

The impact of consumption situations and culture differences on decision making in food prosumption

Chunyan Xie and Kjell Grønhaug

Abstract

This paper examines how variations in consumption situations and cultural settings impact decision making in food prosumption by applying an extended version of the theory of planned behaviour (TPB). Our results show that in an individualistic culture, people go through a more deliberative process when preparing a dinner for friends, but a habitual process when preparing a dinner for themselves. Moreover, in the consumption situation involving others, attitudes and perceived behavioural control are significant predictors of prosumption propensity for respondents from an individualistic culture; however, subjective norms and perceived behavioural control are determinant for prosumption tendency of respondents from a collective culture. Our study adds to the existing insights on food prosumption by testing two boundary conditions of decision making in food prosumption, namely consumption situations and cultural contexts.

Key words:

consumption situations, cultural differences, decision making, food prosumption

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1. Introduction

This study adds to extant research on food prosomption by investigating two boundary conditions of decision making in food prosomption behaviour, consumption situations and cultural contexts. More specifically, we apply an extended version of the Theory of Planned Behaviour (TPB) (Ajzen, 1991) to examine antecedents of food prosomption propensity across two different consumption contexts (involving others vs. not involving others) and two cultural contexts (individualistic vs. collective culture). In the recent years prosomption behaviour has attracted increasing attentions from academics. Prosomption is defined as “value creation activities undertaken by the consumers that result in production of products they eventually consume and that become their consumption experiences” (Xie, Bagozzi, and Troye, 2008). In the current study, we study one type of food prosomption behaviour, dinner preparation, which is a central part of people’s daily life across cultures. Dinner preparation is a complex process since it includes multiple acts such as planning, purchasing, cooking, eating and disposing. It can also become a habitual behaviour after frequent performance. Therefore dinner preparation varies in the degree of deliberative effort. Moreover, dinner preparation can be conducted in different consumption contexts, for instance, either in an individual context without involving other persons or in a social context involving family members or friends.

Previous research has studied dinner preparation as a food prosomption behaviour from different theoretical perspectives (Xie et al., 2008; Troye and Supphellen, 2012; Androulaki, 2014). Some researchers investigate antecedents of food prosomption propensity by applying established attitudes-behaviour theories (Xie et al. 2008); others examine how people’s prosomption behaviour positively biases their evaluation of prosomption outcomes (i.e., a dish) and input products (i.e., a dinner kit) through self-attribu-

tion and self-integration (Troye and Supphellen, 2012). However, these studies are mostly conducted in the western cultures and focus on dinner preparation in social consumption situations that involve other persons. Little is known whether such food prosomption behaviour would vary in other consumption contexts that do not involve others, or vary in other cultural contexts.

The current study attempts to address this gap by exploring two boundary conditions of decision making in food prosomption behaviour. More specifically, we apply an extended version of TPB to study drivers of food prosomption propensity across two different consumption contexts (involving vs. not involving other persons) and two cultural contexts (individualistic vs. collective culture). Previously, Xie et al. (2008) apply an adapted version of the Theory of Trying (TT) to address immediate antecedents of prosomption intentions, which include three attitudes components (attitudes toward trying and succeeding, attitudes toward trying and failing, and attitudes toward process), subjective norms, self-efficacy, and past behaviour. In the current study, we apply a similar but more parsimony approach, an extended version of TPB, to investigate antecedents of prosomption tendency across consumption contexts and culture settings. A primary reason for choosing the TPB as the theoretical point of departure is that the theory has been widely used in previous research related to a great variety of consumption activities in different cultural contexts and thus demonstrates generalizability and robustness. We extend the TPB by adding past behaviour into the original model as the fourth driver of intentions, in addition to attitudes, subjective norms, and perceived behaviour control. We do so in order to capture possible habitual processes in food prosomption, since dinner preparation is an everyday behaviour that is performed frequently and can become habitual. A detailed description of the extended

TPB is presented in the theory section.

Our study contributes to extant research on food prosumption by testing two boundary conditions of decision making underlying such behaviours. First, it examines the contingency of decision making in food prosumption on the consumption contexts. Our finding shows that a habitual process is determinant in an individual consumption context that does not involve other persons while a deliberative process is dominant in a social consumption context involving others. Second, we test another boundary condition of decision making in food prosumption, namely cultural variations. Our results show that in the social consumption context involving others, attitudes and perceived behavioural control are significant predictors of prosumption tendency for respondents from an individualistic culture; however, subjective norms and perceived behavioural control are determinant of prosumption propensity for respondents from a collective culture.

The rest of the paper is organized as follows: in the next section we present the TPB and discuss key aspects of how consumer decision making and choice have been dealt with in the literature. This part serves as input for the development of our research perspective (i.e., an extended version of the TPB) to study food prosumption behaviour. Then, we derive hypotheses on impacts of consumption situations and cultural differences on decision making in food prosumption. After this we report our research methodology and findings. Finally the findings are discussed and implications highlighted.

2. Theoretical background

2.1 The theory of planned behaviour

The theory of planned behaviour (Ajzen, 1991) is based on the best-known and most widely supported theory on attitudes-behaviour relations, the theory of reasoned action (TRA) (Fishbein and Ajzen, 1975). In the TRA behav-

our is determined by behavioural intentions. These behavioural intentions are, in turn, influenced by attitudes toward the behaviour and subjective norms. Attitudes toward the behaviour refer to one's positive or negative evaluations of performing the behaviour; subjective norms refer to the perceived social pressure to perform or not to perform the behaviour. In addition to attitudes and subjective norms, perceived behavioural control has been added in the TPB as a third factor influencing intentions and behaviour. Perceived behavioural control is defined as the person's beliefs as to how easy or difficult performance of the behaviour is likely to be (Ajzen 1985). This construct was included to predict behaviours that are not completely under volitional control. Perceived behavioural control is supposed to reflect the opportunities for performing behaviour and/or the requisite resources needed for acting; and it is assumed to influence behaviour both directly and indirectly through intentions. The path from perceived behavioural control to intentions represents a volitional process. It captures the motivational influence of control on behaviour through the initiation of intention formation or activation (Ajzen, 1991). The direct path from perceived behavioural control to behaviour represents actual control over opportunities or resources and reflects a non-volitional source of influence (Ajzen, 1987). The inclusion of perceived behavioural control has been found to increase the predictive power of the model (Madden et al., 1992).

