

# Developing and Validating Holistic Thinking Scale on the consumers of Haryana

DeepikaSihmar\* and Narendra Singh□□

\*Author:ResearchScholar, Department of Commerce,  
Kurukshetra University,  
Kurukshetra

\*\*Corresponding author: Professor, Department of Commerce, Kurukshetra University, Kurukshetra.

## ABSTRACT

The capitalistic system of development is diverting the society into competition to acquire more wealth and materialistic life to satisfy their greed and ego, which leads to a rat race among the people and consumers to go and acquire more material things without giving a thought of overall impact on their well-being in the long run. All of this, give arises to different social, economic and ecological evils by increasing gap between rich and poor. To minimize this effect, there is a need to sensitize the society and consumer by evolving suitable programs after understanding their thinking process. Therefore, the present study is an attempt to understand the thinking level of the consumers towards a holistic view while making decisions. It also helps in exploring the factors of holistic thinking of consumers and to compare them on the basis of zone. A sample of 600 consumers from Haryana was collected. Holistic thinking scale is developed with the help of 19 statements using exploratory factor analysis, and was confirmed through confirmatory factor analysis. The four factors of holistic thinking (interrelation, moderation, consistency, totality) were identified. Factors are compared on the basis of zones with the help of one-way ANOVA. Results showed that there is no significant difference between different zones of Haryana in case of interrelation and totality factor, but in case of moderation and consistency there is a significant difference.

**Keywords:** -holistic-analytic, moderation, totality, consistency

## Introduction

Holistic Thinking is a way that describes the whole of creation and the interconnectedness of its parts. This interconnectedness will represent the whole and gives it its complete meaning. It can be defined as an acceptance of the idea that in this universe every element link with each other (**Ji et al., 2000; Nakamura, 1985; Needham, 1962**). A holistic thinker considers both target and related information while analytic thinker considers only the target and ignores related information. In simple words, holistic thinking is concerned about describing the whole system studying the interconnectedness among different parts which construct the larger system.

According to **Smuts** viewpoint Holism is a thought that speaks for the integrated whole in the natural world, and these whole are the actual ingredients of the universe. The concept of Holistic means that all the factors of a whole system cannot be described or interpreted by its individual parts alone. Alternatively, the system complete as a whole will represent how the parts will perform. Different authors examined holistic thinking in different context. **Zhang (2002)** investigated the interrelationship between thinking style and creativity and found that creativity generating and complex thinking styles were significantly positively correlated with the holistic mode of thinking but significantly negatively correlated with the analytic mode of thinking. **Sagone and Caroli (2012)** study on high schools showed that the science students are more holistic thinkers than arts and humanities students as they preferred to work with concrete problems and details. **Bui and Flicker (2013)** examined the relationship between styles of thinking whether it is analytic or holistic, attributional style whether it is situational or dispositional and willingness to forgive. Results concluded that holistic thinking was positively correlated with a higher tendency to forgive others people who think more holistically would be more forgiving because they view others behaviors as more strongly influenced by situational factors. On the other hand, people who think more analytically would be less likely to forgive others because they were more likely to understand others transgressions as a result of basic tendency. **Choi et al. (2007)** study revealed that Koreans and Korean students of Oriental medicine scored higher on the Analytic Holism Scale than the Americans and Koreans students of non-oriental medicine majors respectively. **Zhang et al. (2014)** compared the holistic thinking of older people with younger in two distinct cultures, namely Chinese and American to analyze

the cultural differences. Chinese are having more holistic thinking than the Americans and there is a negative relationship between age and holistic thinking in both cultures.

Holistic thinking is measured on different social and cognitive domains such as attention (Chua *et al.* 2005; Hedden *et al.*, 2000; Ji *et al.* 2000; Masuda and Nisbett 2001), attribution (Choi and Nisbett, 1998; Morris and Peng 1994), categorization (Choi *et al.* 1997; Ji and Nisbett, 2001; Norenzayan *et al.* 2002), memory (Masuda and Nisbett, 2001), logical reasoning (Norenzayan *et al.*, 2002), and tolerance of contradiction (Peng and Nisbett, 1999). On the basis of the theoretical concepts and the empirical evidences, Nisbett and his colleagues presented a theoretical model of four constructs: - perception of change, contradiction, attention, and locus of control in 2001. On the basis of all these constructs, a scale is constructed and validated on the consumers of Haryana.

