

# Gender Based Multi Group Analysis for Organic Vegetables: An Empirical Investigation

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**Abstract:** *A paradigm shift has begun in the present dynamic India with regard to the purchase intention of consumers on organic vegetables. This study investigated the impact of exogenous latent variables namely, health concern, perceived behavioral control, environmental concern, perception and subjective norms on endogenous latent variable, purchase intention gender wise. The total sample size is 640. Data collected were done through structured questionnaire consisting of 5 rating Likert scale and cross sectional study has been done. Partial Least Square- Structural Equation Modeling has been done by using second generation software namely, Smart PLS 3 for data analysis. The results show that constructs health concern, environmental concern and perception has association with purchase intention is significant with males than females whereas, the relationship between “subjective norms and purchase intention”. It is significant in females than males. But perceived behavioral control with purchase intention has no significance with both genders. However, the present study does provide empirical support for the theorized relationships of health concern, perceived behavioral control, environmental concern, perception, subjective norms, attitude and purchase intention.*

**Keywords:** *Environmental Concern, Perceived Behavioral Control, Subjective Norm*

## Introduction

The organic product consumption has reached a milestone in recent decades with increase in organic land size along with organic sales which have proliferated in Indian big cities such as south and eastern part of and Delhi and Bengaluru. Prior research asserts that the increasing concern towards health and environmental issues have up surged the product potential which is a paradigm

shift in organic product purchase intentions (Somnath Chakrabarti, 2010). Substantial research devoted on consumer’s attitude as a driving force towards consumer intention to purchase. Furthermore, in organic product domain consumer attitude are generally postulated as a spotlight towards predictability between favourable attitude and purchase

intention. Very likely however, based on attitudinal ambivalence consumers are differentiated as healthy eaters with purchase intentions. However, from nascent to present era there has been a progressive rise in environmental concern which has been shifted from fringe to mainstream issue. But despite these holistic approach conversely, some stream of literature identifies price as constrain towards consumers purchase intentions. Since high price premium and distrust towards product labels emasculate the consumers intentions to purchase. However, studies advocate consumer’s negative illusion about product labels and standards have build-up large gap between consumers negative perception and organic product purchase intention. Furthermore, specifically study exposes sufficient information and trust towards product attributes with food safety issues and health and environmental concern prove to be the tidal wave inculcating purchase intention desire among consumers. In tracing the justification of the product, these products are associated with environmental friendly with intrinsic quality and safety features. Relevant information focuses on consumer’s attitude being the main motive which directly influences purchase decisions.

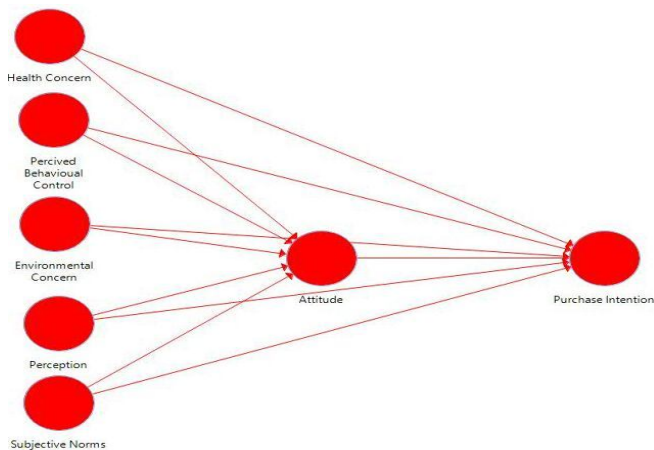
A marketing literature posits that encouraging pro-environmental behaviour in a collectivist society may lead to intention to pay. Nevertheless, word of mouth plays a crucial role in creating positive repercussions. Moreover, social norms

create a manifest role with hand in hand supported by family and peers influence the willingness to pay (Barbara seegebarth et al., 2016). Furthermore, research delineate that consumer’s behaviour is subjected to the excess decision-making process. To conclude his willingness to pay he transforms himself in a different path of action, beginning with perceiving, searching, interpretation, and purchasing which is the outcome of an action. Here the link between belief and behaviour is the final judgment of consumer’s actions of choice. Studies advocate about the substantial increase in the product consumption is due to the demand factor. Organic product choice acts as a mechanism for healthier food intake. The other side of the spectrum claim about developing countries willing to pay for organic product shows the pre-eminent picture of increasing sales from past decades (Ionel Bostan et al .,2019).

