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Consumers, food and convenience: The long way from resource constraints to actual consumption patterns

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Abstract

Two theoretical frameworks have been used in previous research to explain consumers' interest in effort-saving activities in the context of meal production: the household production approach and the convenience orientation approach. A model is developed that synthesizes both approaches, assuming that the influence of resource constraints on actual convenience behaviours is doubly mediated, first by perceptions of resource constraints, and then by convenience orientations. In Study 1, the model is calibrated based on a sample of 1000 French respondents with main responsibility for food shopping and meal preparation in their households. In Study 2, the model is cross-validated using a similar sample of 1000 UK respondents. Results of both studies support the double mediation hypothesis.

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1. Introduction

Everybody agrees that the importance of convenience in the production and marketing of food products and services is increasing. In a US survey, 55% of respondents indicated that convenience is 'very important' in their food purchases (Senauer, 2001). In many countries of the Western world, the share of meals eaten outside the home is increasing (Senauer, 2001). But what, actually, do we mean when we say convenience? What is its real importance, and what are the main drivers behind the trend towards increased convenience? These are the questions we would like to address in this paper.

Convenience is a multifacetted phenomenon (Costa, Dekker, Beumer, Rombouts, & Jongen, 2001; Jack, O'Neill, Piacentini, & Schröder, 1997). 'Convenient' suggests that something can be done with reduced effort, and convenience in the food area usually suggests that some kind of effort is saved or reduced. Various proposals for multidimensional definitions of convenience have been suggested (Brown, 1989; Yale & Venkatesh, 1985). We find most useful the distinction of Darian and Cohen (1995), who suggest that convenience in food can be categorized along two dimensions:

- What kind of effort is being reduced? Possibilities are a saving of time, of physical energy, or of mental energy.
- In which phase of the home food production chain does the saving occur? Possibilities are when deciding what to eat, purchasing, preparation, consumption and cleaning up.

Table 1 combines these two dimensions into a typology of food convenience and gives examples for the various combinations. The typology is obtained from the food

Table 1
A typology of convenience in meal preparation

Consumption stage	What is being saved?		
	Time	Physical energy	Mental energy
Planning	Habitual purchasing, weekly meal plans, intelligent fridge		Products arranged by recipe in shop, space management, intelligent fridge
Purchasing	One-stop shopping, home delivery	Help in packaging and checking out, good parking facilities, home delivery	Known store layout, automated reordering
Preparation	Ready-made meals, eating out, microwave ovens	Blenders and other kitchen appliances	Clear instructions
Eating	One course meals, stand-up food outlets	Pre-cut food, meat without bones	Familiar food, finger food
Disposal	One-way containers	Dish washer	

consumer viewpoint. From the production point of view, we can further distinguish between which actor in the food chain brings about the added convenience: the food producer, the retailer or a food service provider. An additional dimension may be whose effort is being reduced: since meal production occurs in a family context, some forms of convenience may mean reduced effort for the main shopper and meal preparator, whereas other forms of convenience may mean reduced effort for the whole family.

1.1. Theoretical approaches

Two theoretical approaches have been dominant in attempts to explain the increasing importance of convenience. We can call them the household production approach and the convenience orientation approach.

The household production approach goes back to the work of Becker (1965), who argues that households produce outputs like meals for the family employing a production function in which products and services purchased, the capital stock of the household and the time used are the major production factors. To some extent, these production factors can substitute each other, and when their relative prices change, the relatively cheaper one will substitute the relatively more expensive one. When the opportunity cost of time increases, because salaries are raised or the housewife enters the labour market, this will result in time used for meal production being substituted by increased purchase of time-saving (i.e., convenient) products, services or kitchen appliances speeding up the production of meals (Blalock, Smallwood, Kassel, Variyam, & Aldrich, 1999; Bonke, 1996; Cullen, 1994; Senauer, 2001).

This approach has resulted in considerable research especially on the impact of the employment status of the wife on the role of convenience in food purchases. A consistent result has been that households with a working wife buy more meals outside the home, especially fast food types of meals (Darian & Klein, 1989; Jacobs, Shipp, & Brown, 1989; Kim, 1989; Nickols & Fox, 1983; Soberon-Ferrer & Dardis, 1991), although some of that effect may actually be due to the higher household income in families with both partners employed (Darian & Klein, 1989; Strober & Weiberg, 1980). Surprisingly, however, there seemed to be no impact of employment status of the wife on the purchase of convenience food items for home use, i.e., products which have undergone some form of pre-preparation (Darian & Klein, 1989; Kim, 1989; Strober & Weiberg, 1980), even though working wives seem to have a more positive attitude not only to eating out but also to quickly prepared meals (Jackson, McDaniel, & Rao, 1985).

The attitudinal measure employed in the last two studies mentioned are actually alien to the household economics approach, where differences which cannot be accounted for by economic variables are relegated to differences in tastes, which are regarded as exogenous to the approach. In contrast, such differences are central in the convenience orientation approach, which is in the consumer psychology tradition. Compared to the household production approach, it builds much less on a uniform framework, but is has as its common core the use of attitudinal variables and a heavy emphasis on the importance of perceived as compared to objective constraints.

Convenience orientation can be loosely defined as a positive attitude towards time and energy saving aspects in household meal production. The concept has been defined and developed most clearly in the work of Candel (2001), who has developed a convenience orientation scale, which is unidimensional and contains items like "The less physical energy I need to prepare a meal, the better", "The ideal meal can be prepared with little effort" and "Preferably, I spend as little time as possible on meal preparation". But similar concepts also appear in other contexts, for example in Steptoe, Pollard, and Wardle (1995) food choice questionnaire and in Luqmani, Yavas, and Quraeshi (1994) convenience segmentation study. Convenience orientation, being an attitudinal construct, is expected to have an impact on convenience-related behaviours, like the purchase of convenience products, the use of convenient shopping outlets and the use of eating out and home meal replacements.

The demographic determinants emphasized in the home production approach are here regarded as determinants of convenience orientation, or, put another way, convenience orientation is regarded as a mediator between demographic (and other) determinants and convenience-related behaviours. Household income is also here regarded as a major determinant, with higher incomes leading to a stronger convenience orientation. Other determinants are the participation of women in the labour market, where especially working more than 30 hours a week seems to be a major threshold. Family size, and here especially single vs. multiple person households, has been shown to be another determinant, with single households being more convenience oriented (e.g., Candel, 2001; Cowan, Cronin, & Gannon, 2001; Swoboda & Morschett, 2001; Verlegh & Candel, 1999).