Most studies applying the TPB focus on the behavioural intention and its antecedents. In the current study, we choose also to focus on the behavioural intention and leave out the link between behaviour intentions and behaviour. In total, the TPB captures well the deliberative processes in decision making, however, it lacks the capacity to address the automatic processes in decision making, as discussed below.

2.2 Decision making processes: deliberative vs. automatic processes

Traditionally, consumer decision making is treated as an individual, rational, and deliberative process. Rational choice theories (March, 1978) with the integration of “bounded rationality” (Simon, 1979) assume that people first assess possible choice alternatives according to a certain set of criteria and then make a choice that maximizes or satisfies their utilities. However, such rational choice theories have difficulty to explain many simple and routinized decision making processes in our daily life.

This discrepancy between rational choice theory and observation of actual choice experience has been addressed by Bettman et al. (1998) in their constructive choice framework. Constructive choice theory posits that people employ different choice heuristics in the different decision making contexts based on subconscious processes such as pattern matching or categorization. Such choice heuristics are choice-making strategies that range from extensive and deliberative decision rules to less involved heuristics (e.g., “choose the same brand as last time”). Positing an array of heuristics enables constructive choice theory to incorporate both rational choice processes and simple choice processes.

Recent research pay increased attention to the importance of automatic or non-conscious influences on consumer choices and behaviour. For instance, Bargh (2001; 2002) extends the consideration of non-conscious motivations beyond hedonic impulses and physiological need states (e.g., in addiction) to the operation of any kind of goal or motivation a person can have consciously. The non-conscious influence on choice and behaviours can be obtained by the mere, passive activations of the relevant motivations and goals. Therefore, both rational, deliberative processes and routinized, automatic processes are considered important in consumer decision making and choice.

Classical attitudes-behaviour relation models such as the theory of reasoned action (TRA) (Fishbein and Azjen, 1975) and TPB (Azjen, 1991) focus mainly on deliberative decision making process. They propose that consumers form intentions and perform behaviours after a deliberative evaluation of factors such as reflected in their attitudes, subjective norms, and perceived behaviour control. These rational behaviour models are suitable to explain behaviours that are not frequently performed or have significant importance to people, but have difficulty in explaining behaviour that are performed frequently and are of less importance to people. To remedy this weakness, past experience is introduced into the classical models to account for habitual behaviours, for instance in the Theory of Trying (Bagozzi and Warsaw, 1990). Thus, in order to explain both by rational, deliberative processes and habitual, automatic processes in decision making, the TPB may need to be extended.

2.3 Extended Theory of Planned Behaviour

To capture variations in degree of deliberative effort, we extend the TPB by including the impact of past behaviour on behavioural intentions. Previous research suggests that performing a behaviour frequently leads to the formation of a habit; once established, such a habit may control subsequent behaviour without deliberate cognitive mediation (e.g., Quelling and Wood 1998). Quelling and Wood (1998) argued that past behaviour may guide future responses in two ways. When the context is stable and the action is well learned, the performance may become automatic. Such habitual behaviour directly affects future behaviour intentions and behaviour. This is consistent with Bargh's (2002) argument of non-conscious influence on decision and behaviour. On the other hand, when the context is unstable or the action is not well learned, a more deliberative

process may be necessary to engage in the behaviour and past behaviour will contribute less to the explanation of intentions. Bagozzi and Warsaw (1990) also claims that the effect of past behaviour can be separated into two components: frequency and recency of past behaviour; and only frequency of past behaviour is proposed to influence intentions. Empirical evidence supports the role of past behaviour on intentions as well. For instance, Conner and Armitage (1998) showed

that past behaviour explained 7.2 percent of variance in intentions after controlling for attitudes, subjective norms, and perceived behavioural control. Therefore, we consider the inclusion of past behaviour in the original TPB will enable the model to capture both rational, deliberative processes and habitual, automatic processes in decision making. The extended model underlying our study is shown in Figure 1.

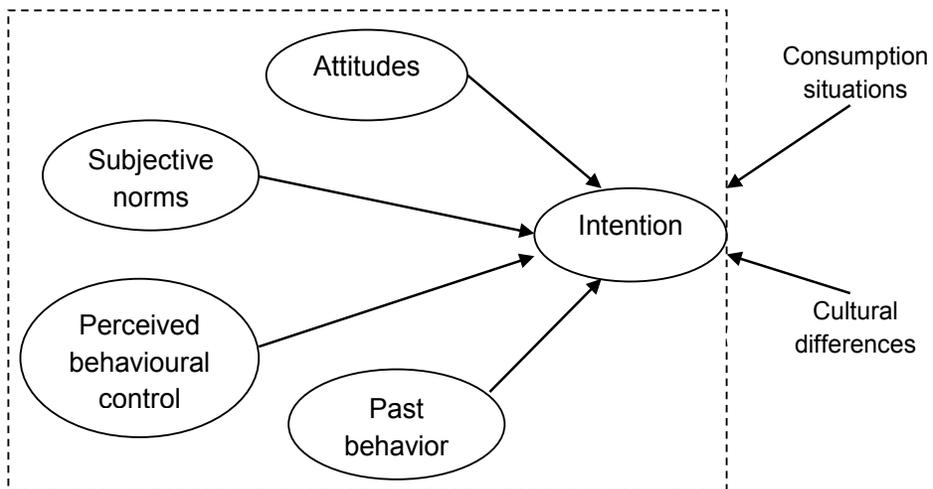


Figure 1: The extended theory of planned behaviour (TPB)