### Conceptual framework of the study

The relevant category explains about the different constructs likely to be used for building a conceptual framework. This research posits about the different constructs which comprise of several variables such as “Health Concern”, “Perceived Behavioural Control”, “Environmental Concern”, “Perception”, “Subjective Norms”, “Attitude” and “Purchase Intention”. A brief discussion of the exogenous, endogenous and mediator have been considered for the study.

**Figure 1: Conceptual Framework of the study**



## **Health Concern**

Present life of consumers is vulnerable towards high risk due to various disease, sickness and lifestyle. This tends to make consumers concern about their health leading to selection of food to stay fit. The “health concern” influences the attitude of consumers towards organic product consumption. This positive attitude of consumers has originated with trust for the product leading to non-suspicion and lack of fear of consumption. Prior research has identified health concern as the primary motive which leads to purchase intention. However, studies presuppose health concern is the driving force leading to intentions of purchase (Suhan Mendon et al., 2019). Ultimately, Health concern appears to be key motivators for vigorous life pattern and style, since studies of some stream of literature shows consumers perception about belief in organic labels have a higher influence on purchase intentions. Nevertheless, increased health concern gave ample opportunity for organic producers to improve the supply network mechanism (Mohd Rizaimy Shaharudin et al., 2010). Studies highlights health concern is defined as individual’s motive to have healthy belief and attitude. Digging deeper into consumers behavioral intentions consumers decisions involve safety security with food safety issues and organic consumption rather than conventional produced consumption. However, consumers are bothered about issues of environment along with health concern, since the usage of fertilizers and pesticides which have created devastating effect on eco-system, may intensify due to non-organic product consumption (Brahim Chekim, 2018).

## **Perceived Behavioral Control**

“Perceived behavioral control” signifies individual perception of ease or problems in performing behaviour which result in varying perception of behavioral control based on various situations. Consumers PBC towards organic product influences the intentions to purchase. If consumers assume organic products to be eco-friendly it might powerfully influence the behavioral change. This view is mirrored in consumers buying behaviour concepts.

Nevertheless, PBC acts as a proxy for individual attitude and buying intentions (Changhyun Nam, 2017). Studies further propose PBC influences the product purchase intentions along with self-efficacy and availability. A given behaviour is inclined to involve in action with both ability and motivation, rather than only one factor. Before purchasing the given product individual behavioral control evaluate with perceived affordances and perceptual cues which consumers acquired (Kamonthip Maichum, 2016).

## **Environmental Concern**

The massive use of the chemical and fertilizers have led to land degradation leading to pollution with biodiversity loss and destruction of the natural habitats. Consequently, sustainable agriculture is considered paramount. Among the various systems, organic production is one of the positive outlooks to minimize these negative impacts on the environment. Organic production minimizes chemical fertilizers, pesticides and detriment effects on environment with safer food choice (Neda Tiraieyari, 2014). A notable issue on study of organic products exhibits environmental concern is a credence and degree of concern an individual holds. The researchers investigated the consumer behaviour towards environmental sustainable activities. Studies of some stream of literature encompass three dimensions of environmental concern such as knowledge about environment, Attitude towards environment and belief about environmental issues. However, studies describe environmental concern reflects the increasing no of consumers purchase intentions. Furthermore, the concept environment concern is multifaceted, which influence the behaviour and reflect daily activities of consumers.

## **Perception**

Perception is an individual behaviour with regard to his attitude and preference towards a product. His behaviour specifically refers to an action regarding decision about buying or not to buy a particular product. However, the decision of buying is not considered in some of the cases, but it appears as a result of forward movement

with regard to time duration, economic social and cultural aspects. In cognitive terms, perception can be identified as an efficiency to understand the external world called as knowledge. Whilst investigating consumer behaviour, one should take into account certain traits such as consumers thought (perception), feel (feeling), and action (behaviour) which overall influence purchase intention. Historically, stated consumers perception encompasses organic purchase intentions through three drivers such as perceived value, risk and trust towards product. The risk factor towards chemically used product eases customer's skepticism leading to organic product consumption and increase value for organic products by creating trust towards product potential.