The number of work hours of the woman is expected to have an effect on convenience orientations and behaviours because of the increased time pressure it creates. However, it has been emphasized in the psychological approaches that the perceived time pressure is a stronger determinant of convenience orientation than the actual number of working hours (Darian & Cohen, 1995). Time perception is a research area in its own right, and has been drawn upon in attempts to explain differences in convenience orientation (e.g., Chetthamrongchai & Davies, 2000).

Finally, several authors have argued that the trend towards convenience has also roots in changing consumer values, and that values like individualism and self-fulfilment may be at cross with traditions like regular family meals and spending a lot of time in the kitchen. For example, Goldsmith, Freiden, and Henderson (1995) found weak but significant relationships between various items in the List of Values (Kahle, 1983) and a pro-snacking scale (see also Swoboda & Morschett, 2001).

In the remainder of the paper, we will develop a revised convenience orientation model, which summarizes the major propositions about the convenience construct in the literature. This model recognizes the importance of resource constraints (like time and income) for explaining demand for increased convenience, but assumes that they are doubly mediated in their effect on behaviour, namely by perceived resource constraints and by convenience orientation. In this way we hope to achieve a more complete picture of the set of determinants of convenience behaviours in the food area.

We then report an empirical study that estimates the complete set of linkages from objective resources via perceived resources to convenience orientation and convenience behaviour. Finally, we report results on how convenience orientation has developed over time in two major European markets.

1.2. A model of convenience orientation

Our model of convenience orientation is depicted in Fig. 1. Given the discussion of the various aspects of convenience above, we regard *convenience orientation* as a multidimensional construct, and, in the same vein, we regard convenience behaviour as a multidimensional attitudinal construct. More specifically, we will distinguish two dimensions: *attitude to convenience shopping and attitude to convenience products*. We expect convenience orientation to be affected by the way in which food and eating enter the consumers' value system, which we summarize by the construct *involvement with food*, and by the resources (objective and perceived) at the household's disposal for meal production. Resources cover disposable time and disposable income. Convenience orientation will affect *convenience behaviour*, which we also divide into two dimensions corresponding to the two dimensions of convenience orientation: *convenience shopping behaviour* and *convenience product usage.*

We do, however, open up for the possibility that the relationship between perceived resources and convenience behaviours might not always be mediated by convenience orientation. This means that we believe that households may engage in convenience behaviours because of perceived resource constraints, even though their attitude towards convenience in meal production is not positive. This parallels arguments made in the theory of planned behaviour (Ajzen, 1991; Ajzen & Madden, 1986) and self-efficacy theory (Bandura, 1986, 1992a, 1992b), claiming that people may engage in behaviours to which they have a negative attitude when they believe that they do not have the resources or capabilities to engage in the more desirable behaviours. A study comparing perceptions of actual and 'ideal' meals did show that ideal meals were consistently perceived as less convenient than actual meals

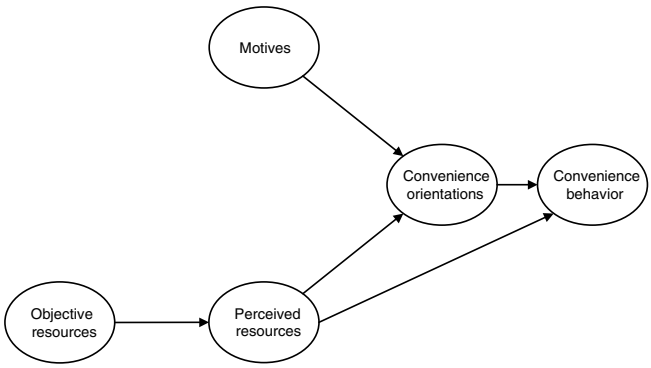

Fig. 1. Conceptual model.

(Rappoport, Downey, & Huff-Corzine, 2001), giving support to such a direct link between perceived resources and behaviour.

1.3. Overview of empirical research

The empirical part of the paper consists of two sections describing two studies. In the first study, we try to empirically estimate the model depicted in Fig. 1 based on data from a sample of 1000 French consumers. This leads to some small revisions of the model and a more precise formulation of the relationships involving the two subdimensions of convenience orientation and convenience behaviour, and of the relationships involving the various aspects of objective and perceived resources. In Study 2 we then try to cross-validate the resulting model based on data from a sample of 1000 UK consumers.

2. Study 1: Model development

2.1. Method

2.1.1. Participants

A random sample of $N = 1000$ households was drawn in France in 1998 with a quota imposed on region. Interviews were then conducted with the person mainly responsible for food shopping and cooking in the household, with an additional quota on age. 19.0% of the participants were from the Paris region, 18.0% from Bassin Parisien, 7.0% from Nord, 8.9% from Est, 13% from Quest, 11.2% from Sud-Ouest, 11.9% from Centre-Est, and 11.0% from Méditerranée. The mean age of the participants was 48.17 years ($SD = 15.45$), 87.1% of the respondents were female. The fieldwork was commissioned to a local market research agency.

2.1.2. Procedure

All interviews were conducted personally at home. Upon agreement to participate, respondents were screened according to three inclusion criteria. The interviews were only continued when the participants (a) did not work in advertising, market research or public relations, (b) were mainly responsible for the food shopping and cooking in their household, and (c) their age fit the quota. When all inclusion criteria were met, participants completed a questionnaire consisting of (a) the 69 items of the food-related lifestyle instrument (FRL; Brunsø & Grunert, 1995), (b) the 37 items of the food-related behaviour list (FRB; Brunsø, Scholderer, & Grunert, 2002), (c) 22 newly constructed items measuring consumers' consumption motives (CM), (d) 13 newly constructed items measuring consumers' perceived household resources (PRS), (e) 18 items asking about objective household resources (ORS), plus a number of additional modules which will be or have already been published elsewhere. The questionnaire concluded with a set of demographic questions. All items had originally been developed in English. The back-translation method was utilized for the French adaptation of the questionnaire.

2.1.3. Measures

Perceived household resources, involvement, attitude and behaviour variables were treated as latent constructs and were thus measured by multiple indicators. Objective household resources were viewed as manifest variables and were therefore measured by single indicators.

Objective household resources were measured in terms of (a) household size, indexed by the number of adults and the number of children below the age of 16 in respondents' household, (b) monetary resources, indexed by disposable household income, and (c) time budget, indexed by the employment status of the respondent and the respondent's spouse. Items related to perceived household resources, convenience orientations, and convenience-related behaviour were selected from among the other questionnaire items and checked for their factor structure by means of exploratory factor analysis. The final set of measures is shown in Tables 2 and 3.