3. Hypotheses

3.1 The impact of consumption situation on decision making

Actual decision making usually takes place in different consumption situations and various aspects of the consumption situations need to be taken into consideration. One important aspect of the consumption situations is the presence of others. As long as other persons in one way or another are taken into account,

this may have an impact on the decision making process. Existent research has explicitly addressed the impact of the presence of other persons on decision making. For instance, attitudes-behaviour relation models such as the TRA and TPB incorporate the construct of “subjective norms” to capture the influence of important others in decision making, which refers to consumers’ felt pressure to comply with other persons’ expectations. Research on gift giving (Belk and Coon, 1993) has also

investigated the importance of consideration of other persons on decision making where the central person is not the consumer himself or herself but other persons. In gift giving, consideration of and compliance with other persons' (i.e., gift receivers') expectations and desires play a central role. Such decision making processes are more complex and require more time and energy as well. To sum up, consumption situations that involve consideration of others may be more complex and require a deliberative decision making process. .

In the current study, our empirical context is dinner preparation, one specific type of food prosumption behaviour. We test the impact of variation in consumption situations on decision making by applying the extended TPB in two consumption situations. One is a social consumption situation where other persons' preferences are taken into consideration (i.e., prepare a dinner for friends). The other is a consumption situation where only one's own preferences are considered (i.e., prepare a dinner for oneself).

Preparing dinner for friends requires consideration of other persons' preferences and desires in the decision making processes. It is possible that people will go through a more deliberative process for dinner preparation. For instance, preparing a nice dinner for friends may be considered as an instance of gift giving in real life, which contains elements of gift giving such as economic exchange, social exchange, and expression of unselfish love (Belk and Coon, 1993). Bargh (2002) also argues that the consumption situation involving others will activate interpersonal goals and self-presentation related motivations. Since these goals are usually important for individuals, it is likely that they will exhibit a rational, deliberative decision making process in a consumption situation involving others. Such a deliberative decision making processes will be captured by the path from attitudes, subjective norms and

perceived behaviour control to intentions in the extended TPB. Therefore, we propose the following:

H1a: People are likely to exhibit a deliberative decision making process in food prosumption in a consumption situation when other persons are involved. Such a deliberative process will be reflected by the impact of attitudes, subjective norms, and perceived behavioural control on intentions.

On the other hand, preparing a dinner for oneself may activate simple personal goals such as biological needs and personal food preferences. The decision making process may be considered as less complicate since only personal preferences are taken into account. In addition, if people perform such a behaviour frequently, it will lead to the formation of a habit. Such a habit may affect the subsequent behaviour without deliberate cognitive mediation (Quellette and Wood, 1998). Therefore, we argue that people are likely to have a habitual, automatic decision making process when preparing dinner for themselves. Such a habitual process will be captured by the impact of past behaviour on intentions. Therefore, we propose the following.

H1b: People are likely to exhibit a habitual decision making process in food prosumption in a consumption situation without involving other persons. Such a process will be reflected by the impact of past behaviour on intentions.

3.2 The impact of cultural difference on decision making

Another contingent condition for food prosumption tested herein is cultural difference. Since most previous studies on food prosumption are mostly conducted in Western cultures, a critical question to ask is whether decision making processes underlying food prosumption would be the same in other cul-

tural contexts. One of the most distinguishing dimensions between the Western and Eastern cultures is individualism vs. collectivism (Hofstede, 1980). In individualistic cultures, the determinants of social behaviour are primarily attitudes, personal needs, perceived rights, and contracts; while in collective cultures, they are primarily norms, duties, and obligations (Triandis and Bhawuk, 1997). A similar argument is proposed by Markus and Kitayama (1991) by distinguishing between independent and interdependent selves in order to explain cultural differences. For instance, “the independent self is common in many Western cultures and is characterized by an emphasis on personal goals, personal achievement, and appreciation of one’s differences from others... Relationships with others frequently serve as standards of self-appraisal... The interdependent self is common in many non-Western cultures and is characterized by stress on goals of a group to which one belongs, attention to fitting in with others, and appreciation of commonalities with others. The relationships one has are the primary unit of consciousness. Relationships with others are ends in and of themselves...” (Bagozzi et al 2000: 98).

Cultural differences impact people’s decision making process. As Triandis (1994) argues, one of the defining attributes of individualism and collectivism is the relative importance of attitudes versus norms as determinants of social behaviour (Triandis, 1994). Empirical support for such arguments can be found in Bontempo and Rivero’s (1990) meta-analysis of cross-cultural studies of the TRA, where they found that individualists’ behaviour is more closely linked to attitudes, and collectivists’ behaviour is more closely linked to norms. Lee and Green (1991) also found that Korean consumers’ purchase intentions were predicted by subjective norms, whereas those of the American consumers were predicted by attitudes. Similarly, Bagozzi et al. (2000) found that subjective norms in-

fluenced Chinese consumers’ decisions to eat out with friends; however, attitudes and past behaviour were major predictors of intentions to eat out with friends for American and Italian consumers.

Based on the above discussion, we argue that such interpersonal goals and personal motivations activated in a consumption situation involving others (i.e., preparing a dinner for friends) may have different impact on decisions and behaviours in collective cultures than in individual cultures. For instance, personal motivations such as self-presentation will be more important for people with independent selves and this will be demonstrated by the effect attitudes and perceived behavioural control on intentions. On the other hand, the interpersonal goals will be more important for people with interdependent self, since relationships are the defining component of their selves. Such an impact will be captured by the effect of subjective norms on intentions. Thus, we hypothesize:

H 2a: In a consumption situation involving others, attitudes and perceived behavioural control will play a more important role in decision making in food prosumption in an individual culture.

H 2b: In a consumption situation involving others, subjective norms will be most important in decision making in food prosumption in a collective culture.

