-term expectancy beliefs than will CFC-future. This asymmetry is based on a positive bias that refers to the tendency for individuals to put more emphasis on hedonic eating values than healthy eating values, because hedonic values are the most likely to occur (i.e., immediate consequences), while health values are distant or uncertain (i.e., future consequences; Elliott et al., 2015; Schifferstein & Desmet, 2010). In contrast, an emphasis on avoiding negative consequences in the long-term (e.g., overweight, obesity, disease, or health risks), which is a negative bias, may lead consumers to limit or even sacrifice current positive consequences (e.g., tastiness) in situations where the positives and the negatives have equivalent status (e.g., eating convenience food; Elliott et al., 2015; Schifferstein & Desmet, 2010). Therefore, we propose that CFC-future will be more predictive of healthy eating value as long-term expectancy beliefs than will CFC-immediate. For example, Joireman et al. (2008) find that a high level of CFC-immediate makes one susceptible to self-control failure, whereas a high level of CFC-future buffers one against self-control failure. Similarly, Rappange, Brouwer, & Van Exel (2009) report that CFC-future tends to be a better predictor than CFC-immediate for various health beliefs and behaviours.

Second, both healthy eating values and hedonic eating values may play a role as mediators in the relationship between CFCs and convenience food consumption based on the regulatory focus theory (Higgins et al., 2001). According to this theory, people's behaviour consists of approaching goals and avoiding anti-goals, and thus differs in the orientation of prevention or promotion. Promotion people are more sensitive towards gains and less sensitive to losses and pain. In contrast, prevention people are more sensitive to losses: they are afraid of being punished for making a mistake. As clarified by Joireman et al. (2012), consumers' goal-directed strategies involved in a promotion orientation may arise from perceived future consequences of their actions (e.g., eating fish for good health status), while consumers' goal-directed strategies involved in a prevention orientation are likely to arise from immediate consequences of their actions (e.g., eating convenience food for sensory needs). Therefore, our hypotheses are as follows:

H5: CFC-immediate has a positive effect on both hedonic eating values (H5a) and healthy eating values (H5b), but CFC-immediate predicts hedonic eating values better than healthy eating values (H5c).

H6: CFC-future has a positive effect on both hedonic eating values (H6a) and healthy eating values (H6b), but CFC-future predicts healthy eating values better than hedonic eating values (H6c).

H7: CFC-immediate predicts hedonic eating values better than CFC-future.

H8: CFC-future predicts healthy eating values better than CFC-immediate.

The proposed theoretical model is presented in Figure 1.