### **Subjective Norms**

Subjective norms are considered a social pressure which encourages an to engage in a specific behaviour. These behavioral tendencies inculcate desire among individual leading to action. The compliance motivation and social pressure are the functions of subjective norms. Studies pointed out individual behaviour and specific behaviour is related to reference groups (Shwu-Ing Wul & Jia-Yi Chen, 2014). Empirical research exhibits consumers belief about organic products is the due to social pressure from people who are considered important. However, strong norms regarding organic purchase intention is likely to strengthen the belief. Conversely, research of some approach gives negative intentions since the important people expect the near ones not to purchase the product due to paucity about organic labels (Wong & Aini, 2017).

### **Attitude**

Digging into consumers attitudinal tendencies studies of some literature posits about organic product and intentions to purchase is due to safety and security of health claims. The consumer's positive attitude is due to the emerging environmental issues and global warming impact which influence the organic product consumption significantly. Preceding research studies enclose the underpinning factor for the consumers

attitudes are safety, health, environmental friendliness and animal welfare (Pittawat et al., 2016). Perhaps the most supporting evidence support the consumers favourable behaviour is mutilating due to willingness to pay for organic products, which are environmentally friendly. However, studies exhibits consumers attitude are considered as a good predictors of intentions to pay. Arguably, on the other hand price conscious consumers reprimand product consumption (Athanasios Krystallis & George chrysohoidi, 2005).

### **Purchase intention**

Studies of some literature delineates about intentions score high with higher concern of consumers environmental issues and health concerns, Here safety, security about food issue is a belief which exaggerates a healthy move towards purchase intentions. However, media play a crucial role in developing brand attachment towards the product. Nevertheless, Publicity is one of the motivating factors to upsurge the sales with purchase intentions (Sujaya et al., 2019). Prior research describes intentions are the best predictors towards consumers belief words product potential. Studies also demonstrated relationship between attitude and intentions are psychological assessment of the individual which towards an action. Moreover, consumers personal factor reinforce consumers decisions whether to buy or not. Despite these intentions studies of some literature stream show negative repercussion of consumers due to lack of knowledge and confidence towards product labels. Studies highlight that marketers can bring a broader prospective by proliferating the demand for organic products through strengthening supply chain network and awareness about product potential (Kamonthip Maichum et al., 2016).

### **Method of Study**

A present research adopts a descriptive research design and a questionnaire with structured format is used to obtain by data collection from the respondents. The items are taken from different scales. Construct health concern is measured by taking 6 items from consciousness scale of