On the other hand, consumption behaviour in a consumption situation without involving others (i.e., preparing a dinner for oneself) will be considered less complicate in both cultures. For instance, preparing dinner for oneself may activate individual goals such as biological need and personal food preference. Moreover, if people perform it frequently and routinize the process, they are more likely to go through a habitual, automatic decision making process in both cultures. This is the case for our respondents in both cultures when they prepare dinner for themselves. Therefore, past behaviour

will have major impact on intentions in such a consumption situation in both cultures.

H3: In a consumption situation without involving others, when people perform a behaviour that is frequently performed, their past behaviour will be most important in decision making in food prosomption in both cultures.

4. Method

To study the actual problem, we conduct surveys on consumers' food prosomption behaviour (i.e., dinner preparation) in two countries with different cultures: one with prototypically Western culture (Norway) and the other with prototypically Eastern culture (China) (Hofstede, 1980). The target population is ordinary household members who are in charge of food preparation at home. Respondents are randomly selected from the resident area in a major city in Western Norway and in a middle-sized Chinese city where Western influence is modest. The questionnaires are distributed personally to each household and collected afterwards. After discarding questionnaires containing incomplete responses, 380 usable questionnaires are obtained in Norway and 372 usable questionnaires are collected in China. The Norwegian sample consists of 28% men and 72% women. Of the respondents, 83% are between 20 and 60-years-old, 85% have a family size from 2 to 5, 96% have a high school education or more, and 75% are at least partly employed. The Chinese sample consists of 41% men and 59% woman. Of the respondents, 86% are between 20 and 60-years-old, 98% have a family size from 2 to 5, 78% have a high school education or more, and 65% are at least partly employed.

In order to capture the impact of different consumption contexts (preparing a dinner for friends vs. for oneself) on decision making, a within-subject design is chosen for the Norwegian sample. In order to capture the impact of cultural differences, a be-

tween-subject comparison is made between Norwegian and Chinese respondents for two consumption situations (preparing a dinner for friends vs. for oneself).

Questionnaire items are initially developed in English. A back translation procedure is employed to prepare the questionnaire, which is commonly used in cross-cultural research (Brislin, 1976; Cavusgil and Das, 1997). Bilingual persons translate the items into Norwegian and Chinese. Different bilingual persons translate the Norwegian and Chinese versions back into English. Inconsistencies between translations are reconciled.

The measurements of constructs are built on scales previously applied in testing the TPB and the theory of trying (e.g., Azjen, 1991; Bagozzi and Warshaw, 1990). Attitudes are measured separately toward "preparing a dinner for friends" and "preparing a dinner for oneself." Three 7-point, semantic differential items are used: pleasant-unpleasant, enjoyable-disgusting, and satisfying-unsatisfying (Madden et al., 1992; Azjen, 1991; Bagozzi and Warshaw, 1990).

Subjective norms are measured toward "preparing a dinner for friends" and "preparing a dinner for oneself". Two items are used to record responses in both cases. The first item reads, "Most people who are important in my life would like me to prepare a dinner for my friends" and the second item is "My family thinks that I should prepare a dinner for my friends". Both are recorded on 7-point disagree-agree scales (Madden et al., 1992; Azjen, 1991; Bagozzi and Warshaw, 1990).

Perceived behavioural control is measured by asking respondents to answer the following three items. The first item reads, "I feel capable to prepare a dinner for my friends", the second item is, "I know what to do when I should prepare a dinner for my friends", and the third item reads, "I feel that I possess the necessary skills to prepare a dinner for my friends." These items are adapted from previous studies on perceived behavioural control

(Madden et al., 1992; Azjen, 1991) and related concepts such as self-efficacy (Bandura 1984). All items are recorded on a 7-point disagree-agree scale. Perceived behavioural control is also measured toward “preparing a dinner for oneself” by the same items.

Past behaviour is measured with responses to one item “I frequently prepare dinners for my friends by myself”, on a 7-point disagree-agree scale (Xie et al., 2008). Finally, intentions are measured by asking respondents to react to the statement, “When I invite friends for dinner, I intend to prepare a meal by myself.” A 7-point disagree-agree scale is used (Madden et al., 1992; Bagozzi and Warshaw, 1990).

5. Results

Structural equation models are used to estimate parameters and test hypotheses by applying LISREL (Joreskog and Sorbom, 2003). Confirmatory factor analyses are conducted for variables in the extended TPB separately in all four conditions (2 consumption situations x 2 cultures). We apply the principle of multi-group analysis (Joreskog and Sorbom, 1989) to test the within subject situation differences in the Norwegian sample (n=380). Finally, we run a multi-group analysis to test the between subjects culture differences in two samples (Norwegian vs. Chinese); generalizability of the extended TPB is examined in both consumption situations (preparing a dinner for friends vs. for oneself). Chi-square difference tests are performed to determine the equivalence of parameter estimates.

5.1 Measurement model

In order to assess the unit-dimensionality and adequacy of the measures, confirmatory factor analyses are performed on covariance matrices and the results are presented in Table 1 and Table 2. Inspection of Table 1 & 2 shows that all measurement models fits well. The factor loadings and reliability of the measures are high for the Norwegian sample.

This is also the case for the Chinese sample except for the measures of subjective norms in the situation of preparing a dinner for oneself.

5.2 Structure model

5.2.1 The impact of consumption situations

In this section, we report the findings from our investigation. We first report the results from the Norwegian sample to test our hypotheses H1a and H1b on the impact of consumption situations on decision making in food prosumption. The model fits well: Chi-square (166) = 342.36, RMSEA = 0.053, CFI = 0.98, NNFI = 0.98, Standardized RMR = 0.030.

A close inspection of Figure 2 reveals that when preparing a dinner for friends, people' intentions are significantly influenced by attitudes ($\gamma = 0.17$, $p < 0.001$), perceived behavioural control ($\gamma = 0.41$, $p < 0.0001$), and past behaviour ($\gamma = 0.28$, $p < 0.001$). Subjective norms have a non-significant effect on intentions to prepare a dinner for friends. About 54 percent of the variance in intentions to prepare a dinner for friends is explained by its antecedents.

