Identifying the training dimension for improving the knowledge management practices

■ **M. MALARKODI, K. UMA AND K. MAHENDRAN**

ABSTRACT

Knowledge is a key determinant for an enterprise competitiveness improvement in knowledge economy. Having this in mind, effectiveness and efficiency in managing this resource are especially important. Training is the process of enhancing the skills, capabilities and knowledge of individual for doing a particular job. Training process moulds the thinking of individual and leads to quality performance. It is continuous and never ending in nature. Training is crucial for organizational development and success. This study aims to develop the training programme through the selection of perfect training dimensions and relevant attributes. The attributes like technology based learning on payment for a month (weekend-Sunday only) was preferred by the agri-input retailers.

KEY WORDS : Knowledge management, Training, Training dimension, Conjoint analysis

Knowledge is a key determinant for an enterprise competitiveness improvement in new economy or knowledge economy. Having this in mind, effectiveness and efficiency in managing this resource are especially important. Because of that, knowledge management system is a special resource (Bojan Krstic, 2011). This paper is aimed to show the great importance of different training dimensions that need to improve the knowledge which is a vital strategic resource for modern business. The turbulent business environment, with the stringent competition in the world market resulted in the significant changes that companies should introduce in their current business operations. The changes are necessary for survival in the market. The companies should adapt to the changes in the

external environment and make changes in the internal environment through some means like introducing innovation, increasing competitiveness and attending training, improving processes. Various ways are there for adapting the changes but the training is the most important one.

Training is the process of enhancing the skills, capabilities and knowledge of individual for doing a particular job. Training process moulds the thinking of individual and leads to quality performance. It is continuous and never ending in nature. Training is crucial for organizational development and success. A structured training and development programme ensures that individual have a consistent experience and background knowledge. The consistency is particularly relevant for the company's basic policies and procedures. So, the training dimension considered for offering the training programme for the agri-input retailers for improving the knowledge so as to improve the business performance should be more consistent. The objective of this study is to develop training programme through the selection of perfect training dimensions and relevant attributes.

According to Jens Hainmueller (2012) the conjoint

═══ **MEMBERS OF THE RESEARCH FORUM** ═══

Correspondence to:
M. MALARKODI, Department of Trade and Intellectual Property, Tamil Nadu Agricultural University, COIMBATORE (T.N.) INDIA

Authors' affiliations:
K. UMA AND K. MAHENDRAN, Department of Agricultural and Rural Management, Tamil Nadu Agricultural University, COIMBATORE (T.N.) INDIA

analysis enables researchers to decompose treatment effects into their respective components, making it good fit for a wide variety of problems in political science. From studies of voter decision-making or political behaviour to studies of the strategic choices made by elites, conjoint analysis has the potential to extend and deepen the insights gleaned from traditional survey experiments.

Raghavarao *et al.* (2011) concluded that in conjoint analysis, respondents rank or rate two or more hypothetical profiles that combine multiple attributes, enabling researchers to estimate the relative influence of each attribute value on the resulting choice or rating. There are many variants based on the way in which profiles are generated and on the specific task requested of the respondent.

Green (2001) stated that conjoint analysis is a methodology widely used by marketing researchers to measure consumer preferences, forecast demand, and develop products. Hauser (2007) opinioned that in conjoint analysis is widely seen as resembling actual decision-making tasks the most.

METHODOLOGY

Sample and data collection :

A questionnaire survey was developed to obtain the responses about their opinions on various attributes of the training dimensions. The sample frame for this study was Coimbatore and Erode districts of Tamil Nadu. The sample element was an agri-input retailer. The data were collected from 240 agri-input retailers which was a sample size of the study. Then completed questionnaires were used for the quantitative analysis.

Methodology :

The study was to conduct the conjoint analysis with the intension that to examine the preferences of the respondents towards training dimension. Conjoint analysis is a multivariate technique used to understand the respondents' preferences towards products or services. As the name suggests, it is used to understand the *joint effect* of two or more independent variables on the ordering of a dependent variable (Green and Rao, 1971).

. . . . *et al.,* 1992) : (1) identifying relevant attributes and possible values of attribute, and (2) designing the conjoint experiment. The structure of the rest of this section will follow these two steps.

Identifying relevant attributes – a personal interview :

The identification of the relevant attributes and attribute levels is an important stage in the conjoint study (Hair *et al.,* 1992). Conjoint analysis has been widely used in examining preference for a wide range of attributes. In this research, the conjoint analysis did not include a large number of attributes because the respondents may find it difficult to evaluate many attributes at a time and also increase the number of possible hypothetical profiles, which may confuse the respondents.