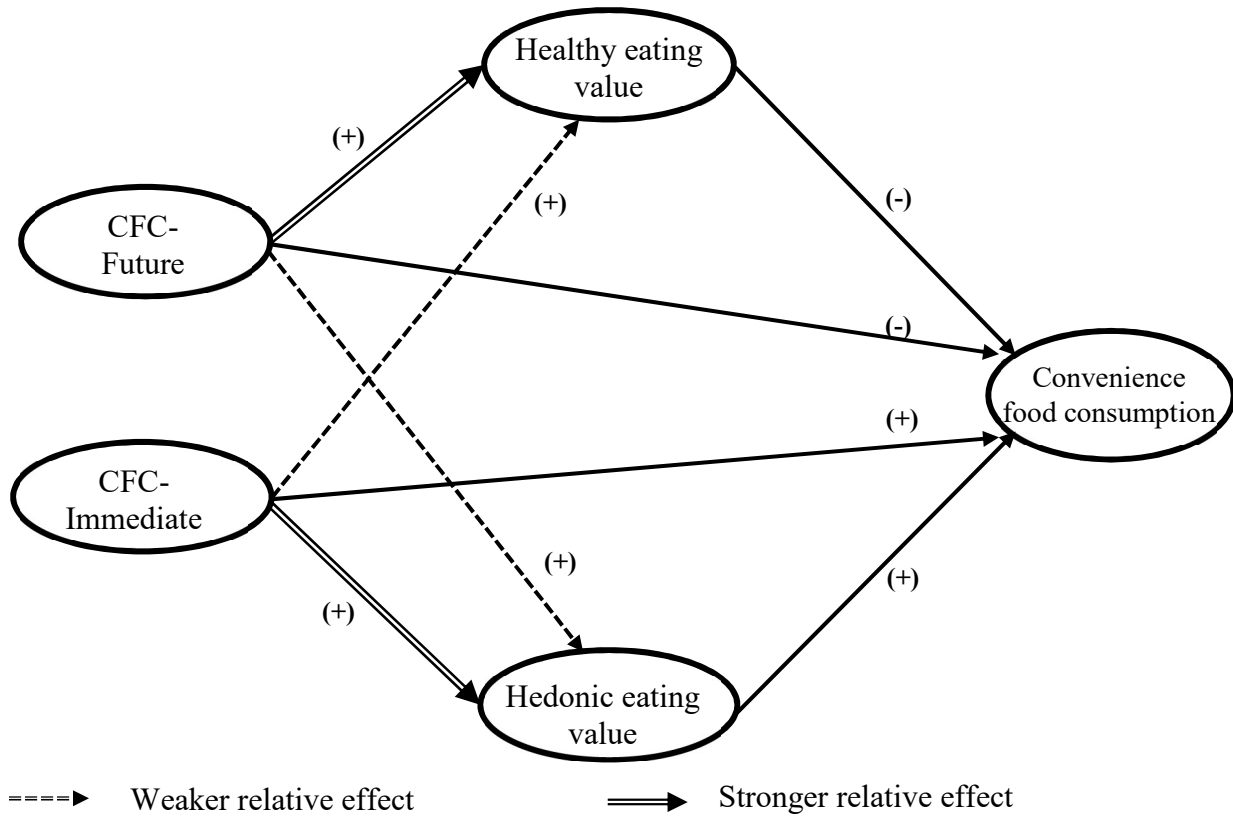


Figure 1. The proposed theoretical model.

3. Methods

3.1. Data collection and sample description

A quota sample of 451 teenagers (from a total of 500 cases, with 49 cases eliminated due to missing data or participants under 13 years old) with an equal ratio of gender and age, from 13 to 19 years, was obtained from two universities and eight secondary and high schools in Central Vietnam, an area where a range of convenience food is available and where residents' cultural characteristics are mixed and diversified. Teenagers were interviewed face-to-face at their schools. To ensure that they fully understood all of the questions, we provided a general introduction about the study and the questionnaire in the first page and a short guideline before each intended scale. We asked them to read the whole questionnaire before answering and also gave them additional explanations if they did not capture a certain part. The descriptive statistics for demographics is shown in Table 1.

Table 1. Descriptive statistics for demographic characteristics

		Frequency	Percent
Gender	Male	228	50.6
	Female	223	49.4
Education	Secondary school	175	38.8
	High school	180	39.9
	Bachelor degree	96	21.3
Age group (in years)	13	65	14.4
	14	63	14.0
	15	66	14.6
	16	66	14.6
	17	64	14.2
	18	60	13.3
	19	67	14.9
Body mass index (BMI)	Underweight	18	4.0
	Normal weight	348	73.2
	Overweight and obese	103	28.8

Notes. $BMI = Weight / Height^2$ (WHO).

The average age of the sample was about 16 years with 49.4% identifying as female and 50.6% as male. The average height of the teenagers was about 1.60 metres (ranging from 1.48 to 1.80) and the average weight was 55.6 kilograms (ranging from 39 to 79 kg). Previous studies proved that BMI is associated with food behaviours (Cavaliere, Marchi, & Banterle, 2016); therefore, this study added consumers' body mass index (BMI). The results showed a ratio of 28.8% of the sample being overweight or obese and a ratio of 4% of consumers being underweight.