Our results give partial support to H1a. Norwegian respondents go through a deliberative decision making process in food prosumption in a consumption situation involving others (i.e. preparing a dinner for friends), shown by the impacts of attitudes and perceived behavioural control on intentions. However, the effect of subjective norms on intentions is not significant. This is consistent with previous findings on the TRA in individual cultures (Lee and Green, 1991; Bagozzi et al., 2000). Moreover, they also exhibit a habitual decision making process when preparing a dinner for friends, shown by the significant path from past behaviour to intentions. This implies that although preparing a dinner for friends is a complex prosumption behaviour, it is still can be rou-

Table 1: Factor loading and reliability in the Norwegian sample

PREPARE A DINNER FOR FRIENDS			PREPARE A DINNER FOR ONESELF		
Items	Factor loading	Reliability	Items	Factor loading	Reliability
A1	.94	.96	A1	.89	.95
A2	.97		A2	.97	
A3	.95		A3	.94	
SN1	.82	.83	SN1	.89	.86
SN2	.87		SN2	.85	
PBC1	.87	.90	PBC1	.91	.90
PBC2	.88		PBC2	.94	
PBC3	.87		PBC3	.76	
PB	1.00		PB	1.00	
Int	1.00		Int	1.00	
Model Fit index: RMSEA = 0.064, NNFI = 0.99, CFI = 0.99, Standardized RMR= 0.027			Model Fit index: RMSEA = 0.022, NNFI = 1.00, CFI = 1.00, Standardized RMR= 0.023		

Note: A- Attitudes, SN-Subjective Norms, PBC- Perceived Behavioral Control, PB- Past Behaviour, Int- Intentions

Table 2: Factor loading and reliability in the Chinese sample

PREPARE A DINNER FOR FRIENDS			PREPARE A DINNER FOR ONESELF		
Items	Factor loading	Reliability	Items	Factor loading	Reliability
A1	.91	.95	A1	.97	.97
A2	.96		A2	.98	
A3	.92		A3	.92	
SN1	.81	.68	SN1	.68	.48
SN2	.64		SN2	.48	
PBC1	.74	.78	PBC1	.75	.80
PBC2	.73		PBC2	.78	
PBC3	.77		PBC3	.81	
PB	1.00		PB	1.00	
Int	1.00		Int	1.00	
Model fit index: RMSEA = 0.061, NNFI = 0.98, CFI = 0.99, Standardized RMR= 0.027			Model fit index: RMSEA = 0.07, NNFI = 0.97, CFI = 0.98, Standardized RMR= 0.039		

Note: A- Attitudes, SN-Subjective Norms, PBC- Perceived Behavioural Control, PB- Past Behaviour, Int- Intentions

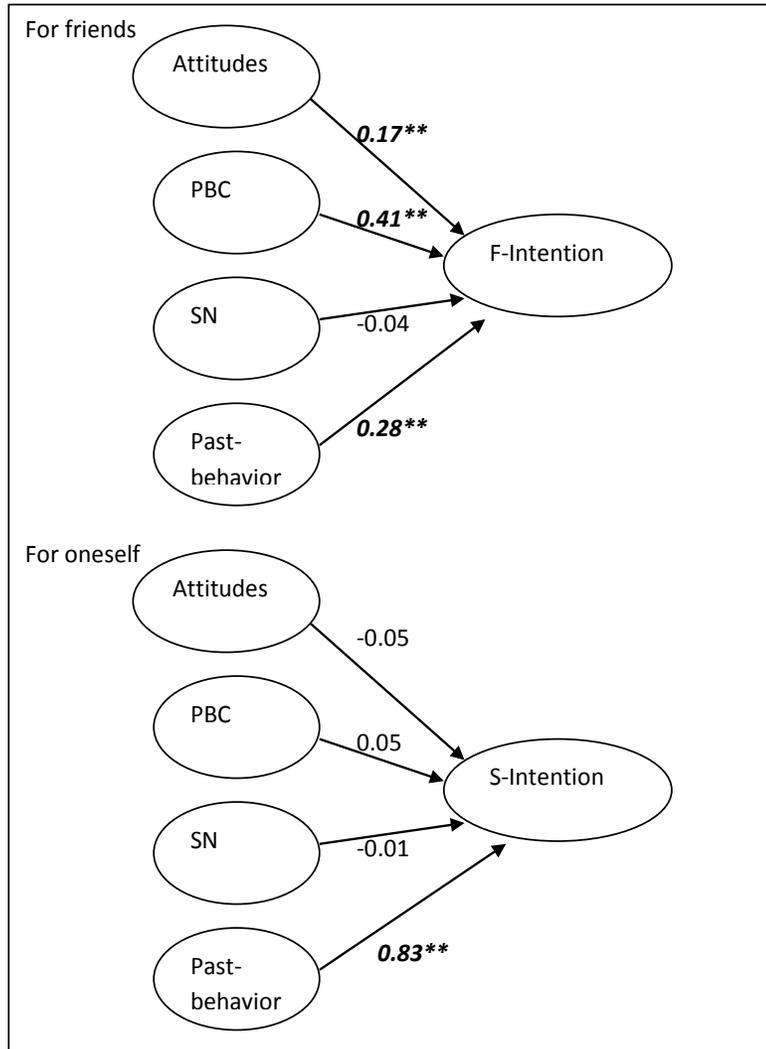


Figure 2: The extended TPB in the Norwegian sample: preparing a dinner for friends vs. for on

Note: * $p < 0.05$, ** $p < 0.01$

F-Intention – Intention to prepare a dinner for friends

S-Intention – Intention to prepare a dinner for self

PBC - Perceived behavioural control,

SN - Subjective norms

tinized after frequent performances.