Taking into considerations the choices of the previous studies and the scope of the thesis work, only three important attributes (Training method, Duration and Training payment) were selected for the experiment. Preferences for the training typed include technology based learning, lectures, discussion forum, simulators, outdoor visits, coaching, role play, management games, film and videos, and case studies preferences for the training duration included days, weeks, months, and years. Preferences for fees mode included attributes such as payment and free mode.

Respondents were asked to directly rate the importance of the attributes to their training decision. Since in direct measurement, there is chance that respondents tend to give high importance scores to most of the attributes. To avoid this, an importance scale of three levels, as introduced in Floor *et al.* (1997) was adopted in order to capture the "trade-off" decisions of the respondents. The levels are:

- Not important (relative preference).
- Important (trade-off preference).
- Highly important (absolute preference).

Corresponding indexes were then calculated to measure the average strength of preference for the examined attributes. Index 100 meant that all respondents evaluate the attribute "highly important", 50 meant that they assessed the attribute "important", and 0 meant they estimated the attribute "not important". These attributes are supposed to be among the most important factors considered by respondents when attending training. Different levels of the attributes are determined based on common practice implemented in the organization. Many avenues exist to train employees. The key is to match the training method to the situation.

Each training type was assessed through the personal interview from the respondents, then identified the most popular and most effective methods like Technology based learning, Simulators, Discussion forums, Lectures to design a specific training program. Duration of the training was assessed with condition that weekend (Sundays only) was most suited day for attending training and it was determined as months, weeks, days. Training fees included two modes as payment and free. These attributes formed 12 hypothetical profiles. The attribute levels are presented in Table A.

Table A : Training dimensions and their attributes		
Sr.No.	Attributes	Attribute levels
1.	Training method	Technology based training
		Simulators
		Discussion forum
		Lectures
2.	Training Duration	Months
		Weeks
		Days
3.	Training mode (fees)	Payment
		Free

Pearson correlation co-efficient :

It is a measure the strength and direction of the linear relationship between two variables, describing the direction and degree to which one variable is linearly related to another. The Pearson correlation co-efficient can take values from -1 to +1 (Bolboaca and Jantschi, 2006).

Kendall-tau :

Kendall-tau is a non-parametric correlation coefficient that can be used to assess and test correlations between non-interval scaled ordinal variables. For all arrangements the value lies between -1 and 1, and increasing values imply increasing agreement between the rankings. If the rankings are independent, the coefficient has value 0 (Bolboacal and Jantschi, 2006).

Experiment design :

Since the number of attributes and the number of attribute levels are small, full factorial design is chosen to achieve the best estimation of main effects. The profiles are directly presented to respondents; and the respondents are asked to express their strength of preference of each profile on an eleven-point scale (0-10) according to their preference, where 0 represents "I definitely wouldn't attend" and 10 represents "I definitely would attend". These profiles as part of the whole questionnaire can be found in the appendix. The basic model of conjoint analysis assumes a linear relationship between utility and each attribute level as follows (Molin, 1999) :

$$U(X) = \sum_{i>1}^{m} \sum_{j=1}^{ki} r_{ij}t_{ij}$$

where,

$U(X)$ = overall utility of a profile

α_{ij} = the part-worth contribution or utility associated with the j th level (j, j = 1, 2, . . . ki) of attribute

x_{jj} = 1 if the j th level of the i th attribute is present; = 0 otherwise

k_i = number of levels of attribute i

m = number of attributes

The importance of an attribute, Ii, is defined in terms of the range of the part-worths, α_{ij}, across the levels of that attribute.

The attribute's importance is calculated to determine its importance relative to other attributes,

$$W_i = \frac{I_i}{\sum_{i=1}^{m} I_i} \quad \text{so that} \quad \sum_{i=1}^{m} W_i = 1$$

OLS regression technique will be applied to estimate the preference functions of each respondents. Dependent variable is the profile rating, and independent variables are formed by the coded attribute levels. The estimated regression co-efficients are then interpreted as the part-worth utilities that make up overall ratings of the profiles. The attribute's importance is understood as the extent to which each attribute contributes to the determination of the utility, *i.e.* to the overall preference. At last, total utility of every profile is computed and ranked from largest to smallest, assuming that the respondents are utility maximizers, who will select the profile that yields highest utility.

ANALYSIS AND DISCUSSION

Preferences given to the hypothetical profiles were analyzed with the conjoint procedures in SPSS software version 16. Outcome of the analysis was including correlation co-efficients, estimation of part-worth scores, and relative importance of attributes.