3.2. Measures of the constructs and data analyses

This study used six very common types of convenience food in Vietnam (hamburgers, pizza, snacks, sausage, canned pork/poultry, and instant noodles) to measure *convenience food consumption*. Those foods are available in most food outlets or cafés in this market, particularly around schools and universities. Parents also often buy and prepare those foods for their children before going to school and/or sometimes for an everyday main meal as well. The convenience food consumption uses a one-year time framework and is assessed by a 5-point scale asking, 'Approximately how frequently have you eaten different types of the following convenience foods, on average, as a meal over the past year (1 =

very few; 2 = once per month; 3 = once per fortnight; 4 = once per week, and 5 = more often)? Summing up the consumption frequencies of the above six convenience foods generated *convenience food consumption*. This measure is analogous with several studies testing self-reports of food consumption frequency (e.g., Monge-Rojas et al., 2013).

Respondents were asked to express their *hedonic eating values* on a 5-point Likert scale starting with 'It is important to me that foods I eat...', and corresponding to five items adapted from previous studies assessing hedonic consumption values (Babin et al., 1994). Similarly, *healthy eating values*, a food-adopted version of utilitarian consumption values (Babin et al., 1994; Voss et al., 2003), was measured by five items used in previous studies (Dunn et al., 2011; see Table 2).

Strathman et al. (1994) developed a 7-item subscale for *CFC-immediate* and a 5-item subscale for *CFC-future*. Although Joireman et al. (2008; 2012) added two items for CFC-future to balance the number of items for both CFC subscales and to improve the reliability of the 5-item CFC-future subscale, we decided to use the original 12-item CFC scale (Strathman et al., 1994) for parsimonious reasons and to adapt to young respondents. Still, our measures included quite complicated cognitive, affective, motivational, and behavioural time-perspective questions for teenagers who are in the process of conceptual development (Mello, Finan, & Worrell, 2013). In addition, this study aimed to measure these two constructs by focussing on a specific domain, that is, food (van Beek et al., 2013), and required respondents to think about and to rate these items 'in relation to consuming food' using a 5-point Likert scale, containing items such as 'Relating to consuming food, my present behaviour is affected by the results I will receive in the future', or 'Relating to consuming food, to me, obtaining present value or goals is always of first and foremost importance; future consequences will be resolved later'. For teenagers and adolescents, it has been suggested that the 12-item CFC scale is unstable, and that it may be more appropriate to use a short version of the scale when measuring the CFC construct (Petrocelli, 2003). Therefore, we used fit indices and chi-squared difference tests (Voss et al., 2003) to reduce the number of items in order to avoid estimating too complex of a model of reflective constructs. The

process was iterated by re-computing the item-to-total correlations, deleting the lowest item, using a two-factor confirmatory factor analysis model (CFC-immediate and CFC-future), and conducting a difference test. The process was stopped when the chi-squared difference test was no longer significant. The scale then consisted of four items of CFC-immediate and four items of CFC-future, as presented in Table 2.

In order to ensure the internal consistency and the convergent and discriminant validity of the constructs (Anderson & Gerbing, 1988), a confirmatory factor analysis (CFA) was performed using AMOS. The fit is reported by χ^2 as well as by three other fit indices: The root mean squared error of approximation (RMSEA), goodness of fit index (GFI), and comparative fit index (CFI) (Browne & Cudeck, 1993). A structural equation model was then used to estimate the theoretical model. This model is expressed by a system of three standardised structural equations as follows:

$$\text{Convenience food consumption} = \beta_1\text{HeEV} + \beta_2\text{HhEV} + \beta_3\text{CFC-I} + \beta_4\text{CFC-F} + \varepsilon_1 \quad (1)$$

$$\text{HeEV} = \beta_5\text{CFC-I} + \beta_6\text{CFC-F} + \varepsilon_2 \quad (2)$$

$$\text{HhEV} = \beta_7\text{CFC-I} + \beta_8\text{CFC-F} + \varepsilon_3 \quad (3)$$

HeEV: Hedonic eating value; HhEV: Health eating value; CFC-I: CFC-immediate; CFC-F: CFC-future.

