A Temporal Involvement Model with a Cognitive Formulation. An Application to the “Appellation of Origin” in Agro-Food Products

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Abstract. This paper analyses the involvement concept, applying it to the ‘appellation of origin’. This construct is rendered operational through its cognitive formulation, derived from the conceptual framework of the variable, determining factors, causes and consequences. This study proposes a model which measures the temporal involvement and includes a structural descriptive network of its relationship with other connected concepts: perceived risk, knowledge and experience of the consumer. On the other hand, it explains the predictive capacity of the construct as well as these criteria and the level of continuous consequences derived from involvement in the buyer decision process.

Keywords: involvement, cognitive formulation, consumer behavior, appellation of origin

INTRODUCTION

This paper explains involvement as construct motivation (Mitchell, 1979; Bloch, 1981; Mittal, 1983; Cohen, 1983; Ratchford and Vaughn, 1989; Higie and Feick, 1989, among others). Specifically, we conceptualise involvement as the “state, motivation or arousal derived from the relevance of the stimulus perceived by the individual”.

In this case, the study of involvement is oriented to ‘appellation of origin’ as stimulus, representing a complementary differentiating factor of the brand name, influencing the consumer at a similar level. For this study wine was the product selected, given its outstanding position in this system of protection.

From this approach, the description of the construct is made from the cognitive aspect, in which it originates, given the association between the structure of knowledge of the stimulus (the characteristics or attributes perceived by it) and the mental structure of a higher order of knowledge of the ‘I’ (the structure of self concept, the structure of values, motives and/or needs).

In this line, and following the approach proposed by Ostrom and Brock (1968), equally present in the conceptualisation proposed by Day (1970), Tyebjee (1979), and in the studies of Peter and Olson (1987), Celsi and Olson (1988) and Laaksonen (1994), referring to the cognitive formulation of the state of involvement, it is described by the three following characteristics, the combination of which will lead to different strategic and tactical derivations:
- Range or extension of the association between knowledge of the stimulus and the individual’s self knowledge.
- Relevance or hierarchical position of the related knowledge of the individual.
- Intensity, as associative power.

This concept is integrated in a wider model of consumer behaviour analysis, which proposes the mediator character of temporal involvement in the consumer decision process. The description includes the continuous consequences derived from the individual’s enduring involvement and other influential variables, equally related to the construct, as perceived risk, knowledge and experience.

In this way, we also present the analysis of involvement consequences of a regular character and those referred to the consumer decision process as measure of the latent corresponding variables. The analysis will not only give information about the dimension of this variable but, more importantly, will define the structure of that state as well, something fundamental to decision-making.

On this basis, the sub-network specification of the model, which can be validated by means of a transversal analysis, is shown in Figure 1. For space reasons, the corresponding path diagram is given directly.

Fig. 1. Path diagram of the temporal involvement model

This model describes temporal involvement as a latent variable represented by the cognitive structure number of values-centrality-intensity (hypothesis H1), having listed 46 values potentially associated with knowledge, buying and/or consumption of appellation of origin.

At the same time, we propose the correlation between the construct with the variable perceived risk (hypothesis H2), as well as the correspondence of the state of involvement with knowledge (hypothesis H3), and experience related to stimulus, in this case, the appellation of origin (hypothesis H4).
Another latent variable of the model is consumer behaviour, differentiating between buying decision and consequences of a continuous pattern. It was conducted a study of the responses influenced by the state of involvement, considering 25 and 34 effects for the temporal and regular consequences respectively, which include behaviour and responses in their affective and cognitive processes.

In this context, the buyer decision process was analysed from the perspective of the mediator character of the temporal involvement (hypothesis H5), considering other variables as predictors: consequences of regular character which show the enduring involvement degree that the consumer manifests to the stimulus (hypothesis H6), perceived risk (hypothesis H7) and knowledge (hypothesis H8).