All items asking about perceived household resources, involvement with food and cooking, attitudes to convenience shopping, and attitudes to convenience products were answered on seven-point scales ranging from "completely disagree" (1) to "completely agree" (7). All items asking about the frequency of convenience shopping behaviours and convenience product usage were answered on seven-point scales with scale points labelled "never" (1), "less frequent" (2), "1–5 times every six months" (3), "1–3 times a month" (4), "1–2 times a week" (5), "3–4 times a week" (6), and "every day or almost every day" (7).

The way convenience orientations are measured may be seen as somewhat narrow. However, narrow construct operationalizations like this have a number of advantages: first, the level of specificity is comparable for convenience orientations

Table 2
Objective and perceived household resource measures

Label	Item
Household size	
NADULT	Number of adults in household
NCHILD	Number of children in household
Objective monetary resources	
DISPINC	Disposable income (FF 1000)
Objective time budget	
EMR	Employment status of respondent (full time, part time, not active in labour force)
EMS	Employment status of spouse (full time, part time, not active in labour force)
Perceived monetary resources	
PMONEY1	We spend as much money on food products as we like
PMONEY2	I would like to have a larger food budget
PMONEY3	If we wanted to, we could afford to spend more money on food products
PMONEY4	We cannot afford to spend more money on food products
Perceived time budget	
PTIME1	We are busy on weekdays
PTIME2	We spend far too much time cooking and shopping for food products
PTIME3	I would like to have more time for food shopping and cooking

Table 3
Involvement, attitude and behaviour measures

Label	Item
Involvement with food and cooking	
INV1	I like to seek challenges in the kitchen
INV2	I think that cooking is great fun
INV3	You should cook those dishes that you yourself think it is exciting to cook
INV4	Experimenting in the kitchen is an important part of my personal growth
INV5	To create a delicious meal gives me a feeling of great personal satisfaction
INV6	I think that it is important to have fun while preparing and cooking a meal
Attitude to convenience shopping	
ACOSHO1	I like buying food products in speciality food shops where I can get expert advice (–)
ACOSHO2	I do not see any reason to shop in speciality food shops
ACOSHO3	I like to know what I am buying, so I often ask questions in shops where I shop for food (–)
Attitude to convenience products	
ACOPRO1	We use a lot of ready-to-eat foods in our household
ACOPRO2	In our house, nibbling has taken over and replaced set eating hours
ACOPRO3	I use a lot of frozen foods in my cooking
ACOPRO4	I use a lot of mixes, for instance baking mixes and powder soups
Convenience shopping behaviour	
BCOSHO1	I shop at the cheese shop (–)
BCOSHO2	I shop at the fish-monger's (–)
BCOSHO3	I shop at the butcher's (–)
BCOSHO4	I shop at the fruit shop/greengrocer's (–)
Convenience product usage	
BCOPRO1	I use ready-prepared dishes that just need to be heated up
BCOPRO2	I snack instead of eating a big dinner
BCOPRO3	I eat fast food out

(operationally defined as attitudes towards certain convenience-related behaviours) and actual behaviours (operationally defined as the frequency of certain convenience-related behaviours), meeting Fishbein and Ajzen's (1975; also see Ajzen & Fishbein, 1977) recommendations for optimally estimating the strength of the attitude–behaviour relationship. Second, a focus on behaviours instead of product attributes in the measurement of attitudes may be more suitable for attitudes which are rooted in direct experience (cf. Millar & Millar, 1996).

2.1.4. Model

According to the conceptual model outlined in Fig. 1, objective household resources and involvement with food act as exogenous variables, and perceived household resources, attitudes to convenience shopping, and attitudes to convenience products as mediators in the process that determines consumers' actual convenience behaviour. The hypothesized structure will be tested by means of structural equation modelling. The general model is defined by three simultaneous equations (Jöreskog, 1970):

$$\mathbf{x} = \mathbf{\Lambda}_x \boldsymbol{\xi} + \boldsymbol{\delta}, \tag{1}$$

$$\mathbf{y} = \mathbf{\Lambda}_y \boldsymbol{\eta} + \boldsymbol{\varepsilon}, \tag{2}$$

$$\boldsymbol{\eta} = \mathbf{B}\boldsymbol{\eta} + \mathbf{\Gamma}\boldsymbol{\xi} + \boldsymbol{\zeta}. \tag{3}$$

Eqs. (1) and (2) are factor-analytic measurement models, with $\mathbf{x}$ being a $P \times 1$ vector of observed exogenous variables that are centred around their means, $\boldsymbol{\xi}$ an $M \times 1$ vector of latent exogenous variables with $M \times M$ covariance matrix $\boldsymbol{\phi}$, $\mathbf{\Lambda}_x$ a $P \times M$ matrix of factor loadings describing the regression of $\mathbf{x}$ on $\boldsymbol{\xi}$, and $\boldsymbol{\delta}$ a $P \times 1$ vector of random errors in $\mathbf{x}$ with covariance matrix $\boldsymbol{\theta}_\delta$. Likewise, $\mathbf{y}$ is a $Q \times 1$ vector of observed endogenous variables that are centred around their means, $\boldsymbol{\eta}$ an $N \times 1$ vector of latent endogenous variables, $\mathbf{\Lambda}_y$ a $Q \times N$ matrix of factor loadings describing the regression of $\mathbf{y}$ on $\boldsymbol{\eta}$, and $\boldsymbol{\varepsilon}$ a $Q \times 1$ vector of random errors in $\mathbf{y}$ with covariance matrix $\boldsymbol{\theta}_\varepsilon$. Eq. (3) defines the structural model, where $\mathbf{\Gamma}$ is an $N \times M$ weight matrix describing the regression of latent endogenous on latent exogenous variables, and $\mathbf{B}$ an $N \times N$ weight matrix describing the regression of latent endogenous on latent endogenous variables. Finally, $\boldsymbol{\zeta}$ is an $N \times 1$ vector of equation errors with $N \times N$ covariance matrix $\boldsymbol{\psi}$.