Furthermore, the purpose of this article is to test the relative importance of the direct (asymmetric) effects of CFC-future and CFC-immediate in turn in each pair of four relationships: (1) CFC-immediate – hedonic eating value versus CFC-immediate – healthy eating value; (2) CFC-future – healthy eating value versus CFC-future – hedonic eating value; (3) CFC-immediate – hedonic eating value versus CFC-future – hedonic eating value; and (4) CFC-future – healthy eating value versus CFC-immediate – healthy eating value. Thus, four separate multiple-group analyses were conducted. We tested the null hypotheses and found that there was no difference in each pair of the compared effects based on the chi-squared difference test. A chi-squared difference test was conducted on a constrained versus an unconstrained model. In the unconstrained model, all parameters were estimated without any constraint.

4. Results

4.1. Measurement model analysis

A CFA of the measurement model, including five constructs in the theoretical model as shown in Figure 1, results in a good fit with the data ($\chi^2 = 199.3$; $df = 143$, $p = 0.000$; RMSEA = 0.030; GFI = 0.96; CFI = 0.99; Browne & Cudeck, 1993). Tables 2 and 3 present the results of the CFA.

Table 2. Constructs, factor loadings, composite reliability, and average variance extracted

Constructs	Λ	<i>t</i> -value	CR	AVE
<i>Hedonic eating values: It is important to me that foods I eat</i>			0.82	0.47
help me escape from my daily routines	0.67	14.5		
are fun to eat	0.65	13.9		
provide me great sensory feelings (good taste, smell, appearance, appeal)	0.70	15.8		
are enjoyable to eat	0.72	16.2		
give me exciting feelings when eating	0.69	15.6		
<i>Healthy eating values: It is important to me that foods I eat...</i>			0.87	0.58
help me decrease food cravings	0.68	15.6		
do not increase my weight	0.80	19.5		
help me to avoid health issues	0.85	21.5		
help me to control my weight	0.77	18.5		
give me a good health status	0.69	16.0		
<i>CFC-future: In relation to consuming food...</i>			0.86	0.62
my present behaviour is affected by the results I will receive in the future	0.78	18.7		
when deciding to consume food products I often think about how they will affect me in the future	0.73	18.1		
I prioritise using food products that will be better for me in the future rather than those that provide me with immediate results	0.83	19.6		
I often think about the future negative consequences of the food I am currently consuming, even though negative outcomes will not occur for many years	0.80	19.2		
<i>CFC-immediate: In relation to consuming food...</i>			0.84	0.57
to me, obtaining present value or goals is always first and foremost in importance; future consequences will be resolved later	0.67	17.1		

my decision depends on the immediate purpose rather than my future goals	0.73	18.6		
my food consumption behaviour depends on the results I achieve in the present, not concerns about the long-term impact	0.76	19.6		
I usually ignore warnings about the future consequences of my food behaviour because I think that the consequences are easily resolved	0.84	20.7		
Convenience Food Consumption	1.00	30.0	-	-

Note. All factor loadings are significant at $p < .001$. A five-point Likert scale were used for measuring CFCs, hedonic and health eating values. Convenience food consumption were created by summing the consumption frequencies of six convenience foods which were originally measured by a five-point scale.

Table 3. Construct means, standard deviations (*SD*), and correlations

Constructs	Min	Max	Mean	SD	1	2	3	4	5
1. Hedonic eating value	1.00	5.00	3.39	0.96	1.00				
2. Healthy eating value	1.00	5.00	3.54	1.03	0.35	1.00			
3. CFC-Future	1.00	5.00	3.53	1.04	0.18	0.34	1.00		
4. CFC-Immediate	1.00	5.00	2.93	1.24	0.35	0.18	-0.53	1.00	
5. Consumption	6.00	27.00	12.3	5.12	0.15	-	-0.23	0.35	1.00

Note. $\chi^2 = 206.5$; $df = 143$, $p = .000$; RMSEA = 0.031; GFI = 0.95; CFI = 0.98; All correlations are significant at $p < .05$.

As shown in Table 2, all factor loadings on the constructs are highly significant ($p < .001$: t -value > 15.0) with values ranging from 0.68 to 0.83, which shows the convergent validity of the constructs. The composite reliabilities exceed the minimum value of .80, and most of the variances extracted surpass the recommended threshold of .50 (Anderson & Gerbing, 1988).