### Research Objective

The study was undertaken with the following objective: -

- 1) To identify the factors affecting holistic thinking of consumers.
- 2) To validate the factors affecting holistic thinking scale on consumers.
- 3) To compare the holistic thinking of consumers in different zones of Haryana.

### Hypothesis Formulation

Hypotheses are formulated to compare the consumers of different zones in Haryana in context of factors identified for holistic thinking. These hypotheses are: -

H<sub>1a</sub>: - There is no significant difference between consumers of different zones in Haryana in context of interrelation factor of holistic thinking.

H<sub>1b</sub>: - There is no significant difference between consumers of different zones in Haryana in context of moderation factor of holistic thinking.

H<sub>1c</sub>: - There is no significant difference between consumers of different zones of Haryana in context of consistency factor of holistic thinking.

H<sub>1d</sub>: - There is no significant difference between consumers of different zones in Haryana in context of totality factor of holistic thinking.

### Research Methodology

The questionnaire was designed which comprised of statements representing holistic thinking of consumers. A 5-point Likert scale was used where 1 means Strongly Disagree and 5 mean Strongly Agree. Out of 852 questionnaires distributed, only 600 valid responses were obtained

and used for further data analysis which corresponded to 70.42% response rate. Reliability of data is checked by using Cronbach's alpha coefficient. The acceptable value of alpha is 0.6. In the present study value of alpha is .846, which shows good reliability of the data.

Table 1.1  
Socio-economic profile of the respondents

Profile	Categories	No. of Respondents	Percentage
Age (in years)	18-28	369	61.5
	29-39	149	24.8
	40 and above	82	13.66
Gender	Male	314	52.3
	Female	286	47.7
Zone	Ambala	100	16.7
	Faridabad	100	16.7
	Gurugram	100	16.7
	Hisar	100	16.7
	Rohtak	100	16.7
	Karnal	100	16.7
Marital Status	Married	285	47.5
	Unmarried	315	52.5
Occupation	Student	156	26.0
	Home Maker	74	12.3
	Servicemen	164	27.3
	Self Employed	98	16.3
	Any Other	108	18.0
Qualification	Under graduate	70	11.7
	Graduation	148	24.7
	Post-Graduation	211	35.2
	Professional	80	13.3
	Doctorate	91	15.2
Rural/ Urban	Rural	285	45.2
	Urban	315	54.8
Monthly Income	<10,000	246	41.0
	10,001-25,001	108	18.0
	25,001-50,000	120	20.0
	50,001-75,000	82	13.7
	>75,000	44	7.3

(Source: Primary data)

Above table shows the classification of respondents on the basis of socio-economic variables included in the study. Table presents the percentage values and number of respondents belongs to the various categories.

The above decided objectives will be fulfilled by using different statistical tools and techniques. To identify the factors affecting holistic thinking of consumers, exploratory factor analysis is used and those factors are confirmed with the help of confirmatory factor analysis. To compare the holistic thinking of consumers in different zones of Haryana, one-way ANOVA is used.

### Analysis and Interpretation: -

1) **Identifying the factors affecting holistic thinking of consumers:** -to achieve this objective of exploring the underlying factors of holistic thinking among consumers of Haryana, exploratory factor analysis is used on 300 respondents with the help of Principle component analysis method. The content validity was tested using Bartlett's Test of Sphericity and the Kaiser–Mayer–Olkin Measure of sampling adequacy. KMO test is used to measure how suitable is the data for factor analysis. The value of KMO should be 0.60 or greater to carry on the factor analysis.