The findings differ when consumers prepare dinner for themselves. Only past behaviour significantly influences intentions to prepare a dinner for oneself ($\gamma = 0.83$, $p < 0.0001$), as shown in Figure 2. A total of 67 percent of variance in intention to prepare a dinner for oneself is explained by its antecedents. This gives full support for Hypothesis H1b. Attitudes have no significant effect on intentions. This may have been due to the automatic, habitual process based on past experiences. Alternatively, it is possible that the non-significant effect occurred because of the presence of multi-co linearity. A high positive correlation between the global attitudes and past behaviour (0.62) is observed. When past behaviour is a strong predictor of intention, the impact of a weaker predictor such as attitudes may become non-significant.

Intuitively people have higher perceived behavioural control when they prepare a dinner for themselves than they do for friends. However, perceived behavioural control has no significant impact on intentions in the situation of preparing a dinner for oneself. This is consistent with previous research showing that perceived behavioural control might not be a major predictor of behaviour when perceived behavioural control is high (Madden

et al., 1992).

Past behaviour is the only significant predictor of intentions in the situation of preparing a dinner for oneself. An explanation is that intentions are a result of prior actions. This implies that people may not form intentions clearly and fully when they prepare a dinner for themselves as a habitual behaviour. When people perform a habitual behaviour, incompletely formed intentions may leave the way open for automatic reactions based on past behaviour (Bagozzi and Warshaw, 1990). To sum up, our results provide partial support for H1a and full support for H1b.

In order to test the significance of the within-subject situation differences in the Norwegian sample, we apply the principle of multiple-group analysis ((Joreskog and Sorbom, 1989) to conduct a more strict formal comparison of parameters in the extended TPB. More precisely, we test whether path coefficients for various explanatory factors differ across the two consumption situations. For instance, as shown in Table 3, when we constrain Path 1 (Attitudes → Intention) to be equal across the two consumption situations, the Chi-square difference test show the constrained model is significantly different from the original model. The results of the

Table 3: Test of invariance of path coefficients across the two situations in the Norwegian sample

BASELINE MODEL* (PARTIALLY INVARIANT FACTOR LOADING): $\chi^2(178)=361.57$		
Path 1: Attitudes→Intention	Equal path 1 across two consumption situations	$\chi^2(177)=371.02$, $\Delta \chi^2 (1) = 371.02-361.57=9.45 > 3.84$
Path 2: Perceived behavioural control→ Intention	Equal path 2 across two consumption situations	$\chi^2(177)=386.93$, $\Delta \chi^2 (1)=386.93-361.57=25.36 > 3.84$
Path 3: Subjective norms→ Intention	Equal path 3 across two consumption situations	$\chi^2(177)=361.76$, $\Delta \chi^2 (1) = 361.76-361.57=0.19 < 3.84$
Path 4: Past behaviour→ Intention	Equal path 4 across two consumption situations	$\chi^2(177)=391.39$, $\Delta \chi^2 (1) = 391.79-361.57 29.82 > 3.84$

Note: Baseline model * - The model contains factor loadings partially invariant across samples.

Equal Path 1: Attitudes→Intention: In the model, the path coefficient from attitudes to intentions was constrained to be equal for both situations, then a chi-square difference test was applied to compare the chi-squares for this model to the factor loading partially invariant model (baseline model).

invariance test of path coefficients in Table 3 show that attitudes, perceived behavioural control, and past behaviour significantly predict intentions differently in the two situations. Attitudes and perceived behavioural control predict significantly intentions in the situation of preparing a dinner for friends but not in the situation of preparing a dinner for oneself. In both situations past behaviour is a significant predictor of intention, but its impact is significantly stronger in the situation of preparing a dinner for oneself than for friends. Subjective norms are found to have non-significant effects on intention in both situations. Such a formal comparison of parameters between two consumption situations is a stronger test of our hypotheses H1a and H1b. It provides evidence for our propositions that in Western cultures (e.g., North-European culture in Norway) people go through different processes in their decision making in food prosumption across dif-

ferent consumption situations: a deliberative process in preparing a dinner for friends and a habitual/automatic process in preparing a dinner for themselves.

5.2.2 The impact of cultural difference

We further test the cultural contingency of the extended TPB in both consumption situations. First, in the consumption situation involving others (i.e. preparing a dinner for friends), the extended TPB is run separately for the Norwegian sample and the Chinese sample, as shown in Figure 3. The results show that the model predicts differently in two samples. Attitudes, perceived behavioural control, and frequency of past behaviour have significant effects on intentions to prepare a dinner for friends for Norwegians. However, only subjective norms, perceived behavioural control and frequency are significant predictors of intention for Chinese.

Then, we apply a multi-group analysis to

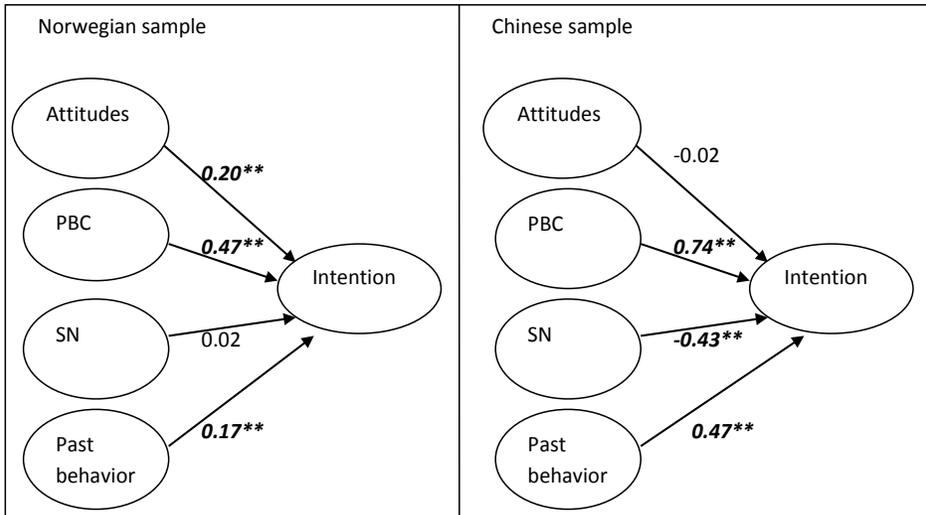


Figure 3: Prepare a dinner for friends: Norwegians vs. Chinese

Note: * p<0.05, ** p<0.01

PBC - Perceived behavioural control,

SN - Subjective norms

Table 4: Test of invariance of path coefficients across cultures for the situations of preparing a dinner for friends