Pearson correlation co-efficient is indicator used to measure the strength and direction of the linear relationship between two variables, describing the direction and degree to which one variable is linearly related to another. Here the person correlation value (R=0.857, p=0.00) which means there was a strong relationship among the dimensions was considered (Bolboacal and Jantschi, 2006) for doing the conjoint analysis (Table 1).

Table 1 : Correlations between observed and estimated preferences			
Sl. No.	Correlation technique	Value	Sig.
1.	Pearson's R	0.857	0.000
2.	Kendall's tau	0.717	0.000

Kendall-tau value was 0.71 which is used as a non-parametric correlation coefficient that can be used to assess and test correlations between non-interval scaled ordinal variables and since the value lies between -1 and 1, and in the increasing side values implying that increased agreement (Bolboacal and Jantschi (2006) between the rankings. It can be concluded that the goodness-of-fit of the model was satisfactory.

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Part-worth utility estimates of conjoint analysis for training dimension given by the agri-input retailers :

The path-worth scores (utility estimate), which are the co-efficients of the linear regression; provide the measure of the preference for every attribute level. These part-worth scores allow comparison among utility levels of the same attribute with larger values indicating greater preference. The constant utility estimate value 5.562 can be regarded as base utility, and the attribute levels contrast with it in positive and negative direction (Table 2). The sign (positive or negative) shows the direction for the linear relationship between value of the attribute level and preference for it.

Table 2 : Part-worth utility estimates for training dimensions			
Training dimensions	Particulars	Utility estimate	Std. error
Training type	Technology based learning	1.956	0.627
	Simulators	-0.702	0.627
	Discussion forum	-2.606	0.627
	Lectures	1.351	0.627
Fees mode	Payment	0.349	0.362
	Free	-0.349	0.362
Training duration	Days	0.616	0.437
	Weeks	1.232	0.873
	Months (week end alone)	1.848	1.310
(Constant)		5.562	0.846

Accordingly, it could be inferred from Table 3 that the agri-input retailers gave preference on training type as for technology based learning (1.956) followed by lectures (1.351) than discussion forum (-.2.606) and simulators (-0.702).

In case of fees mode, attribute was included to provide an assessment of participants' perceptions of willingness for attending the training programmes. The attribute fees modes of the training dimensions are through payment and free. Of these various attributes levels, payment (0.349) mode for attending the trainings were preferred by agri-input retailers than fees mode (-.0349). Agri-input retailers might prefer payment mode because of their need to improve their knowledge then and there for doing business satisfactorily.

With respect to training duration, agri-input retailers gave preference to months (weekend- Sundays only) with part worth of 1.848, weeks with part worth of 1.232 and days with part worth of 0.616. Here all levels of the duration attributes were given positive preference which indicates that agri-input retailers are ready to attend the trainings for a day, for a weeks, for a month's (weekend – Sundays alone) but the most preferred on was months(weekend – Sundays alone).

In overall, it could be concluded that training type of technology based learning, fees mode of payment and training duration of months (weekend - Sundays only) were preferred by the agri-input retailers.

Average importance values given by agri-input retailers for training dimensions :

The importance values are computed as the percentage ratio of utility range for each attribute and the sum of the utility ranges for all attributes. Attributes with larger utility ranges have more influence to overall preference than attributes with small utility ranges. These values, hence, allow the comparison of relative importance across attributes. The average importance score value provided the information on how each of the dimensions influenced the overall preference for training attending behavior of the agri-input retailers.

From Table 3, training type (70.357) played major role for making decision to attend the training programme by the agri-input retailers followed by training duration (18.91). Among the three dimensions, fees mode (10.74) got least influence on preference of agri-input retailers. Training type and training duration importance value was found to be almost 90 % of the total importance score.

Table 3 : Average importance values		
Sr. No.	Training dimensions	Average importance score (in per cent)
1.	Training type	70.347
2.	Fees mode	10.744
3.	Training duration	18.909

Conclustion :

The training provides a prime opportunity to expand the knowledge base among the agri-input retailers. The essence of knowledge management lies in executing certain processes and activities of an enterprise with the aim of creating capabilities that will improve effectiveness of creating and efficiency of exploiting knowledge, increasing competitiveness and value on the market. The consistent training programme would help the agri-input retailers to improve their knowledge management practices. From this study, it could be concluded that the attributes like technology based learning on payment for a months (weekend-Sunday only) was preferred by the Agri-input retailers.

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