Table 3 displays the inter-correlations between the constructs in the theoretical model. All correlations are significant ($p < .001$) and below .60. In addition, the squared correlation between each pair of constructs is less than the average variance extracted from each pair of constructs, which constitutes discriminant validity (Fornell & Larcker, 1981).

4.2. Structural equation model

The estimated results of the structural model presented in Figure 1 indicate a good fit with the data ($\chi^2 = 239.0$; $df = 144$, $p = .000$; RMSEA = 0.038; GFI = 0.95; CFI = 0.98; Browne & Cudeck, 1993). As shown in Table 4, as expected, all direct effects are significant with the effect directions.

Table 4. Testing direct effects

Structural paths		Std. estimate	t-value	Conclusion
Hedonic eating value	→ Consumption	0.13	2.48*	Supported
Healthy eating value	→ Consumption	-0.12	-2.50*	Supported
CFC-Future	→ Consumption	-0.13	-2.14*	Supported
CFC-Immediate	→ Consumption	0.25	3.95***	Supported
CFC-Future	→ Hedonic eating value	0.15	2.16*	Supported
CFC-Future	→ Healthy eating value	0.33	4.78***	Supported
CFC-Immediate	→ Hedonic eating value	0.32	4.56***	Supported
CFC-Immediate	→ Healthy eating value	0.16	2.39*	Supported

Note. $\chi^2 = 246.9$; $df = 144$, $p = .000$; RMSEA = 0.040; GFI = 0.95; CFI = 0.97.

* $p < .05$; ** $p < .01$; *** $p < 0.001$; R^2 (convenience food consumption) = 16.8%.

Table 5. Testing the relative importance of direct effects

Structural Relationships		χ^2 Difference ($df = 1$)	Conclusion
CFC-I → Hedonic eating value	> CFC-F → Hedonic eating value	4.3**	Supported
CFC-F → Healthy eating value	> CFC-I → Healthy eating value	12.2**	Supported
CFC-I → Hedonic eating value	> CFC-I → Healthy eating value	3.5*	Supported
CFC-F → Healthy eating value	> CFC-F → Hedonic eating value	3.4*	Supported

Note. * $p < .05$; ** $p < .01$ (one-tail); CFC-F: CFC-future; CFC-I: CFC-immediate.

The analytical results shown in Table 4 supported the suggested hypotheses that hedonic eating values have a positive effect (H1: $\beta = 0.18$, $t = 3.67$, $p < .001$), whereas healthy eating values have a negative effect on fast food consumption (H2: $\beta = -0.15$, $t = -3.11$, $p < .01$). In addition, CFC-immediate and CFC-future have opposite significant impacts on fast food consumption (H3: $\beta = 0.23$, $t = 3.71$, $p < .001$ and H4: $\beta = -0.17$, $t = -2.74$, $p < .01$, respectively).

With regard to the direct effects of CFC-immediate and CFC-future on hedonic and healthy eating values and their relative importance, the results shown in Table 4 and 5 supported our expectations by indicating that CFC-immediate has a stronger positive effect on hedonic eating values (H5a: $\beta = 0.33$, $t = 4.67$, $p < .001$) than on healthy eating values (H5b: $\beta = 0.16$, $t = 2.40$, $p < .05$; H7: χ^2 difference = 3.9,

$df = 1, p < .05$), which supports H5c that CFC-immediate predict hedonic eating values better than healthy eating values. In contrast, CFC-future have a stronger positive effect on healthy eating values (H6a: $\beta = 0.33, t = 4.79, p < .001$) than on hedonic eating values (H6b: $\beta = 0.14, t = 2.13, p < .05; \chi^2$ difference = 3.7, $df = 1, p < .05$, one-tailed), which supports H6c that CFC-future predicts healthy eating values better than hedonic eating values. In addition, the effect of CFC-immediate ($\beta = 0.33, t = 4.67, p < .001$) is stronger than that of CFC-future on hedonic eating values ($\beta = 0.14, t = 2.13, p < .05; \chi^2$ difference = 5.0, $df = 1, p < .05$), which supports H7 that CFC-immediate predicts hedonic eating values better than CFC-future. Finally, the effect of CFC-future ($\beta = 0.33, t = 4.79, p < .001$) is stronger than that of CFC-immediate on healthy eating values ($\beta = 0.16, t = 2.40, p < .05; \chi^2$ difference = 12.2, $df = 1, p < 0.05$), which supports H8 that CFC-future predicts healthy eating values better than CFC-immediate.

