

Impact Of Product Label On Domains Of Consumer Education: A Study On Consumers Of Uttarakhand -India

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Abstract

Product label is a significant source of information for the consumers and is a valuable tool for the consumers to secure their interest. Consumer education assumes importance as the role of market as an educator is no longer relevant. This paper attempts to examine the relationship between product label use and the domains of consumer education which have been identified as consumer awareness, consumer decision, consumer education and consumer consciousness. Primary data was collected via Questionnaire from Uttarakhand state, India. Reliability and validity has been checked. Exploratory Factor Analysis has been used to explore the dimensions of consumer education and Confirmatory Factor Analysis has been used to confirm it. Structural Equation Modelling has been used to test the relationship between product label and the domains of consumer education. A sub structural first order model has also been used to confirm the findings. There was a positive and significant relationship between product label and the domains of consumer education. Government should regulate product labels so that it meets the consumer interest of increasing consumer awareness and consumer education, consumers are well equipped with information so that they can make informed purchase decisions and at the same time not compromise on their world view.

Keywords Product Labels, Consumer Awareness, Consumer Decision, Consumer Education, Consumer Consciousness.

1.1 Introduction

Product Label is a valuable tool and has emerged as a significant source of information which consumers use to secure their interests. The information on Product Labels is regularly changed and renewed to inform consumers. Consumers need the requisite information so that they utilize the knowledge to maintain nutritional safe practices. A significant third-party source of information on health and diet for consumers is food labels (Caswell & Padberg, 1992). Nutrition information on food labels is a valuable tool

which helps consumer choose healthier alternatives (Mahgoub, Lesoli, & Gobotswang, 2007). (Osei, Lawer, & Aidoo, 2012) The importance of informing customers on the use of food labelling has been emphasised, as the information offered on food packaging is renewed/changed on a regular basis. (Emmanuel C, Aham V, & Cosmas A, 2016) It was discovered that customers did not take the time to read food labels before ordering, resulting in them not getting any of the information they needed to secure their interests.

1.2 Literature Review

“Consumer Education” as a term has been used for over a century as it has been mentioned in more than one paper from a conference on home economics in 1908 (Van Horn, 1941). (Green, 1988) Consumer education has been re conceptualized over the years by consumer educators. (Martens, 2005) There has been a fall out of ‘market as educator’. Formal consumer education is required in a consumer society to counter the uncensored lessons of the marketplace. (Kaptan, 2003) Consumer education is required for India as it creates critical awareness, imbibes social responsibility in consumers. It also results in active consumer involvement, brings about consumer solidarity and the realization of ecological responsibility. (Babutsidze, 2009) One of the most important aspects of cultivating a more aware consumer mindset, developing consumer culture, and moving toward more sustainable consumption habits is consumer education.

(Carr, Gotlieb, Lee, & Shah, 2012) observed the elucidation of conscious consumption as “any choice about products or services made as a way to express values of sustainability, social justice, corporate responsibility, or worker’s rights and that takes into account the larger context of production, distribution, or impact of goods and services.” Conscious consumers’ decision centres on selecting ethical alternatives and thus consuming with sensitivity (Szmigin & Carrigan, Exploring the dimensions of ethical consumption, 2005). Consumers who are conscious look for products which are ethically certified and also engage in boycotts. They often are ready to increase expenditure on commodities which complement their world view (Micheletti, 2010; Prasad, Kimeldorf, Meyer, & Robinson, 2004), no less than partly due to their subjection to news and programming related to public affairs (Shah, et al., 2007).

(Dickinson & Shaver, 1982) Consumer researchers, advocates and educators have put forward that to increase awareness of consumers; consumer education programmes should be commenced. It was revealed that “consumer awareness score of those respondents who had taken a consumer education class was significantly higher than the mean score of those respondents who had not taken a class.” (Agbonifoh & Edoreh, 1986) concluded that consumer awareness in a developing country is low because formal education levels are low and there is a the lack of consumer organizations. It was revealed that with different levels of education there was a difference in the levels of awareness of people. With higher level of education there was a higher level of awareness. (Rousseau & Venter, 1995) observed that education significantly influences consumer awareness.

In consumer decision making the part played by information has been studied from various points of views. But very less empirical and theoretical research has been focussed on the role of information on consumer’s efficient decision making (Anderson & Engledow, 1977). (Langrehr, 1979)suggested that students should be registered in a curriculum focussed on consumer education for improving their economic competencies as a consumer. It was revealed that education, age and household size were significant in explaining the consumer’s decision to buy (Lockie, Lyons, Lawrence, & Grice, 2004). (Sproles, Geistfeld, & Badenhop, 1978) conducted an exploratory research. It was revealed that the effect of consumer information on augmenting consumer’s efficiency of choice was significant. The results especially applied when more information about the characteristics of competitive product was provided to the individual making the decision.