Objective household resources will be included as manifest fixed-effects exogenous variables ξ_i (with loadings fixed to $\lambda_{ii} = 1$ and error variances fixed to $\theta_{ii} = 0$). The categorical measures for employment status will be encoded by means of two dummy variables each, using the effect-coding scheme (with $x_i = +1$ for the reference category, -1 for the comparison category, and 0 for the neutral category). Parameters of interactions between objective household resource measures will be estimated by entering the effects of their product terms in a second block after main effects have been estimated in a first block, still controlling for the main effects (see Cohen & Cohen, 1983). Consumers' involvement with food and cooking will be specified as a latent exogenous factor as defined in Eq. (1). Perceived monetary resources, perceived time budget, attitudes to convenience shopping, attitudes to convenience products, actual convenience shopping behaviour and actual convenience product usage will be specified as latent endogenous factors as defined in Eq. (2).

2.2. Results

2.2.1. Normality check

To check whether the distributional assumptions of maximum likelihood estimation (ML) were met, multivariate skewness and kurtosis statistics were computed for the joint distribution of the observed variables measuring involvement with food and cooking, perceived household resources, attitudes to convenience shopping, attitudes to convenience products, actual convenience shopping behaviour, and actual convenience product usage (excluding the objective household resource measures). The distribution deviated significantly from normality. To account for the violation of assumptions, all observed variables (except for objective household resource measures) were normalized using Tukey's proportion estimation formula.

2.2.2. Measurement models

Following Anderson and Gerbing's (1988) two-step approach, measurement models for exogenous and endogenous variables were estimated separately before combining them with the structural model. Both models were estimated by means of maximum likelihood using LISREL 8.30 (Jöreskog & Sörbom, 1996). The measurement model of the exogenous variables showed excellent fit (normal-theory weighted least squares $\chi^2 = 274.559$, df = 114, RMSEA = 0.038, TLI = 0.983). The measurement model of the endogenous variables was well within conventional acceptance limits (Browne & Cudeck, 1993) (normal-theory weighted least squares $\chi^2 = 809.853$, df = 174, RMSEA = 0.060, TLI = 0.877). Parameter estimates, *t*-values and construct reliabilities are shown in Tables 4 and 5. As noted before, objective household resources were treated as manifest variables measured by single indicators; parameters for these variables were fixed to 1 in the measurement model.

2.2.3. Structural model

To test the "molar" structure of the model, a blockwise comparison procedure was chosen. Starting from a baseline model assuming all **B** and **Γ** regression coefficients to be zero, effects were entered in nine blocks: (1) direct effects of attitudes on behaviour, (2) direct effects of involvement on attitudes, (3) direct effects of perceived resources on attitudes, (4) direct effects of objective resources on perceived resources, (5) direct effects of objective resources on behaviour, (6) direct effects of objective resources on attitudes, (7), direct effects of perceived resources on behaviour, (8) direct effects of involvement on perceived resources, and (9) direct effects of involvement on behaviour.

After each block, the incremental fit was evaluated according to two criteria. Improvement of overall model fit was evaluated by means of a χ^2-difference test (Steiger, Shapiro, & Browne, 1985), and relative improvement per degree of freedom was evaluated by means of a stepwise TLI (Tucker & Lewis, 1973). A block was

Table 4
Measurement model, parameter estimates: Exogeneous variables

Item	Study 1			Study 2		
	λ	*t*	Construct reliability	λ	*t*	Construct reliability
Involvement with food and cooking			0.859			0.884
INV1	1.000	(Fixed)		1.000	(Fixed)	
INV2	1.075	24.140		0.957	30.521	
INV3	0.889	19.889		0.733	21.069	
INV4	1.026	23.228		0.925	28.820	
INV5	0.737	17.031		0.712	21.212	
INV6	0.927	21.372		0.903	27.815	

Note. Parameters for objective resources were fixed to 1.

Table 5
Measurement model, parameter estimates: Endogeneous variables

Item	Study 1			Study 2		
	λ	t	Construct reliability	λ	t	Construct reliability
Perceived monetary resources			0.775			0.754
PMONEY1	1.000	(Fixed)		1.000	(Fixed)	
PMONEY2	0.993	19.484		0.971	13.142	
PMONEY3	1.044	20.247		1.233	14.857	
PMONEY4	1.193	22.011		1.344	15.114	
Perceived time budget			0.499			0.296
PTIME1	1.000	(Fixed)		1.000	(Fixed)	
PTIME2	0.974	8.909		2.472	2.856	
PTIME3	1.275	8.928		4.233	2.900	
Attitude to convenience shopping		0.381				0.555
ACOSHO1	1.000	(Fixed)		1.000	(Fixed)	
ACOSHO2	2.835	5.795		0.355	5.990	
ACOSHO3	2.250	5.616		0.656	7.444	
Attitude to convenience products			0.604			0.609
ACOPRO1	1.000	(Fixed)		1.000	(Fixed)	
ACOPRO2	0.516	13.010		0.591	11.403	
ACOPRO3	0.747	18.183		0.715	12.682	
ACOPRO4	0.770	17.748		0.585	10.868	
Convenience shopping behaviour			0.772			0.718
BCOSHO1	1.000	(Fixed)		1.000	(Fixed)	
BCOSHO2	0.974	23.903		1.182	12.708	
BCOSHO3	0.996	23.431		1.362	13.084	
BCOSHO4	0.955	22.544		1.261	12.698	
Convenience product usage			0.505			0.551
BCOPRO1	1.000	(Fixed)		1.000	(Fixed)	
BCOPRO2	0.502	12.753		0.670	10.857	
BCOPRO3	0.524	13.735		0.737	11.538	

accepted as a substantial improvement if and only if (a) the χ^2-difference test was significant, and (b) the TLI was positive. The results are shown in Table 6.

As expected, attitudes to convenience had significant direct effects on convenience-related behaviour, and were in turn directly dependent on consumers' involvement with food and consumers' perceived household resources. Also as predicted, consumers' objective household resources had a substantial impact on perceived household resources. According to our evaluation criteria, the influence of objective household resources on consumers' attitudes to convenience was

Table 6
Structural model (Study 1), blockwise comparisons

Block	Effects entered	Goodness of fit			Incremental fit			
		χ^2	df	RMSEA	$\Delta\chi^2$	Δdf	p	TLI
0	Baseline	4213.031	962	0.058				
1	Attitudes on behaviour	3160.423	958	0.048	1052.608	4	0.000	0.320
2	Involvement on attitudes	3065.532	956	0.047	94.891	2	0.000	0.040
3	Perceived resources on attitudes	3002.318	952	0.046	63.214	4	0.000	0.024
4	Objective resources on perceived resources	2349.481	910	0.040	652.837	42	0.000	0.266
5	Objective resources on behaviour	2270.625	868	0.040	78.856	42	0.000	−0.022
6	Objective resources on attitudes	2177.944	826	0.040	92.681	42	0.000	−0.013
7	Perceived resources on behaviour	2170.305	822	0.041	7.639	4	0.106	−0.002
8	Involvement on perceived resources	2169.850	820	0.041	0.455	2	0.797	−0.004
9	Involvement on behaviour	2157.683	818	0.040	12.167	2	0.002	0.005

completely mediated by perceived household resources. Our theoretical model also expected actual behaviour to be directly affected by perceived household resources. This prediction could not be confirmed according to our evaluation criteria.