5. Discussions

This study uses a dual-time (personality-value-behavioural) perspective to explore the combined and integrated roles of CFC-future and CFC-immediate on health and hedonic eating values and convenience food consumption among teenage consumers in Vietnam. The results indicate satisfactory reliability and validity of the constructs and support all our expectations within a structural equation model. Our research supports the contribution of the dual motivation perspective in explaining consumer and health behaviour. In particular, this study is the first we are aware of that discusses and provides empirical evidence supporting the different relative importance of CFC-future and CFC-immediate on both healthy and hedonic eating values to explain convenience food consumption.

5.1. Theoretical implications

Responding to the call for research into the unique contributions of CFC-future and CFC-immediate (Joireman et al., 2008), as well as exploring their role in a specific food or health behavioural domain (van Beek et al., 2013), this study finds empirical evidence supporting the two-factor structure of CFC with the opposite effects of CFC-future and CFC-immediate on convenience food consumption. While

CFC-immediate facilitates convenience food consumption behaviours, CFC-future obstructs this kind of behaviour. Convenience food eating behaviour is determined by choices involving trade-offs between immediate outcomes (e.g., satisfying hedonic need and convenience) and future outcomes (e.g., keeping the body looking good). Thus, consumers' time orientation provides a promising explanation of how people make choices for convenience food. These findings support the viewpoint that time orientation varies within individuals, and that present-oriented individuals tend to focus on the immediate consequences of their healthy eating behaviour, but future-oriented individuals are more concerned with the future consequences of their healthy eating behaviour (Dassen et al., 2015; van Beek et al., 2013).

The findings indicate that CFC-future and CFC-immediate have different relative effects on health and hedonic eating values. These findings once again support the two-factor structure of CFCs and the perspectives of asymmetric bias (e.g., Elliott et al., 2015) and contributes to answering an under-explored question about whether behaviours or consequences are better predicted by CFC-future or CFC-immediate (Joireman et al., 2008; 2012; Rappange et al., 2009; van Beek et al., 2013). However, the findings from this study have important distinctions from previous studies. For example, Joireman et al. (2012) found that both eating attitudes and behaviours were predicted by CFC-future but not by CFC-immediate, which contrasts with our findings. The difference may be caused by dissimilarity between their work and this study in measuring CFC. While they used the general CFCs, this study added a justification of 'Relating to consuming food' before each item of CFCs. This justification made respondents focus on the food domain. Therefore, the justified CFCs scale allows for further specification of the predictive value of consideration of immediate and future consequences on eating behaviour orientations (van Beek et al., 2013). Previous studies argue that CFC-future tends to adopt a promotion orientation, while those with CFC-immediate will tend to adopt a prevention orientation (De Marchi et al., 2017; Higgins et al., 2001; Joireman et al., 2012). Additionally, in relation to eating behaviour the relationship between CFC-immediate and short-term self-control exists (Joireman et al., 2008; van Beek et al. 2013). However, our findings reveal that healthy eating values are not only

positively predicted by CFC-immediate, but also by a stronger positive effect of CFC-future. This means that teenage consumers may consider healthy eating value as a regular long-term goal, while in the short-term this goal is balanced by other goals, such as hedonic needs (Anderson & Miroso, 2014; Bublitz et al., 2010).