**MATERIALS AND METHODS**

Information related to measurement variables and the set of observed variables of the model was obtained directly or indirectly by means of specific items on the questionnaire designed to this end (Tab. 1).

<table>
<thead>
<tr>
<th>Tab. 1</th>
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<tr>
<td><strong>Observed variables in the model</strong></td>
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<td><strong>Variable</strong></td>
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</table>
| Values | Count of scores 4 and 5 | 46 | - A link with a specific geographical region  
- A culinary delight  
- Trying a typical product of a region where I find myself  
- Style and sophistication  
- Enjoying social relations with family and friends |
| Intensity | New variable: Score 4 = 1, 5 = 2 | 46 | - Geographical origin  
- Culinary delight  
- Tourism interests  
- Style and sophistication  
- Affective relations with family and friends |
| Centrality | New variable: Score 4 = 1, 5 = 2 | 46 | - Appellations of origin are important for me  
- When I have wine, I usually choose appellation of origin wine  
- I can explain what appellation of origin means  
- When a new appellation of origin is launched, I try it  
- When friends and relatives choose appellation of origin wine, my opinion is taken into account |
| Continuous consequences | Sum of scores | 34 | - When I decide buying an appellation of origin, if I receive contrary information I maintain my decision  
- I always buy appellation of origin wine  
- Appellations of origin are important for me  
- I take a lot of time and pay great deal of attention to the choice of appellation of origin wine  
- When deciding, I take into consideration the characteristics of the appellation of origin |
| Temporal consequences | Sum of scores | 25 | - The consequences of an inadequate choice are important  
- Selecting an appellation of origin is a difficult choice |
| Risk | Sum of scores | 2 |
| Knowledge | Rating from very high to very limited |
| Experience | Rating of frequency of consumption, from everyday to sporadically |
To estimate the model the variance-covariance matrix was chosen using the Maximum Likelihood (ML) method, and following to compare the results with those obtained from the application of other methods not sensitive to the distribution of the data, as is the estimation by Asymptotically Distribution Free (ADF). At the same time, the empirical sampling distribution of parameter estimates was evaluated by using the bootstrap method (Efron, 1982). This methodology was also used in a complementary manner to assess the adjustment given by different methods. In all cases the ML method obtained the lowest mean discrepancy.

This research took into account the qualitative and quantitative information obtained from meeting with two approach groups and from 400 surveys taken among appellation of origin wine consumers in a province of great tradition and wine culture in the north-west of Spain.

RESULTS AND DISCUSSION

The model proved adequate in its global assessment, with adjustment measuring levels above those considered acceptable (Tab. 2).

<table>
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<tr>
<th>ASSESSMENT</th>
<th>RESULTS</th>
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<tr>
<td>Overall Model Fit</td>
<td>Chi-square (Jöreskog, 1969)=8.461 p=0.748 RMSEA (Browne and Cudeck, 1993)=0.000 PCLOSE=0.989 CFI (Bentler, 1990)=1.000 MECVI=0.144</td>
</tr>
<tr>
<td>Measurement Model</td>
<td>Factor analysis: unidimensionality Significance of loadings: 0.961, 0.921 (t=38.406), 0.977 (t=51.471) Individual-item reliability: 0.923, 0.848, 0.955 Composite reliability: 0.9640 Cronbach’s alpha: 0.9576 Variance extracted: 0.8994</td>
</tr>
<tr>
<td>Structural Model</td>
<td>Significance of parameters Estimate t-value Hypothesis Evaluation</td>
</tr>
<tr>
<td>RISK ← TEMP.INV.</td>
<td>0.244 4.963 H2 Confirmed</td>
</tr>
<tr>
<td>KNOWL ← TEMP.INV.</td>
<td>-0.233 i -4.610 H3 Confirmed</td>
</tr>
<tr>
<td>EXPER. ← TEMP.INV.</td>
<td>-0.178 i -3.564 H4 Confirmed</td>
</tr>
<tr>
<td>TEMP.INV. →</td>
<td>0.095 2.594 H5 Confirmed</td>
</tr>
<tr>
<td>TEMP.CONS.</td>
<td>0.666 14.962 H6 Confirmed</td>
</tr>
<tr>
<td>CONT.CONS. →</td>
<td>0.070 2.117 H7 Confirmed</td>
</tr>
<tr>
<td>TEMP.CONS. →</td>
<td>-0.088 i -2.132 H8 Confirmed</td>
</tr>
<tr>
<td>RISK → TEMP.CONS.</td>
<td></td>
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<tr>
<td>KNOWL ← TEMP.CONS.</td>
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<td>TEMP.CONS. →</td>
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Note: i The negative sign comes from the descending order established by the variable assessment