Table 1.2  
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.815	
Bartlett's Test of Sphericity	Approx. Chi-Square	2622.420
	Df	210
	Sig.	0.000

(Source: Primary data)

Table 1.2 exhibits 0.815 as KMO value of data which is acceptable to go ahead for analysis. The value of Bartlett's test of Sphericity also looks significant, as p-value is less 0.05 (i.e.  $p=0.000$ ) which indicates that there is significant correlation structure exist among variables. For

the factor loading the minimum score of 0.5 was applied for the retention of the statements (Hairet *al.* 2006). Rotated Component Matrix method was used and four factors were extracted (Eigen value having more than one) as shown in the Table 1.3.

Table: 1.3  
Factor Loadings for the Analysis-Holism Scale (EFA)

Items	Factor loading
Factor 1: Interrelation ( $\alpha = .74$ )	
1) Everything in the universe is one way or another related to each other.	.507
2) Everything in the world is networked in a causal relationship.	.717
3) Even a small change in any element of the universe can lead to significant alteration in other elements.	.588
4) Any phenomenon has numerous numbers of causes, and some of the causes are not known.	.516
Factor 2: Moderation( $\alpha = 0.70$ )	
5) When disagreement exists among people, they should search for ways to compromise and respect everyone's opinion	.701
6) It is important to find a point of compromise than to debate who is right/wrong, when one's opinion conflict with other's opinion	.675
7) In a situation of contradiction, it is more desirable to take the middle ground then to go extreme.	.538
8) It is desirable to be in harmony, rather than in discard, with others of different opinions than one's own.	.685
9) We should avoid going to extreme in case of disagreement among people.	.586
Factor 3: Consistency( $\alpha = 0.73$ )	
10) A person who is currently living a successful life will continue to stay successful in future also.	.824
11) An individual who is currently honest will stay honest in the future also.	.827
12) If an event is going on in a particular way, then it will continue in the same way.	.762
13) Future events are predictable based on present situation.	.504
Factor 4: Totality ( $\alpha = 0.60$ )	
14) The whole, rather than its parts, should be considered in order to understand a phenomenon.	.661
15) It is more important to pay attention to the whole than its parts.	.730
16) The whole is greater than the sum of its parts.	.632
17) It is more important to pay attention to the whole context rather than details.	.616
18) It is not possible to understand the parts without considering the whole picture.	.595
19) We should consider the situation a person is faced with, as well as his/her personality, in order to understand one's behavior.	.518

(Source: Primary data)

All of these factors are explained below:

- a) **Interrelation:** means connected in such a way that each thing has an effect on or it depends on the other. While observing any object or event, a holistic thinker will give importance to the entire context while analytic thinker will consider only the object neglecting its context. This factor consists of five statements and has factor loadings from 0.507 to 0.717. All of these statements are positively related with this factor.
- b) **Moderation:** means the quality of avoidance of excess or extremes situation especially in one's behaviour. An individual with holistic thinking analyses how people handle contradictions when there are conflicting situations. This factor consists of five statements and has factor loadings from 0.538 to 0.701. All of these statements are positively related with this factor.
- c) **Consistency:** means having same opinion which can't be changed, it's a standard behaviour. A holistic thinker believes that most objects are independent, their key characteristics are stable, so expected changes can't be introduced over time. This factor consists of four statements and has factor loadings from 0.504 to 0.827. All of these statements are positively related with this factor.
- d) **Totality:** means the quality of being whole, complete or total. A holistic thinker is a person who gives importance to the whole concept instead of considering its parts. This factor consists of six statements and has factor loadings from 0.518 to 0.730. All of these statements are positively related with this factor.
- 2) **To validate the factors affecting holistic thinking scale on consumers:** -To achieve this objective of confirming the extracted factors, confirmatory factor analysis is used on the remaining 300 respondents to determine the goodness of fit between proposed model and sample data. Maximum Likelihood Estimation method is selected because the data is normally distributed. This was conducted on the basis of six common model fit indices: normal chi-square ( $\chi^2/df$ ); goodness-of-fit index (GFI); adjusted goodness of fit (AGFI); normed fitness index (NFI); comparative-fit index (CFI); root mean square error of approximation (RMSEA). The results of CFA are presented in Table 1.4.