Only one unexpected relationship emerged as substantial: a direct influence of consumers' involvement with food on convenience-related behaviour. For estimating the final model, only those blocks were included that have emerged as significant and substantial according to the criteria defined above. A path diagram including only significant effects of the final model is presented in Fig. 2. All coefficients have the expected signs except for the positive effect of involvement on convenience shopping behaviour. Since such an effect would be theoretically uninterpretable, it appears likely that the positive relationship between the two constructs is actually caused by an unobserved third variable that has positive effects on both, and thereby induces a spurious correlation.

2.3. Discussion

The overall structure of the determinants of convenience-related consumer behaviour as proposed in the theoretical model could be confirmed. The results of Study 1 indicate that consumers' objective household resources do affect their convenience shopping and product usage, but in an indirect way. In the present analysis, the effect was completely mediated by consumers' perceptions of their household resources and, subsequently, their attitudes to convenience. Complete mediation of objective resource effects by perceived resources suggests that consumer's perceptions capture

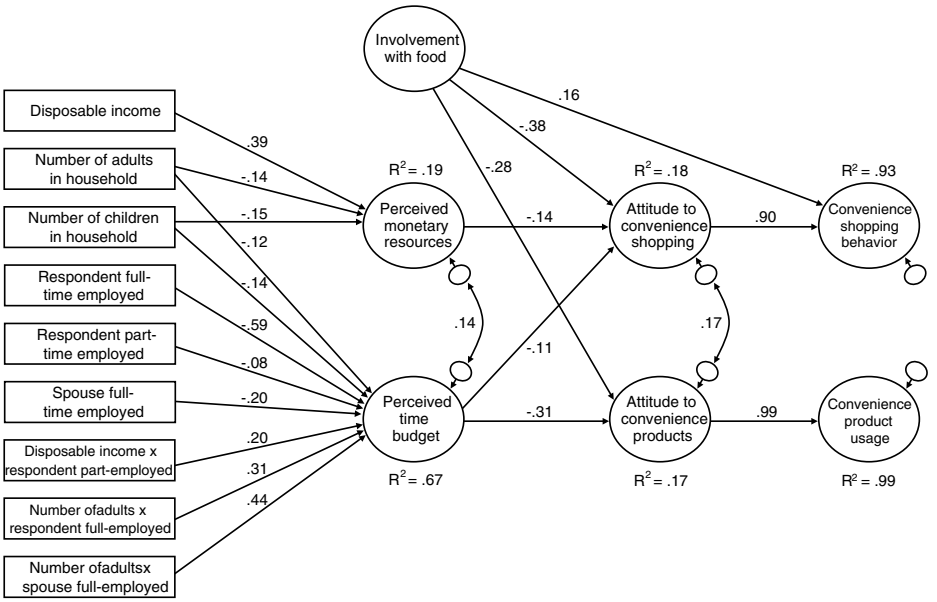

Fig. 2. Final estimates for convenience model in French consumer population ($N = 1000$; completely standardized solution; non-significant paths [$p > 0.05$] omitted).

the *entire* share of the variation in objective resources that is actually responsible for variations in behaviour. In contrast to our predictions, however, we could not establish an additional direct effect of perceived resources on consumers' behaviour.

2.3.1. Resource effects

Perceived monetary resources were primarily dependent on the disposable income of consumers' households. Still, the effect was only of moderate size (standardized $\beta = 0.39$). Additional (although weaker) determinants were the number of adults and the number of children in the household. Controlling for employment status and disposable income, the still negative sign of both effects suggests that the additional demands of a family life operate in an amplifying way in consumer's perceptions, making it seem an even larger drain on subjective household resources than suggested by objective data alone.

The same effects of household size indicators were found for perceived time budget. Again, a family life seemed to be perceived as an additional demand in itself that went beyond objective resource constraints. Employment status of the respondent had, as expected, a strongly negative effect on perceived time budget. In this particular sample, respondents were predominantly female as only the persons mainly responsible for food shopping and cooking were surveyed. In line with previous research (see above), the effect of full-time employment was much stronger than the effect of part-time employment of the respondent. Full-time employment of the spouse had a medium-strength effect in the same direction, but part-time

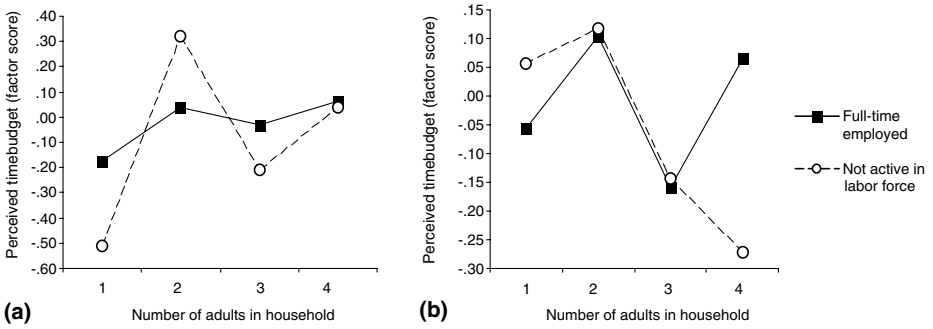

Fig. 3. Perceived time budget as a function of household size and employment status in French consumer population ($N = 1000$). (a) Respondent employment; (b) spouse employment.

employment of the spouse – this mainly being the male parts of a couple – did not affect respondent's perceived time budget at all.

In addition, the number of adults in respondents' households showed significant interactions with the employment status of the respondent as well as with the employment status of the spouse. Examination of the conditional effects (Fig. 3) indicates that respondents who were not active in the labour force only perceived a higher personal time budget under the condition that there were two adults in the household. Rather surprisingly, the conditional effect turned around when the respondent was the only adult in the household, with full-time employed respondents perceiving a *higher* personal time budget than respondents who were not active in the labour force. The same conditional effect was found in households with three adults. In households with four adults there were no differences with regard to respondents' employment status.