In the analysis of the measuring proposal of the involvement construct the characteristics that define the cognitive structure constitute a single component in the confirmatory factorial analysis performed, the latent variable loads resulting different from zero. On the other hand, the reliability of each of these factors was higher than 0.50 (Sharma,
1996: 163), and the composite reliability above the 0.70 limit. Finally, the calculation of Cronbach’s alpha corroborates high internal consistency, with a value above 0.90, and the extracted variance, above 0.50, showed that the proposed indicators were adequate to measure the construct (hypothesis 1).

The structural model was validated as all parameters obtained high statistic significance. Therefore, the hypotheses postulated were positively contrasted (H2, H3, H4, H5, H6, H7 and H8).

In this approach the reliability coefficient of the structural equation was 0.60, and there were no high correlations among the latent variables that would indicate the elimination of any of them for being redundant. Likewise, there were no modification indexes that indicated substantial improvements in the model, with standardized residuals significantly equal to zero.

**CONCLUSIONS**

The objective of the research was, first, to prescribe the conceptual basis of the construct from a motivational approach, describing it by means of induced cognitive formulation. Based on this, the concept was integrated into a wider consumer behaviour model, analysing its mediation in the decision process of the individual and its relation with other related concepts which at the same time contribute to explain the buying process, also dealt with in this research.

Conceptualising and measuring the involvement variable was based on the following characteristics: number of associated values, value centrality and intensity of the stimulus-value relationship, empirically contrasted by structural equations, deriving the adequate measuring of the construct from the cognitive base stated as constitutive of it.

The approach proposed in the variable analysis supposes a great contribution in both strategic and tactical decision-making, and provides necessary and precise information in commercial dealings.

This analysis includes the study of the construct at the brands level, with ‘appellation of origin’ as the differentiating attribute in certain products, namely wine, fundamental in the analysis of the consumer relationship with this distinction.

In addition, we have presented the relationship of involvement with perceived risk, another subjective variable with which was also analysed. Risk perception has often been wrongly equated to involvement, concluding there is a positive correlation between them. This relation comes from construct conceptualizations, determining and verifying the approaches adopted.

At the same time, the correspondence between the state of involvement with consumer knowledge and experience corroborates and explains the perspective proposed. In this sense consumer involvement is positively correlated with the knowledge the consumer has and his frequency of consumption of the stimulus.

Finally, distinguishing between permanent and temporal involvement through out estimated period, we studied the predictive state of this last variable in the consumer buying decision process, adding an analysis of the consequences of such variables.

In this sense, a positive effect of the mediator character of temporal involvement of the individual on specific consequences of the buying process has been contrasted, being essential on the other hand the effect of the level of continuous consequences of the permanent involvement.

Moreover, a positive effect has been shown over the temporal responses on the perceived risk and consumer knowledge. The greater the risk perceived and the knowledge on
the part of the consumer, the more complex, extensive and intensive the decision process becomes. This model can be extended, incorporating other concepts that make up the decision process. At present, this line is being studied as well as the implication on specific consequences.

To conclude, it would be interesting to apply this approach in the analysis of permanent involvement state, doing a more in-depth study of its relation with consumer temporal involvement in specific situations.

REFERENCES