Table 1.4

Model Fit Indices (CFA)

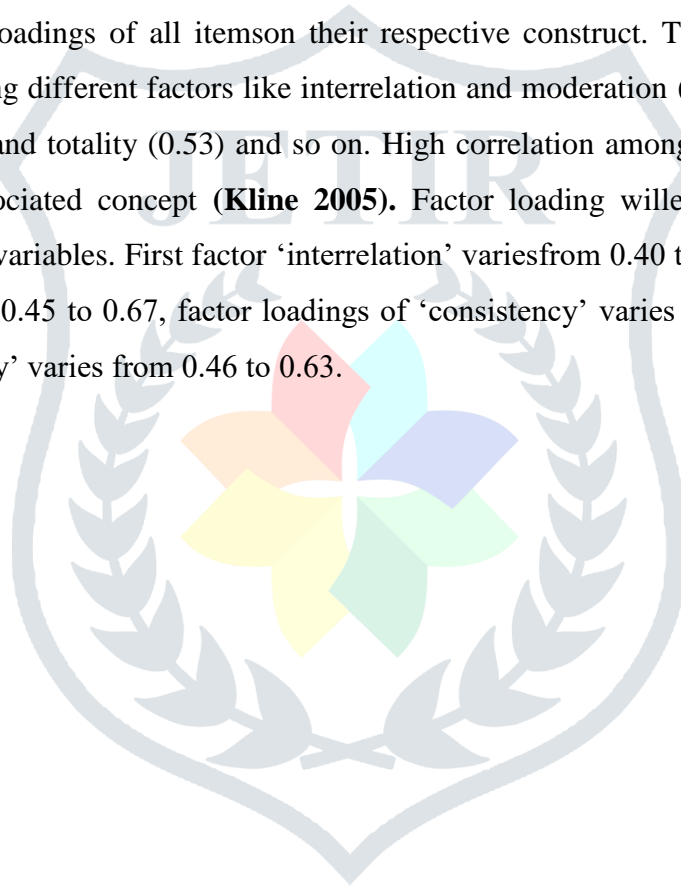
Model Fit Indices	Values	Acceptable Values
Cmin/df	2.241	Values less than 3

GFI	0.965	Values greater than 0.90
AGFI	0.948	Values greater than 0.90
NFI	0.905	Values greater than 0.90
CFI	0.951	Values greater than 0.90
RMSEA	0.046	Value less than 0.06

(Source: Primary data)

Above table exhibits good fit between the model and the observed data. All fitting indices are in acceptable range according to the criteria mentioned above (Hair et al. 2006). Therefore, the model is deemed to be the final measurement model, so there is no need to examine the modification indices.

Fig. 1 shows the model's structure of the factors and their associated items, correlation between both factors, and the final loadings of all items on their respective construct. There is a positive and significant relationship among different factors like interrelation and moderation (0.55), moderation and totality (0.42), interrelation and totality (0.53) and so on. High correlation among factors indicates that ability to represent the associated concept (Kline 2005). Factor loading will explain the correlation between observed and latent variables. First factor 'interrelation' varies from 0.40 to 0.85, factor loadings of 'moderation' varies from 0.45 to 0.67, factor loadings of 'consistency' varies from 0.35 to 0.78 and the factor loadings of 'totality' varies from 0.46 to 0.63.