There is no obvious explanation in economic terms for the paradoxical effect in the single-adult household group. Psychosocial resources, however, have repeatedly been demonstrated to suffer under conditions of unemployment (Clark & Oswald, 1994; Goldsmith, Veum, & Darity, 1997; Jahoda, 1982), so that the reduction in perceived time budget in single-adult households may either be interpreted as part of a generalized stress syndrome involving feelings of "being under strain" (Baum, Fleming, & Reddy, 1986; Dooley, Rook, & Catalano, 1987; Leana & Feldman, 1988; Theodossiou, 1998) or, more positively, as a consequence of current efforts to find a job (Kulik, 2001).

2.3.2. Predictive validity

Overall, the predictive validity of the model was amazingly high. The model could explain no less than 93% of the reliable variance of convenience shopping behaviour, and 99% of the reliable variance in convenience product usage. With standardized regression coefficients of $\beta = 0.90$ and 0.99, respectively, the attitudinal constructs "attitude to convenience shopping" and "attitude to convenience products" were almost perfect proximal predictors for actual convenience shopping and product usage. Partially responsible for this will be the high correspondence in specificity

between attitude measures and behaviour measures, perhaps taking Fishbein and Ajzen's (1975) recommendations for attaining "optimal" estimates of the attitude–behaviour relation a bit too far. A second reason may be that the use of factor-analytic measurement models in structural equation modelling involves an implicit correction for attenuation, that is, only the *reliable variation* in attitudinal and behavioural measures is taken into account. Since some of the construct reliabilities were relatively low for one attitudinal construct (attitude to convenience shopping, Jöreskog $\rho = 0.38$) and one behavioural construct (convenience product usage, Jöreskog $\rho = 0.51$), the implicit correction for attenuation may have artificially boosted the regression coefficients and thereby overestimated the attitude–behaviour relation. Study 2 will attempt to replicate the results in a different consumer population, providing more clarity about the strength of the attitude–behaviour relation.

3. Study 2: Cross-validation

3.1. Method

A random-route sample of $N = 1000$ households was drawn in the United Kingdom (without Northern Ireland) in 1998, with a quota imposed on region. As in Study 1, interviews were conducted with the person mainly responsible for food shopping and cooking in the household, with an additional quota on age. 14.1% of the participants were from Scotland, 10.0% from the North East region, 6.1% from the North West, 12.0% from Yorkshire and Humberside, 7.9% from the Midlands, 15.8% from East Anglia, 4.1% from Wales, 3.9% from the South West, 8.3% from the South East, and 17.8% from Greater London. The mean age of the respondents was 44.10 years (SD = 14.91), 87.0% of the respondents were female. The fieldwork was commissioned to a local market research agency. Measures and model were exactly the same as in Study 1.

3.2. Results

3.2.1. Normality check

Multivariate skewness and kurtosis statistics were computed for the joint distribution of the observed variables. Again, the distribution deviated significantly from normality. To account for the violation of assumptions underlying ML estimation, all observed variables (except for objective household resource measures) were normalized using Tukey's proportion estimation formula.

3.2.2. Measurement models

Measurement models for exogenous and endogenous variables were estimated separately by means of maximum likelihood. The measurement model of the exogenous variables showed excellent fit (normal-theory weighted least squares $\chi^2 = 266.393$, $df = 114$, RMSEA = 0.037, TLI = 0.982). The measurement model of the endogenous variables was well within conventional acceptance limits (normal-theory

weighted least squares $\chi^2 = 869.965$, df = 174, RMSEA = 0.066, TLI = 0.772). Parameter estimates, *t*-values and construct reliabilities for non-fixed parameters are shown in Tables 4 and 5.

3.2.3. Structural model

The blockwise model comparisons from Study 1 were exactly replicated. Results are shown in Table 7. When the same evaluation criteria are applied (i.e., a significant decrease in overall χ^2, and a positive TLI for the respective step), the molar structure of the model is very similar to the one found in Study 1 in a French consumer population.

The results differed only with regard to two blocks: first, the effect of involvement with food on convenience shopping behaviour (not very plausible in the first place) could not be replicated. Second, involvement had a significant effect on perceived household resources. The completely standardized solution is shown as a path diagram in Fig. 4, including only significant effects.

3.3. Discussion

The overall model structure established in Study 1 could be replicated. Results corroborate the conclusion that consumers' objective household resources do indeed affect their convenience shopping and product usage, but in an indirect way: again, the effect was completely mediated by consumers' perceptions of their household resources and, subsequently, their attitudes to convenience. Complete mediation by perceived resources suggests that consumer's perceptions capture the *entire* share

Table 7
Structural model (Study 2), blockwise comparisons

Block	Effects entered	Goodness of fit			Incremental fit			
		χ^2	df	RMSEA	$\Delta\chi^2$	Δdf	*p*	TLI
0	Baseline	3116.071	962	0.47				
1	Attitudes on behaviour	2725.383	958	0.043	390.688	4	0.000	0.176
2	Involvement on attitudes	2592.059	956	0.041	133.324	2	0.000	0.072
3	Perceived resources on attitudes	2496.771	952	0.040	95.288	4	0.000	0.052
4	Objective resources on perceived resources	2204.549	910	0.038	292.222	42	0.000	0.123
5	Objective resources on behaviour	2151.595	868	0.038	52.954	42	0.120	−0.040
6	Objective resources on attitudes	2060.105	826	0.039	91.490	42	0.000	−0.010
7	Perceived resources on behaviour	2054.612	822	0.039	5.493	4	0.240	−0.004
8	Involvement on perceived resources	2021.343	820	0.038	33.269	2	0.000	0.023
9	Involvement on behaviour	2019.835	818	0.038	1.508	2	0.470	−0.003