2. Research Gap

In the review of literature it was observed that product label has been studied widely however there was a lack of studies which could study the impact of product label on the domains of consumer education in the state of Uttarakhand. No studies were found which studied the following constructs together. There was a lack of studies which could examine the relationship of product labels with the various domains of consumer education. No studies were found which studied Product Labels in the Uttarakhand area.

3. Objective

The study was conducted to assess the impact of product labels on the domains of consumer education in the targeted population which belongs to the hilly state of Uttarakhand, India. The domains of consumer education comprise of Consumer Awareness, Consumer Decision, the intensity of Consumer Education and Consumer Consciousness. The main focus of the study is to assess whether the use of product labels among the consumers of Uttarakhand impacted their awareness as a consumer, their decision making in terms of purchase of the product, their consumption consciousness and their level of consumer education. The main focus of the study is to test the relationship between product label and the domains of consumer education by using structural equation modelling.

4. Method

Research design

Both descriptive and exploratory research design has been used for the study. For the preliminary problem exploratory approach was utilized. For the classification of sample characteristics and to test the propositions descriptive research design was used.

Sample design

The sampling technique used for the study is convenience which is a non probability sampling technique. The sample size used for the study is 250. As according to (Sekaran, 2003) "Sample sizes larger than 30 and less than 500 are appropriate for most research". The area of research is Uttarakhand state, India.

Research instrument

A 5-point Likert scale has been used for the questionnaire (1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree). Pre testing of the questionnaire was done. Reliability of the research instrument has been measured by Cronbach's Alpha. Exploratory Factor Analysis (EFA) has been used to find the underlying dimensions and Confirmatory Factor Analysis (CFA) has been used to validate the dimensions revealed in EFA. Structural Equation modelling has also been used. Convergent validity and Discriminant validity has also been analysed. SPSS (Statistical package for social sciences) and AMOS (Analysis of a Moment structures) has been used for analysis.

5. Results

5.1 Pre-test

The initially questionnaire has 25 items. It was checked for Content Validity and Face Validity. As a result few of the items were removed. The resulting questionnaire contained 16 items.

5.2 Results from EFA

The 16 item questionnaire was distributed to 267 respondents. 250 usable Questionnaires were included in the study. Exploratory Factor Analysis was conducted. The Kaiser-Meyer-Olkin (KMO) value was .753 and the Bartlett's Test of sphericity had a significance level of 0.00. Five components with Eigen Value above one constituted the total variance of 62.91%.

Table 1 . Rotated Component Matrix; CA-consumer awareness, CD-consumer decision, CED-consumer education, CC-consumer consciousness, PL- product label

Items	Components				
	CA	CD	CED	CC	PL
CA15	.785				
CA13	.751				
CA14	.728				
CA16	.661				
CD12		.798			
CD10		.778			
CD11		.765			
CED8			.767		
CED7			.767		
CED9			.766		
CC2				.774	
CC1				.748	
CC3				.678	
PL4					.765
PL5					.713
PL6					.627

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.
Source: Author's calculations

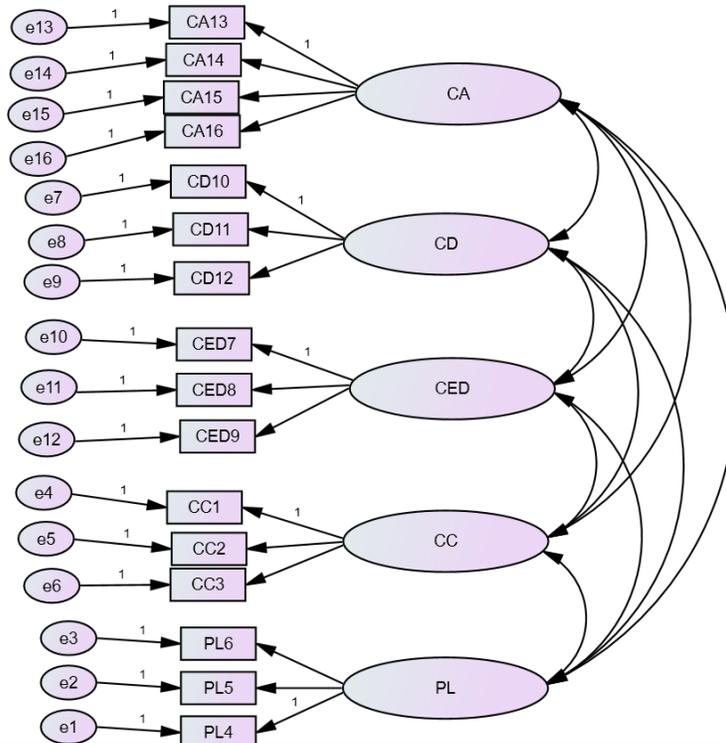
5.3 Results from CFA

Confirmatory Factor Analysis was run on the EFA results. The results and the resulting measurement model are as follows.