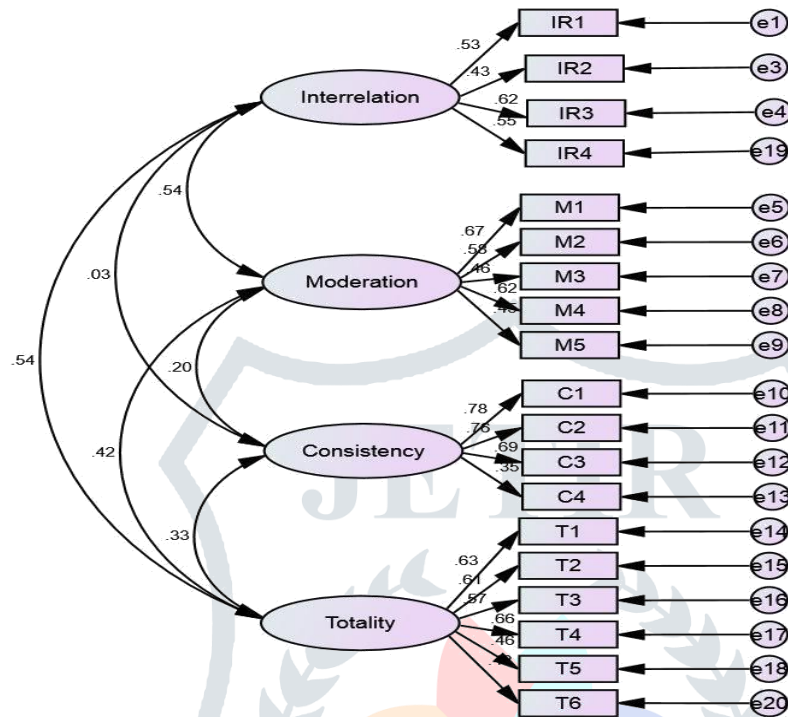


Fig.1 Final Measurement Model (Source: Primary Data)

2) **To compare the holistic thinking of consumers in different zones of Haryana:** - To achieve this objective of compare the factors among different zone,a one-way ANOVA test has been used. Before applying the ANOVAtest, all assumptions related to Normality have been tested. Test of normality confirm with Kolmogorov-Simonov Test and Homogeneity of the variance checked by using Levene’s Test. All the data has found normally distributed so one-way ANOVA is used. Table 1.6 displays the summary for the ANOVA.

Table 1.5

Result of ANOVA based on Zones of Haryana

Factors/ Factors		Sum of Squares	df	Mean Square	F	Sig.	Null Hypothesi s
Interrelation	Between Groups	3.689	5	0.738	1.970	.081	Accepted
	Within Groups	222.416	594	.374			
	Total	226.105	599				

Moderation	Between Groups	8.397	5	1.679	4.588	.000	Rejected
	Within Groups	217.430	594	.366			
	Total	225.827	599				
Consistency	Between Groups	8.932	5	1.789	3.166	.008	Rejected
	Within Groups	335.208	594	.564			
	Total	344.141	599				
Totality	Between Groups	2.107	5	0.421	1.045	.390	Accepted
	Within Groups	239.446	594	.403			
	Total	241.553	599				

(Source: Primary data)

Table 1.6 represents the result of the ANOVA of six zones of Haryana in context of different factors of holistic thinking. ANOVA compares the mean score of different factors of holistic thinking with zones and calculated their F-ratio value. For ‘interrelation’ factor, F-ratio value is 1.970 with sign. 0.081, which is more than 0.05 and shows that null hypothesis is accepted which means that there is no significant difference between consumers of different zones while describing interrelation in the thinking. In case of moderation, F-ratio value 4.58 with sign. 0.00, which is less than 0.05 and shows that null hypothesis is rejected which signifies that there is a significant difference between consumers of different zones while describing moderation in the thinking. In case of consistency, F-ratio value 3.16 with sign. 0.008, which is less than 0.05 and shows that null hypothesis is rejected which signifies that there is a significant difference between consumers of different zones while describing consistency in the thinking. In case of totality, F-ratio value 1.04 with sign. 0.390, which is more than 0.05 and shows that null hypothesis is accepted shows that there is no significant difference between consumers of different zones while describing totality in the thinking.

When null hypothesis is rejected, it is appropriate to perform a Post-Hoc test to know exactly where the difference lies. In the present study it is done to find out the significant difference among six zones of Haryana regarding the factor ‘moderation’ and ‘consistency’.