BASELINE MODEL* (PARTIALLY INVARIANT FACTOR LOADING): $\chi^2(56)=129.73$		
Path 1: Attitudes→Intention	Equal path 1 across cultures	$\chi^2(55)=137.76$ $\Delta \chi^2 (1) = 137.76-129.73=8.03 > 3.84$
Path 2: Perceived behavioural control→ Intention	Equal path 2 across cultures	$\chi^2(55)=131.87$, $\Delta \chi^2 (1) = 131.87-129.73=2.14 < 3.84$
Path 3: Subjective norms→ Intention	Equal path 3 across cultures	$\chi^2(55)=143.19$, $\Delta \chi^2 (1)=143.19-129.73=13.46 > 3.84$
Path 4: Past behaviour→ Intention	Equal path 4 across cultures	$\chi^2(55)=136.43$, $\Delta \chi^2 (1)=136.43-129.73=6.70 > 3.84$

Note: Baseline model*- The model contains factor loadings partially invariant across samples.
 Equal Path 1: Attitudes→Intention: In the model, the path coefficient from attitudes to intentions was constrained to be equal for both samples, then a chi-square difference test was applied to compare the chi-squares for this model to the factor loading partially invariant model (baseline model).

test more rigidly the difference in the extend TPB in two samples shown in Figure 3. We follow the procedure of multi-group analysis suggested by Joreskog and Sorbom (1989). The results of invariance tests of path coefficients in the extended TPB in two samples are shown in Table 4.

Our findings show that only path coefficients from perceived behavioural control to intentions are invariant across samples. This means that perceived behavioural control has a similarly important impact on intentions across samples. It indicates that preparing a dinner for friends is a complex consumption behaviour and perceived behavioural control play an important role in the decision making processes in both cultures.

The effects of past behaviour are significant in both samples, but the effect is stronger for Chinese than for Norwegians. This indicates that preparing a dinner for friends is more a habitual behaviour for Chinese than for Norwegians. This is understandable since preparing a dinner for friends is a very common phenomenon in the Chinese culture and probably much more practiced by Chinese than for Norwegians.

However, our results show attitudes have

a significant effect on intentions to prepare a dinner for friends for Norwegians, but not for Chinese. Subjective norms are important in predicting intentions for Chinese but not for Norwegians. Such results are consistent with previous findings that subjective norms could be more important than attitudes to predict behaviour in collective cultures, but attitudes are more important in predicting intentions than subjective norms in individual cultures (Davidson et al., 1976; Han and Shavitt, 1994).

The influence of subjective norms on intentions is negative and significant for Chinese. The negative coefficient of subjective norms is probably due to the multi-collinearity, since perceived behavioural control and subjective norms correlate highly and positively ($r = 0.82$) in the Chinese sample. The strong correlation between perceived behavioural control and subjective norms for Chinese is interesting. A possible explanation is that the construct of perceived behavioural control measures something more group-based in the Chinese sample in contrast to what is captured in the Norwegian sample. The concept of perceived behavioural control is developed in the individualistic tradition with the presumption that an individual is

Table 5: Test of invariance of path coefficients across cultures for the situations of preparing a dinner for oneself

BASELINE MODEL* (PARTIALLY INVARIANT FACTOR LOADING): $\chi^2(56)=111.94$		
Path 1: Attitudes→Intention	Equal path 1 across cultures	$\chi^2(55)=111.99$ $\Delta \chi^2 (1) = 111.99-111.94=0.05 < 3.84$
Path 2: Perceived behavioural control→ Intention	Equal path 2 across cultures	$\chi^2(55)=114.02$, $\Delta \chi^2 (1) =114.02 - 111.94=2.08 < 3.84$
Path 3: Subjective norms→Intention	Equal path 3 across cultures	$\chi^2(55)=112.01$, $\Delta \chi^2 (1)=112.01-111.94=0.07 < 3.84$
Path 4: Past behaviour→ Intention	Equal path 4 across cultures	$\chi^2(55)=112.14$, $\Delta \chi^2 (1)=112.14-111.94=0.20 < 3.84$

Note: Baseline model*- The model contains factor loadings partially invariant across samples.
 Equal Path 1: Attitudes→Intention: In the model, the path coefficient from attitudes to intentions was constrained to be equal for both samples, then a chi-square difference test was applied to compare the chi-squares for this model to the factor loading partially invariant model (baseline model).

responsible for his/her ability to perform certain behaviours. However, in a collective society (e.g., China), it is more likely that such a construct is more group-based and it is likely that a social group is responsible for an individual’s ability to perform a certain behaviour. For instance, when Chinese respondents consider their ability to prepare a dinner for friends, it is naturally for them to include the possible help or assistance they could get from other family members or friends. Thus the measure of perceived behavioural control may capture some social elements, which explains the high correlation between perceived behavioural control and subjective norms in the Chinese sample. This indicates the need to further refine or revise the construct of perceived behavioural control and its measurement to be applied in collective cultures.

Finally, we test the cultural contingency of the extended TPB in the consumption situation without involving others (i.e. preparing a dinner for oneself). First, the model is applied separately for the Norwegian and Chinese samples, as shown in Figure 4. The results show that only frequency of past be-

haviour has significant effects on intentions for both Norwegian and Chinese.

Then, the model is also compared formally in two samples by applying a multi-group analysis. The results of invariance tests of path coefficients are shown in Table 5. A multi-group analysis does not show significant difference between the two samples. This provides full support for our hypothesis H3 and further cross-culturally validates our argument that preparing a dinner for oneself is mainly driven by habit.