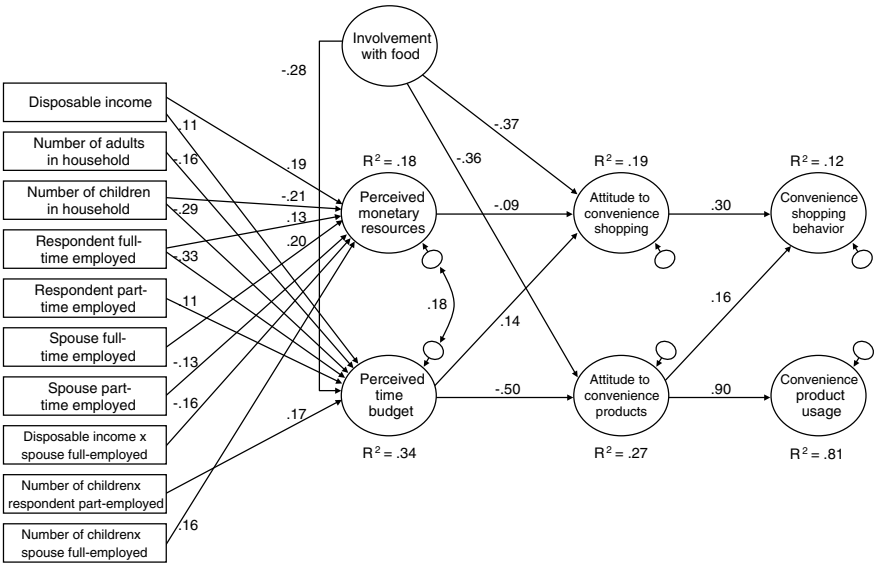

Fig. 4. Final estimates for convenience model in UK consumer population ($N = 1000$; completely standardized solution; non-significant paths [$p > 0.05$] omitted).

of the variation in objective resources that is actually responsible for variations in behaviour. An additional direct effect of perceived resources on consumers' behaviour could again not be established.

3.3.1. Resource effects

In accordance with the results of Study 1, perceived monetary resources were dependent on the disposable income of a household and the employment status of the respondent and the respondent's spouse. Both family size indicators (number of adults in the household and number of children in the household) had a significant negative impact on perceived time budget, and number of children had an additional effect on perceived monetary resources. With employment and disposable income controlled for in the model, the results corroborate the conclusion from Study 1 that the inherent strains of having a family life undergo further amplification in consumers' perception, reaching a degree that cannot be accounted for by "objective" strains on resources alone.

Disposable income had the opposite effect, boosting not only consumers' perceived monetary resources (thereby corroborating conclusions from Study 1), but also their time budget. The relation between objective and perceived monetary resources was qualified by an ordinal interaction with the employment status of the spouse. The relationship was closer when spouses were not active in the labour force than when spouses were full-time employed, suggesting that the recurrent problem of having to count pennies may result in a more accurate perception of personal resources than a situation where this is not a problem.

Employment status in itself had only partially conclusive effects. Although disposable income was controlled for, full-time employment of the respondent and full-time employment of the spouse had additional positive effects on perceived monetary resources. Part-time employment of the spouse had an additional negative effect. The pattern suggests that employment (or the lack thereof) may function as a social status marker, stigma-like amplifying consumers' perceptions of their financial resources in cases where the spouse (in our sample, this mainly being the male parts of a couple) was out of work or only in partial employment.

As in Study 1 (and as expected from previous research), full-time employment of the respondent was related to a lower perceived time budget as compared to situations where the respondent was not active in the labour force. Part-time employment of the respondent, however, resulted in a *higher* perceived time budget than no employment at all. This apparent paradox may again be related to the psychosocial consequences of being unemployed, following in a similar pattern as suggested for the peculiar interaction between number of adults and employment status that was found in Study 1 (see above).

Finally, employment status also interacted with the number of children in a household (Fig. 5). Respondents (in our sample, these were mainly the female parts of a couple) who were not active in the labour force only perceived a substantially higher time budget as compared to respondents who were part-time employed when they had no children at all. When children were present, the difference between the two groups grew immediately smaller until it vanished completely in households with three or more children. The results suggest that part-time employment may not be perceived as much of a further strain on respondents' time budget when the strain as such is already considerable, arising from the mere *presence* of children in the household. The *number* of children, surprisingly, does not seem to make a difference then.

Households where the spouse was not active in the labour force, on the other hand, developed a sharpening contrast in terms of perceived monetary resources as compared to households with a fully employed spouse when more children were

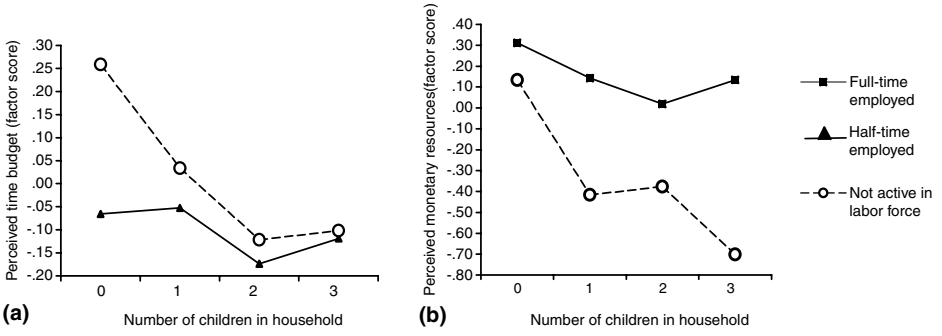

Fig. 5. Perceived time budget as a function of household size and employment status in UK consumer population ($N = 1000$). (a) Respondent employment; (b) spouse employment.

present in the household. Controlling for disposable income and the main effects of all employment and household size indicators, the interaction term was still significant, suggesting that, in poor families, the already serious strain on monetary resources is perceived to increase "exponentially" with every additional child that is present.

3.3.2. Predictive validity

The predictive validity of the model was only partially comparable to the one achieved in Study 1. In the first "layer" of the model, objective household resources explained 18% of the variance in perceived monetary resources (a stable result compared to the 19% achieved in Study 1) and 34% of the variance in perceived time budget, which is a substantial decline as compared to the 67% achieved in Study 1. In the second layer of the model, perceived resources explained 19% of the variance in attitude to convenience shopping (18% in Study 1), and 27% of the variance in attitude to convenience products, a substantial increase as compared to the 17% in Study 1. In the final layer of the model, convenience attitudes could explain 12% of the variance in convenience shopping behaviour – a serious decrease from the 93% in Study 1 – and 81% of the variance in convenience product usage, compared to the 99% achieved in Study 1. The considerable reduction here suggests that, in Study 1, the implicit correction for attenuation involved in the use of factor-analytic measurement models may in fact have led to overestimation of the attitude–behaviour relation.

3.3.3. Cross-cultural validity

Taken together, the model seems to be sufficiently stable in its main parts when compared across the two countries. In Study 1, where a French consumer population was investigated, we could show that convenience-related behaviours were determined by constraints and resources through a double mediation process. The very same process could be replicated in Study 2 in the United Kingdom, a consumer population that markedly differs from France in all aspects of food culture and consumption. The role of involvement in the model remains somewhat ambiguous: in Study 1, involvement had direct effects on convenience attitudes, whereas in Study 2, involvement operated through perceived resources and affected attitudes only indirectly.