Table 1.6

Multiple Comparisons of different Zones based on Post Hoc Test

Dependent Variable	(I) Zone of Haryana	(J) Zone of Haryana	Mean Difference (I-J)	Std. Error	Sig.
Moderation	Ambala	Faridabad	-.06400	.08556	.976
		Gurugram	-.03800	.08556	.998
		Hisar	-.22200	.08556	.100
		Rohtak	-.16600	.08556	.379

		Karnal	-.34200*	.08556	.001*
		Ambala	.06400	.08556	.976
		Gurugram	.02600	.08556	1.000
	Faridabad	Hisar	-.15800	.08556	.437
		Rohtak	-.10200	.08556	.841
		Karnal	-.27800*	.08556	.015*
		Ambala	.03800	.08556	.998
	Gurugram	Faridabad	-.02600	.08556	1.000
		Hisar	-.18400	.08556	.263
		Rohtak	-.12800	.08556	.667
		Karnal	-.30400*	.08556	.005*
		Ambala	.22200	.08556	.100
	Hisar	Faridabad	.15800	.08556	.437
		Gurugram	.18400	.08556	.263
		Rohtak	.05600	.08556	.987
		Karnal	-.12000	.08556	.726
		Ambala	.16600	.08556	.379
	Rohtak	Faridabad	.10200	.08556	.841
		Gurugram	.12800	.08556	.667
		Hisar	-.05600	.08556	.987
		Karnal	-.17600	.08556	.312
		Ambala	.34200*	.08556	.001*
		Faridabad	.27800*	.08556	.015*
	Karnal	Gurugram	.30400*	.08556	.005*
		Hisar	.12000	.08556	.726
		Rohtak	.17600	.08556	.312
Consistency		Faridabad	-.09800	.10624	.941
		Gurugram	-.09200	.10624	.954
		Hisar	-.22400	.10624	.284
		Rohtak	.15800	.10624	.673
		Karnal	.05400	.10624	.996
		Ambala	.09800	.10624	.941
		Gurugram	.00600	.10624	1.000
		Hisar	-.12600	.10624	.844
		Rohtak	.25600	.10624	.154
		Karnal	.15200	.10624	.708
		Ambala	.09200	.10624	.954
		Faridabad	-.00600	.10624	1.000
		Hisar	-.13200	.10624	.816
		Rohtak	.25000	.10624	.175
		Karnal	.14600	.10624	.743
		Ambala	.22400	.10624	.284
		Faridabad	.12600	.10624	.844
		Gurugram	.13200	.10624	.816

	Rohtak	.38200*	.10624	.005*
	Karnal	.27800	.10624	.095
	Ambala	-.15800	.10624	.673
	Faridabad	-.25600	.10624	.154
Rohtak	Gurugram	-.25000	.10624	.175
	Hisar	-.38200*	.10624	.005*
	Karnal	-.10400	.10624	.925
	Ambala	-.05400	.10624	.996
	Faridabad	-.15200	.10624	.708
Karnal	Gurugram	-.14600	.10624	.743
	Hisar	-.27800	.10624	.095
	Rohtak	.10400	.10624	.925

\* The mean difference is significant at the 0.05 level.(Source: Primary data)

Table 1.6 exhibits the individual comparison of different zones of Haryana with the moderation and consistency factor of holistic thinking. Turkey HSD post hoc test was used to calculate comparisons among different categories. While describing ‘moderation’ factor it is found that there is a significant difference in the thinking pattern of consumers. These differences are in Karnal zone when compared with Ambala, Faridabad and Gurugram zone (as their p-value is more than 0.005). And while describing ‘consistency’ factor it is found that there is a significant difference in the thinking pattern of consumers. These differences are in Hisar zone when compared with Rohtak zone (as their p-value is more than 0.005).

## DISCUSSION AND CONCLUSION

The present work is done to identify if there is any significant difference between the factors of holistic thinking of consumers from different zones of Haryana. A holistic thinking scale was developed with the help of exploratory factor analysis and confirmed with the help of confirmatory factor analysis. The four factors of holistic thinking were identified which are: - interrelation, moderation, consistency and totality. All of these factors are explained along with the similar studies done by different researchers.