Table 2. Model fit indices. : χ^2 -chi square, df- degree of freedom, p- probability value, RMSEA-Root mean squared error of approximation, CFI- Comparative fit index, NFI- Normed Fit index, TLI- Tucker Lewis index, GFI-Goodness of fit index and AGFI-Adjusted goodness of fit index of the proposed model.

Model	χ^2	df	χ^2/df	p	RMSEA	CFI	NFI	TLI	GFI	AGFI
Measurement Model	217.231	94	2.311	.000	.073	.876	.805	.841	.912	.872

Source: Author's calculations



Source: Prepared by Author

Figure 1 . Measurement Model; CA-consumer awareness, CD-consumer decision, CED-consumer education, CC-consumer consciousness, PL- product label

The chi-square value cannot be relied upon as it is affected by the sample size. With the increase in sample size the probability value tends to become significant therefore other indices have been discussed as follows (Asoka, 2015). $\chi^2/df < 3$ is an acceptable fit (Kline, 1998) whereas according to (Marsh & Hocevar, 1985) $\chi^2/df < 5$ is a reasonable fit. The RMSEA values < 0.01 is excellent, < 0.05 is good, < 0.08 is mediocre and > 0.1 is a poor fit (MacCallum, Browne, & Sugawara, 1996). The RMSEA value of the model is a mediocre fit. (Mulaik, James, Van Alstine, Bennett, Lind, & Stilwell, 1989) The AGFI and GFI values depend on the sample. The GFI value for the model is .912, it is closer to the acceptable values of $> .90$ which is a good fit

indication (Kline T. , 2005). The AGFI, CFI and NFI value of the model are closer to the threshold of .9 . Also according to (Sica & Ghisi, 2007) AGFI more than equal to 0.80 and GFI value more than equal to 0.85 is a good fit. For TLI, a value more than equal to 0.85 is a good fit and a mediocre fit is a value > 0.8 (Shadfar & Malekmohammadi, 2013) (Carlback & Wong, 2018).

Convergent validity

Composite reliability has also been calculated for each construct, all values are above the .6 cutoff (Bagozzi & Yi, 1988). The threshold for average variance extracted is to be higher than .5 but according to (Fornell & Larcker, 1981) the convergent validity is still acceptable if the composite reliability is higher than .6 even if the average variance extracted is less than 0.5.

Table 3. Convergent Validity

Constructs	Items	Item Loadings	Average Variance Extracted	Composite Reliability
Consumer Awareness	CA13	.58	.435	75.25%
	CA14	.61		
	CA15	.78		
	CA16	.64		
Consumer Decision	CD10	.67	.529	77.08%
	CD11	.77		
	CD12	.73		
Consumer Education	CED7	.61	.439	70.03%
	CED8	.65		
	CED9	.72		
Consumer Consciousness	CC1	.60	.393	65.91%
	CC2	.67		
	CC3	.61		
Product Label	PL6	.65	.352	61.83%
	PL5	.53		
	PL4	.59		

Source: Author's calculations

Discriminant Validity

Discriminant Validity has also been established as the AVE (average variance extracted) is higher

than the corresponding SIC (Squared inter-construct correlation).

Table 4. Discriminant Validity; CA-consumer awareness, CD-consumer decision, CED-consumer education, CC-consumer consciousness, PL- product label

	CC	PL	CED	CD	CA
CC	.3923 (AVE)				
PL	.175 (SIC)	.352 (AVE)			
CED	.142 (SIC)	.003 (SIC)	.4386 (AVE)		
CD	.226 (SIC)	.252 (SIC)	.198 (SIC)	.529 (AVE)	
CA	.173 (SIC)	.293 (SIC)	.0009 (SIC)	.067 (SIC)	.435 (AVE)

Source: Author's calculations

Reliability

The scale was found to be reliable with the values of Cronbach's Alpha to be above .6 (Pallant, 2001) (Nunnally & Bernstein, 1994).