A second difference was the comparatively low degree to which convenience shopping behaviour was determined by convenience attitudes. A plausible hypothesis would be that the retail structure in Britain has long changed its character before our survey was conducted, implementing convenience-oriented formats on a broad scale so that they are fully incorporated in consumers' shopping routines by now. In situations of routine store choice, attitudes would have lost their effects as determinants of the decision process simply because choice has already become habitual.

A cross-validation in a different culture is a quite severe test, because we not only test the model against a different sample from the same population, but against a sample from a different culture. Problems in cross-cultural consumer research have been widely discussed (e.g., Bhalla & Lin, 1987; Douglas & Craig, 1997), and if

our model stands the test in spite of measurement equivalence issues and other difficulties (including more mundane issues like differences in the demographic composition of the population in the two countries), this provides good evidence for the robustness of the model. However, the question about further generalizability beyond the two cultures involved is a difficult matter, which will be addressed in the next section.

4. General discussion and conclusions

4.1. Evaluation of convenience orientation model

The principal aim of the present paper was to reconcile two approaches which have been used to explain consumers' tendency towards effort saving in food shopping and meal preparation: the household production approach (Becker, 1965) and the convenience orientation approach (Candel, 2001). We have presented a model where resource constraints, operationalized in terms of income and time, are expected to affect convenience behaviours, but are doubly mediated by perceived resources and convenience orientation. The model was calibrated using a sample of French consumers (Study 1) and then cross-validated using a sample of UK consumers (Study 2).

The results of both studies confirmed the assumption of a double mediation process. In France as well as in the UK, the effects of objective resource constraints on consumers' convenience orientations were completely mediated by perceived resources. In addition, the effects of perceived resources on convenience behaviours were completely mediated by convenience orientation. This is actually a stricter form of mediation than we had originally expected: drawing on an argument prominent in several theories in social psychology (e.g., Ajzen & Madden, 1986; Bandura, 1986), our expectation was that perceived resource constraints can lead to convenience behaviours even when the attitude towards these behaviours is not positive. This, however, turned out not to be the case: all effects of perceived resource constraints on store choice and product choice were completely mediated by consumers' convenience orientations.

Another interesting conclusion to be drawn from Studies 1 and 2 is that the relationship between objective and perceived resources is rather more complex than often assumed, which may explain the lack or paucity of relationships between objective resources and convenience behaviours found in some previous studies. Family composition in particular (in terms of number of adults and children in the household) appears to play a prominent role in resource perception. The persistence of these effects, even when employment status and income are controlled for, suggests that the demands of a family life *as such* may operate in an amplifying way on consumer's perceptions, making family life appear subjectively as an even larger drain on household resources than suggested by objective data alone. Another critical conclusion is that unemployment does not necessarily increase perceived time budget, but may actually have the opposite effect – a paradox with interesting

welfare implications that certainly warrants further research (cf. Williams & Hubbard, 2001).

The overall structure of our model was by and large stable across the two samples, which has to be seen in the light of the fact that the samples were from two countries with different food cultures and different average levels of convenience orientation. This corroborates results of two studies by Brunsø et al. (2002) and Scholderer, Brunsø, and Grunert (2002) who could show that the hierarchical relationship between personal values, food-related lifestyles, and patterns of actual consumption behaviours is invariant in structure between consumer populations in France and the UK, whilst absolute levels of the constructs may differ.

4.2. Limitations of study

While the results of the cross-validation in a different cultural context is encouraging, it is clear that we should be cautious regarding the external validity and generalizability beyond the two cultures involved in the studies. There are at least three issues to be aware of here: cross-cultural differences in the role of food and eating, cross-cultural differences in the organization of household resources, and possible cross-cultural differences in the validity of our double mediation hypothesis.

As for the first, studies on the cross-cultural validity of the food-related lifestyle instrument, from which a large part of the items used here was coopted, have shown that this instrument has good cross-cultural validity across a number of West European cultures (Scholderer, Brunsø, Bredahl, & Grunert, 2004), but that cross-cultural validity drops dramatically when the range of cultures studies is extended to, for example, East Asia (Askegaard & Brunsø, 1999). This by itself limits the generalizability of our results. As for the second, both cultural factors and level of economic development can be expected to have an effect on the organization of household resources. The pronounced trade-off between perceived time and perceived money, at least as far as its importance for convenience orientation is concerned, is probably linked to a situation where disposable income is relatively high, but where cheap household labour is not available as a way out of a situation where time is scare but money is relatively plentiful. As for the third, we can only speculate, but we should not rule out that the result that perceived resource constraints in their effect on behaviour are mediated by attitude is limited to Western culture with its appreciation of individualism.

4.3. Perspectives for future research

Aside from the more obvious implications for future research on convenience in food shopping and meal preparation, we think that the studies have broader implications for research on how economic constraints affect behaviour. We found that the relationship between objective household resources and perceived household resources is very complex, and that the effects on behaviour are further mediated by attitudinal variables. The analysis of how resource constraints affect human behaviour is usually the domain of economics. Our model is an example demonstrating the

added value of economic psychology, since we can show that we can fully understand the effect of resource constraints only when considering two classes of intervening psychological processes. At the same time, we believe that attitudinal research on consumer behaviour far too long has concentrated on behaviour under volitional control, where most constraints on behaviour by definition were excluded from the analysis. The integration of the perceived control construct in the Theory of Reasoned Action by Ajzen (1991) and Ajzen and Madden (1986), in line with similar attempts to focus on external constraints of behaviour by other authors (e.g., Bagozzi & Warshaw, 1990; Bandura, 1986, 1992a, 1992b), has focused attention more on the non-volitional aspects of how attitudes affect behaviour. In this context, a more detailed analysis of how objective and perceived constraints are related and how they affect attitude and eventually behaviour becomes a prime issue.

4.4. Practical implications

It is widely believed that the importance of convenience in food is still on the increase, at least in many countries, and that changing demographics are a major driver in this process. However, our studies suggest that a further trend towards increased convenience depends not only on the future development of demographics, but also on the structural relationships between objective and perceived resources, which are psycho-socially embedded. The research presented here shows clearly that these relationships are much more complex as well as considerably smaller in size than commonly expected. Hence, it can be concluded that it is utterly misleading to simply equate rising percentages of one-person households or working wives in a consumer population with increasing demand for convenience food. Unwarranted simplification of this sort should be avoided in the future: in applied contexts, it may lead to gross overestimation of market potentials and, as a consequence, to failure during product launch, as well as to a place in the hall of shame of fashions and fads in marketing.

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