First factor ‘interrelation’ signifies that every element is related with one another in one way or the other. Every single element plays different role, while describing the relationship with any other element which is similar in nature. In the present study, there is no significant

difference in the thinking of consumers of different zones while describing the interrelation relationship. Consumers from every zone accept the presence of link between different elements and that they are interrelation with one another in one way or other. It is in contrary, to the results found by Choi *et al.* (2003), Choi and Nisbett (1998); Choi *et al.* (1999); Lee *et al.* (1996); Miller (1984); Morris *et al.* (1995); Morris and Peng (1994), that there is a significant difference between East and West Asians. East Asians pay more attention towards the interdependency among all related elements than Westerners. The differences in our results and past results may be due to the impact of Indian philosophy that believes in 'Vasudeva Kutukbh' means that the whole world is one family whereas western philosophies are more based on economic consideration due to capitalist model of development that propagate profit or wealth ignoring all other dimensions.

Second factor moderation means the quality of avoidance of excess or extremes situation especially in one's behaviour. When there are two contradictory situations like pro versus con arguments, an individual chooses a middle ground instead of going to extreme situation. In the present study, there is a significant difference in the thinking of consumers of different zones while describing the moderation factor. In a study of Peng and Nisbett (1999) the same result has been formed that there is a significant difference between East and West Asians. East Asians compromise with a middle ground by taking on a yin-yang approach according to which both situations which is opposite to each other can be possible at the same time whereas westerners have a formal and logical approach according to them only one of the two opposite situation can exist. Peng (1997) study also supports the significant difference; he found that Chinese students preferred contradictory arguments, whereas American students preferred non contradictory arguments.

Third factor consistency means having same opinion which can't be changed every time whenever facing such situation, it may be due to the habit that formed by growing in such culture. In the present study, there is a significant difference in the thinking of consumers of different zones while describing the consistency factor. The studies of Ji *et al.* (2001); Peng and Nisbett (1999), supported that there is a significant difference between East and West Asians. West Asians are maintaining a linear perspective that predicts patterns that are similar to previous happenings whereas East Asians consider that every phenomenon is non static and

changes can be introduced whenever needed. Studies have found that when participants were asked to make future predictions about an event, East Asians were having a cyclical view that means continuous variation, such as the study of Ji and colleagues (2001) on Chinese and American participants showed that Chinese participants have predicted nonlinear directions and movements of change which means that happiness have fluctuating nature, it can either go up or down, whereas the American participants predicted that in their life happiness moves in one direction means happiness will go up or down in an constant way.

Fourth factor totality means the quality of being whole, complete or total is considered while thinking about any issue. While observing any object or event, a holistic thinker will give importance to the entire context while analytic thinker will consider only the object neglecting its context. In the present study, there is no significant difference in the thinking of consumers of different zones while describing the totality relationship. It is in contrary, to the results found by Hedden *et al.* (2000) and Ji *et al.* (2000), that there is a significant relationship between the holistic thinking of East and West Asians. East Asians have holistic style of thinking in which they pay more attention towards the dependency between objects and the field to which those objects relates. West Asians have analytic thinking style where they pay more attention only on an object rather than on the field to which it relates. The results of Masuda and Nisbett (2001) were also contrary; they examined the differences in attentional patterns between Japanese and Americans and concluded that Japanese are more likely to see things in relation to the context than are Americans which means that Japanese are more holistic thinkers than the Americans.

On the basis of above discussion, it can be concluded that holistic thinking is truly represented by the statement chosen for measuring the behavior of the consumers for addressing their issue by providing solution to our modern, excessively distracted, complicated lifestyle. As it helps us to analyze that the whole universe is built upon a pattern. Once we understand that pattern, it becomes easier to understand what is to be done, what is going on around us and why things are as they are. There is a need to study the whole, to feel rooted to something that is stable, constant, and deep in meaning. Holistic thinking helps us in understanding the way we are connected to the natural world. It is a unique way of understanding the world. In nutshell, holistic thinking teaches us that single perspective is not sufficient to understand or resolve any given problem rather; the situation must be analyzed as a whole.

## Future Work

The present study deals with only the consumers of Haryana in future two or more states can be taken so that comparison can be possible. Secondly, it is quite possible to consider other segments of society like managers, entrepreneur etc. This study is based only on Holistic Thinking of consumers; in future its impact can be studied other variables like impact of consumer holistic thinking on environment conservation.

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