Table 5. Cronbach's Alpha

Sr. No.	Constructs	Cronbach's Alpha
1.	Consumer Consciousness	.654
2.	Product Label Use	.606
3.	Consumer Education	.699
4.	Consumer Decision	.766
5.	Consumer Awareness	.746

Source: Author's calculations

5.4 Results from Structural Equation Modelling

On the basis of theoretical framework, the structural model has been specified. This model tries to expose the impact of product label of the

various domains of consumer education. Consumer Awareness, Consumer Consciousness, Consumer Education and Consumer Decision have been clubbed under a second order factor named "Domains of Consumer Education".

Table 6. Structural Coefficients; CA-consumer awareness, CD-consumer decision, CED-consumer education, CC-consumer consciousness, PL- product label

Constructs	Estimates	SE	CR	P
Domains_of_Consumer_Education ← PL	.786	.185	4.261	***
CA ← Domains_of_Consumer_Education	.510	.127	4.004	***
CD ← Domains_of_Consumer_Education	1.063	.232	4.575	***
CED ← Domains_of_Consumer_Education	.633	.188	3.370	***

Source: Author's calculations

On the reviewing the structural model coefficients, it can be said that product label has an impact on the domains of consumer education with the estimate being .786 and p value less than .05 which is significant. There is a significant and positive relationship between product label and domains of consumer education.

The proposed structural model fits the data satisfactorily; the model fit indices are well within the acceptable range similar to the measurement model.

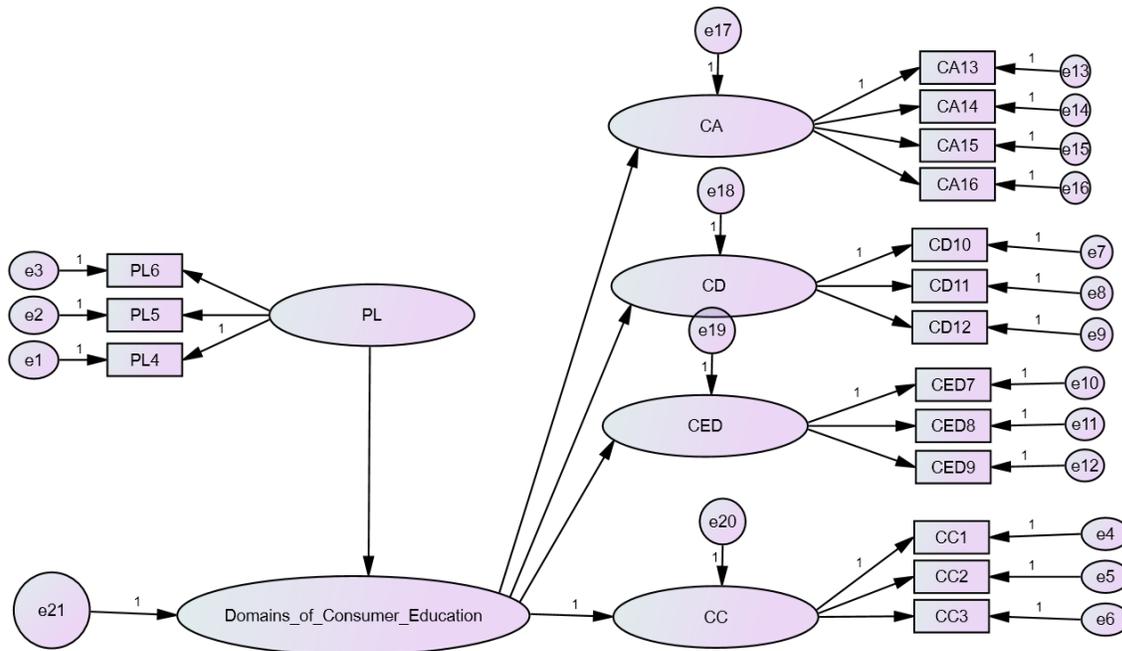
Table 7. Model fit indices of the Structural Model

Model	χ^2	df	χ^2/df	p	RMSEA	CFI	NFI	TLI	GFI	AGFI
Structural Model	250.924	99	2.535	.000	.079	.847	.774	.814	.893	.852

Source: Author's calculations

Figure 2. Structural Model; CA-consumer awareness, CD-consumer decision, CED-consumer education, CC-consumer consciousness, PL- product label

Source: Prepared by Author



Sub Structural Model

A sub structural first order model has also been formed to assess the impact of product label on Consumer Awareness, Consumer Decision, Consumer Education and Consumer Consciousness as a first order model.