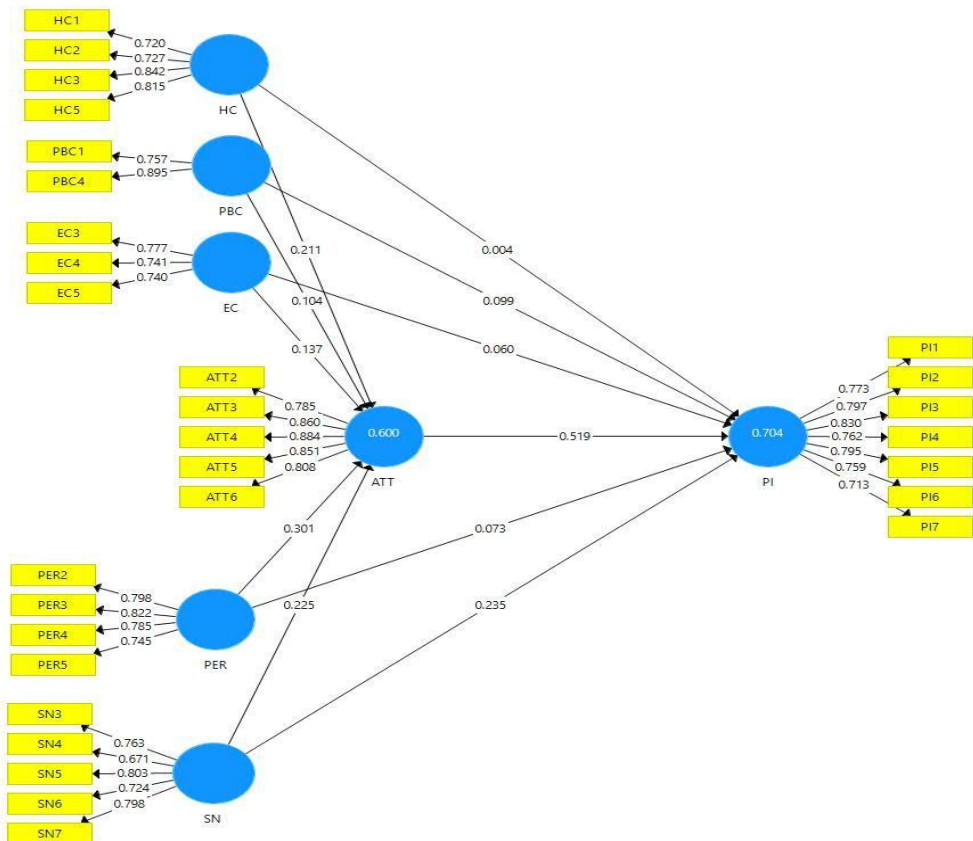
'Tanner, Wöfling Kast', 2003. perceived behavioral concern is measured by using 6 items from predicting human behaviour scale of 'Judith Holdershaw and Philip Gendall', 2008. Similarly, environmental concern is measured by using 6 items from measurement of environment concern scale of 'Shannon M. Cruz, Brian Manata', 2020. Again 6 items are taken from attitude towards organic foods and perception of risk scale of 'AnnaSaba and Federico Messina', 2020 to measure perception. But subjective norms are measured with 7 items and used subjective norms in forming intentions scale of "M Ham, M Jeger" and "A Frajman Ivkoviæ", 2015. The mediating construct attitude is measured with 6 items by using attitudes measurement scales of "Joseph F et al.", 2019". Finally the endogenous latent variable namely, purchase intention is measured by 7 items with variability and bias in purchase

intention scales by "Malcolm Wright and Murray MacRae", 2007. With 5 rating "Rensis Likert" 'scale of "strongly agree and strong disagree" the variables are measured. The cross sectional study has been employed. The total size of the sample is 640 in which 336 are males and 304 are females. Survey instrument of questionnaire is distributed to the retail outlets located at Bengaluru (Urban), Mysore, Udupi, Dakshina Kannada districts of Karnataka state, India. The selection of the individual respondents is done through non-probability purposive sampling method. The data analysis is done by using "Partial Least Square- Structural Equation Modeling" (PLS-SEM) by using software, Smart PLS 3.

### Measurement Model Assessment

The loadings of all manifest indicators of the measurement model are shown in Figure 2

Figure 2: Measurement Model



The rule of thumb explains the R<sup>2</sup> has high value or not (Hair et al., 2014). Prior research “Ibid, 2014” states that the 0.25, 0.50 and 0.75 are the cut off values are treated to be weak, moderate

and substantial high model for endogenous constructs. In this model the R<sup>2</sup> values for purchase intention is 0.704 indicate the model is moderate in nature.

**Table 1: Measurement model assessment**

Constructs	Indicators	Outer loading		Indicator Reliability		Composite reliability		AVE	
		F	M	F	M	F	M	F	M
Health Concern	HC1	0.720	0.811	0.518	0.657	0.859	0.872	0.605	0.630
	HC2	0.727	0.752	0.528	0.565				
	HC3	0.842	0.778	0.708	0.605				
	HC5	0.815	0.831	0.664	0.690				
Perceived Behavioral Control	PBC1	0.757	0.738	0.573	0.544	0.814	0.805	0.687	0.676
	PBC4	0.895	0.898	0.801	0.806				
Environmental Concern	EC3	0.777	0.799	0.603	0.638	0.801	0.840	0.567	0.638
	EC4	0.741	0.863	0.549	0.744				
	EC5	0.740	0.728	0.547	0.529				
Perception	PER2	0.798	0.841	0.636	0.707	0.867	0.885	0.621	0.658
	PER3	0.822	0.869	0.675	0.755				
	PER4	0.785	0.808	0.616	0.652				
	PER5	0.745	0.719	0.555	0.516				
Subjective Norms	SN3	0.763	0.774	0.582	0.599	0.867	0.881	0.568	0.598
	SN4	0.671	0.756	0.450	0.571				
	SN5	0.803	0.806	0.644	0.649				
	SN6	0.724	0.753	0.524	0.567				
	SN7	0.798	0.776	0.636	0.602				
Attitude	ATT2	0.785	0.778	0.616	0.605	0.922	0.919	0.703	0.694
	ATT3	0.860	0.843	0.739	0.710				
	ATT4	0.884	0.878	0.781	0.770				
	ATT5	0.851	0.833	0.724	0.693				
	ATT6	0.808	0.830	0.652	0.688				
Purchase Intention	PI1	0.773	0.848	0.597	0.719	0.914	0.922	0.602	0.630
	PI2	0.797	0.771	0.635	0.594				
	PI3	0.830	0.808	0.688	0.652				
	PI4	0.762	0.838	0.580	0.702				
	PI5	0.795	0.819	0.632	0.670				
	PI6	0.759	0.730	0.576	0.532				
	PI7	0.713	0.732	0.508	0.535				