6. Discussion

Our results show that people go through a more deliberative decision making process when they prepare a dinner for friends, but a habitual decision making process when they prepare a dinner for themselves. Moreover, in a social consumption context involving others, major predictors in the TPB function differently across cultures. For instance, in the individualistic culture, attitudes and perceived behavioural control are important in predicting food prosumption tendency; in the collective culture, subjective norms and perceived behavioural control are determi-

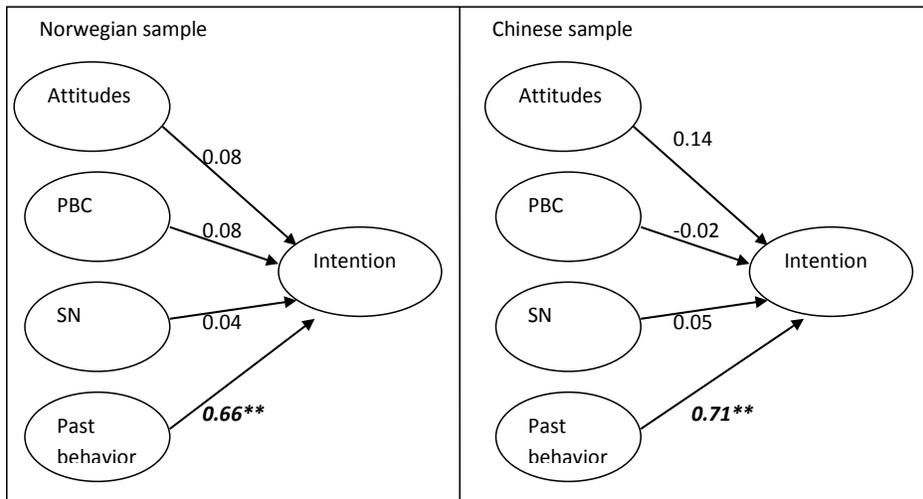


Figure 4: Prepare a dinner for oneself: Norwegians vs. Chinese

Note: * p<0.05, ** p<0.01

PBC - Perceived behavioural control,

SN - Subjective norms

nants of food prosumption tendency. On contrast, in an individual context without involving others, past behaviour is the only significant predictor for prosumption intentions in both cultures.

Moreover, an interesting result in our study is the strong positive correlation between perceived behavioural control and subjective norms found in the Chinese sample in the context of preparing a dinner for friends. A possible explanation is that the construct of perceived behavioural control measures something more group-based and perceived behavioural control relates to group norms, i.e., appropriate behaviours strongly influenced by subjective norms in the collective culture. This is in contrast to individualistic cultures where perceived behavioural control reflects the extent that an individual believes he/she can perform specific behaviour by oneself.

Our findings have both theoretical and

managerial implications. Theoretically, the current study adds to the existing insights on decision making in food prosumption (Xie et al. 2008; Troye and Supphellen, 2012; Androulaki, 2014) by testing two contingent conditions, variation in consumption contexts and cultural backgrounds. Previous research focuses mostly on food prosumption in social consumption contexts in the Western cultures.

First, our findings show that in an individual context without involving others decision making in food prosumption is mainly a habitual process. The fact that habitual behaviour is primarily influenced by past experiences is in concordance with previous research. This implies that managers should be aware that food prosumption behaviour for oneself is mostly driven by past experiences and habit. Since habitual behaviour tends to be done more or less automatic with modest considerations of deliberation, established

habitual behaviour will be difficult to change. Therefore, managers need to invest substantial effort to create attentions and willingness to evaluate present and possible alternatives (i.e., by making their products more available to the consumers). This requires insight into consumers' present behaviours and their automated thoughts in order to introduce and make alternatives attractive. Moreover, our finding shows that the determinant role of past behaviour holds across cultures, which also indicates that this is likely universal. This means that managers could probably standardize their marketing practices across cultures for those products that are aimed at food prosomption behaviours in the individual consumption context without involving others.

Second, in the social consumption context involving others, the decision making process underlying dinner preparation is a more deliberative one. Major predictors in the extended TPB play a significant role in decision making besides controlling the effect of past behaviour. However, different elements in the model vary in their importance in predicting intentions (and thus behaviours) across cultures. This first indicates that the detail knowledge about the social aspect of the consumption situation is important in both product development and marketing communications in order to meet consumers' needs and preferences. This finding also implies that managers will have different channels to influence people's decision making in food prosomption involving others in different cultures. For instance, in an individualistic culture, managers could focus on creating and maintaining positive attitudes toward food prosomption by emphasizing various benefits from food prosomption behaviour. In a collective culture, managers should focus more on social expectations for food prosomption. Perceived behavioural control

is found important to predict prosomption tendency in both cultures. This indicates that one way to increase food prosomption propensity is to enhance people's perceived behavioural control over the food prosomption process. This can be done either through customer education or by modifying product offering, say, by providing half-processed food products or relevant tools.

Finally, our findings show the concept of perceived behavioural control apparently captures a certain amount of more group-based aspects of collective cultures; however, in individualistic cultures, the concept captures the individual responsibility and ability for control over one's own behaviours. This is consistent with Markus and Kitayama's (1991) argument about interdependent selves in collective culture and independent selves in individualistic culture. In a collective culture such as the Chinese culture, perceived control over one's behaviour most likely refers to the collective control of a group to which one belongs. This indicates that construct of perceived behavioural control and its measures need be modified in order to become applicable across cultures.

Needless to say – more research is needed. The current study has only investigated one specific type of food prosomption behaviour, dinner preparation in the daily life, in two cultures. Future studies should explore other types of food prosomption behaviours that are embedded with more symbolic values and rich culture meanings, such as preparing a Christmas dinner. Another promising direction for future studies is to explore other factors that might also influence the decision making process in food prosomption, such as positive and negative emotions, social identity, and group norms. Finally, findings from the current study should also be replicated in other cultures than the two cultures studied herein.

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