Figure 3. Sub Structural Model; CA-consumer awareness, CD-consumer decision, CED-consumer education, CC-consumer consciousness, PL- product label

Source: Prepared by Author

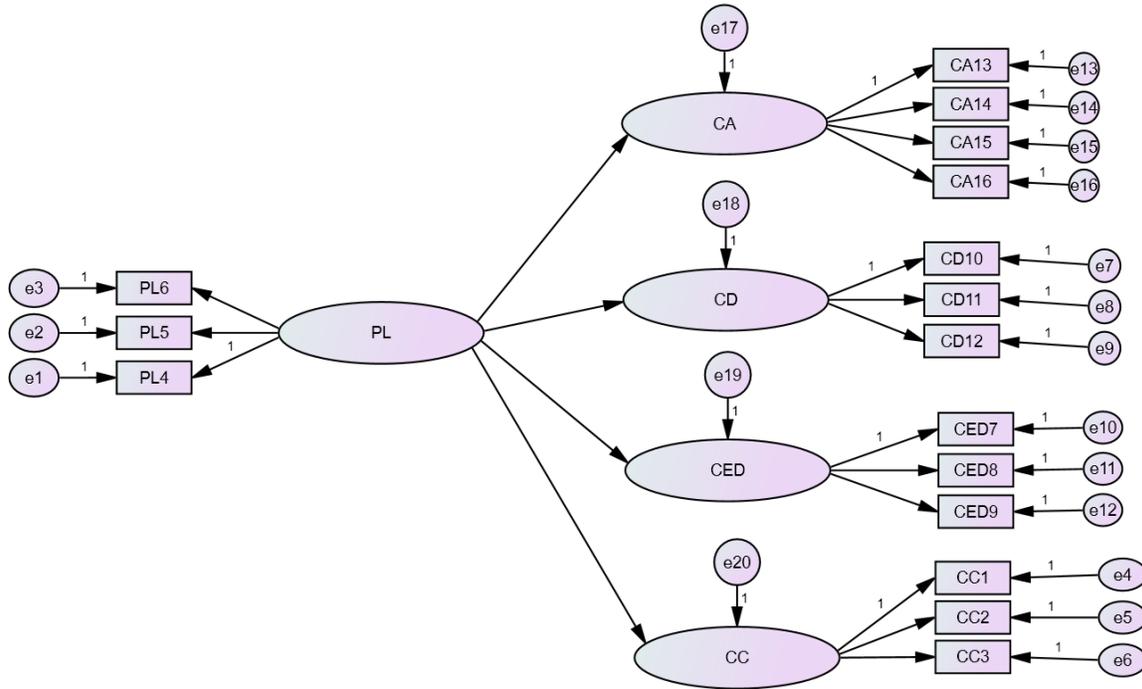


Table 8. Structural Coefficients for the sub structural model; CA-consumer awareness, CD-consumer decision, CED-consumer education, CC-consumer consciousness, PL- product label

Constructs	Estimates	SE	CR	P
CA ← PL	.671	.144	4.662	***
CD ← PL	1.109	.218	5.082	***
CED ← PL	.498	.193	2.582	.010
CC ← PL	.984	.219	4.495	***

Source: Author’s calculations

Based on the structural model coefficient results, it is clear that Product Label has an impact on Consumer Awareness, Consumer Decision, Consumer Education and Consumer Consciousness as the p value for all four results are significant (p value<0.05). There is a significant and positive relationship between product label and consumer awareness. There is a significant and positive relationship between product label and consumer decision. There is a significant and positive relationship between product label and consumer education. There is a significant and positive relationship between product label and consumer consciousness.

6. Discussion and Conclusion

In previous studies product label and more importantly food labels have assumed importance in being a source of information for the consumers. It has also been emphasized that consumer education has become necessary as uncertainties of the market place has risen. Consumer who are conscious are ready to pay a bigger amount provided the product compliments their world view, they are ready to engage in boycotts and look for products which agree with their value system. It was observed that consumer’s awareness was low in areas where there were no formal consumer education

programs and consumer's decision was affected by the information.

1. Product label can assist consumers buy products to maintain nutritional safe practices. Consumers can gain the knowledge of the ethical features and the quality of the product.

2. Consumers can become aware of the product traceability by reading product labels. The knowledge of goods can influence consumer behaviour

3. Product labels can be the perfect tool to educate consumers and aid in consumer decision as the most important element that influenced the outcome is information

Consumer education is fragmented and has not entered the hierarchy of education in many countries. There is a need to reassess consumer instructional strategies and product label can play a pivotal role in it if the policies are tailored accordingly.

7. Suggestions

Government should look into the prospects of regulating and utilising the product labels to forward the idea of consumer welfare. Food label research should take into account consumers' need preferences and issues with food labels. More ways should be explored to educate consumers from all walks of life on how to purposefully use food labels.

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