In contrast, our findings also reveal that hedonic eating values are better predicted by CFC-immediate than by CFC-future, which implies that hedonic eating values may not only be considered as a goal pursued mainly in the short-term, but also partly pursued in the long-term. This reality may come from the research context of a developing country like Vietnam, where for low-income households, the improvement of meal quality (e.g., tastiness, energy, nutrition, and the like) is always a priority in most families (Huong et al., 2015). A possible explanation for our findings could be that consumers have shown that they have the ability to construct possible outcomes that meet both goals simultaneously (Fishbach & Zhang, 2008). Therefore, our findings have suggested interesting contributions to a deeper understanding of how consumers' individual time perspectives are related to healthy eating values and behaviour.

This study includes both health and hedonic eating values and finds empirical evidence supporting their simultaneous effects on convenience food consumption. The findings support the dual system perspective (Hofmann et al., 2009) and are consistent with most previous studies in health behaviour including convenience food consumption (Bublitz et al., 2010; Dunn et al., 2011). However, while most previous studies investigated the separate effects of healthy eating values or hedonic eating values, this study structures health and hedonic eating values as general constructs within a structural equation model and finds their simultaneously opposite effects on convenience food consumption. Therefore, in addition to providing additional evidence, this study contributes to a more integrated and comprehensive view of (un)healthy eating behaviour at least in explaining convenience food consumption.

5.2. Practical implications

This study explains teenagers' convenience food consumption focussing on health issues and confirms that both health and hedonic eating values as well as time orientations (CFC-future and CFC-immediate) are important to understand the research phenomenon. Some managerial implications should be noted. It is worthy noticing that the ratio of overweight and obese teenagers is about one-third; therefore, this is a social issue requiring public policies that may limit convenience food consumption. While there are not many convenience foods available that can provide both health and hedonic eating values, raising consumer knowledge about the negative consequences of convenience food consumption in the future may be an effective communication program to limit the status of being overweight and obese in this country. Although health practitioners usually recommend that people should stop eating convenience foods, this recommendation is also often unrealistic. Thus, instead of insisting that consumers stop these ingrained behaviours, the focus should be on shifting these behaviours, encouraging consumers to choose healthier convenience food options as a new tactic to address health issues, such as being overweight and obese (Anderson & Miroso, 2014). In addition, building and communicating about a fit body as a symbol of health, well-being, status, and beauty may be effective. Food policy makers should develop appropriate messages to encourage such a symbol and simultaneously minimize an image of a fat body as a symbol of beauty. In this country, these messages not only focus on teenagers, but also on their parents in particular who often like to fatten children up as evidence to their conscientiousness and skilfulness in taking care of them.

Finally, time perspectives based on a regulatory focus approach (Crowe & Higgins, 1997) may propose taxes or extra fees on the content of fats and sugars in producing unhealthy convenience foods to form subsidies that will encourage the production and consumption of healthy foods (Cawley, 2006). Food policy makers should also generate educational programs that can encourage teenagers to decrease their consumption of convenience foods in favour of healthy foods such as fish or fruit. For example, explaining the relationship between portion size and energy intake, weight gain, and health may be needed, especially for teenagers who show higher incidences of obesity (Witkowski, 2007).

5.3. Limitations and future research

Some limitations should be noted. The present research is based on a non-representative sample of Vietnamese teenage consumers; thus, future studies should use more representative samples. This study focusses only on some specific items of convenience food. Future studies should investigate different categories of convenience foods, like fast and ready-to-eat food (Costa et al., 2001), and extend the model to different health-related behaviours such as smoking, drinking, exercising, or other kinds of foods. This study used the original version of the CFC scale (Strathman et al., 1994). Future research should use, test, adapt, and improve different scales for assessing considerations of immediate/present and future consequences, particular for young respondents (Mello et al., 2013; Zhang et al., 2012). Other personality traits can be considered in relation to consumers' time perspectives and health behaviours, such as personality traits (Carrillo, Prado-Gasco, Frizman, & Varela, 2012). There are potential differences in CFC-future and CFC-immediate among teenagers due to developmental differences (i.e., better self-control and lower risk-taking among older teenagers). Future research could benefit if those psychological constructs are included. Finally, this study uses self-reported behaviours and correlation methods on cross-sectional data, so the nature of the relationships is problematic. Experimental designs or a longitudinal design should be used in order to address issues of causality in future studies.

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