**Note: F indicates Female and M indicates Male**

According to the cut off value of reflective model path loading should be above .70. Since all the indicator values for outer loadings are above 0.70, which indicates that the outer loading has been established (Table 1).Indicator reliability is obtained by squaring the outer loadings of the indicators. The cut off value of indicator reliability is 0.5. This suggests that the constructs given, provides at least 50% of the justification

for the variance of its items. All the indicators of both exogenous and endogenous latent variables gender wise has been established indicator reliability (Table 1). “Composite reliability” is also known as “internal consistency reliability”. But if the value is greater than .80 then it is still better. The composite reality has been established for both male and female gender because the values are more than 0.8 threshold value (Table

1). The extent to which a measure overlaps with other measures of the similar construct is known as convergent validity. The “average variance extracted” is considered a strong suggested test to measure the “convergent validity”. (Naylor et al., 2012). The Average variance extracted (AVE) cut off value should be more than 0.50 (McLure Wasko & Faraj, 2005; Wixom & Watson, 2001). To establish convergent validity level of constructs Average variance extracted (AVE) is used. Total mean value of the squared loadings

of the indicators associated with the constructs is represented in The AVE is calculated by dividing the total number of indicators by the total number of loadings. (Hair et al., 2017). The AVE value must be greater than 0.50 (*Ibid*, 2017). Here, all the AVE values to be more than 0.50 for exogenous and endogenous constructs gender wise (Table 1). Over half of the variance of the measures is explained by the construct which establishes convergent validity.

### Model Fit/Goodness of Fit

**Table 2: Model fit through confirmatory factor analysis**

Test for appropriate Fit							
		df	p				
1344		384	< .001				
Fit Measures							
				RMSEA 90% CI			
CFI	TLI	SRMR	RMSEA	Lower	Upper	NFI	
0.909	0.997	0.0456	0.0625	0.0589	0.0661	0.902	

There are several methods to measure model fitness. “Comparative fit index” (CFI), “Tucker-Lewis index” (TLI), “Standardized Root Mean Square Residual” (SRMR), “Root mean square error of approximation” (RMSEA), and “Normed Fit Index” (NFI). Under Comparative fit index and Tucker-Lewis index good fitness threshold value is above 0.90 (Bryne 2006; Hooper et al. 2008). In this research work the CFI and TLI values are 0.909 and 0.997 which is higher the threshold value of 0.9. Model fitness is also measured with Standardized Root Mean Square Residual (SRMR) criteria fit (Henseler et al., 2014). The higher fit appear when SRMR value are zero. A better fit threshold value is less than

0.08 (Hu and Bentler, 1998). In this study the SRMR value is 0.0456 express a model which is considered as good fit. Another method of measuring the model fitness is through Root mean square error (RMSEA) of approximation where the threshold value at or below 0.08 (Bryne 2016; Hooper et al. 2008). In this research work the RMSEA value is 0.0625 which shows a threshold value lesser than 0.008 value point outs model fitness. The model fit is also measured with the values of Normed Fit Index (NFI) which is also known as Bentler or Bonett index. NFI value above 0.9 (Lohmöller, 1989) is considered has acceptable fit. The research work of NFI value is 0.902 which is more than the threshold value.

### Structural model assessment and testing of hypotheses

The structural model analysis was performed in a stepwise procedure. The full path model was tested to check the empirical validity of the hypotheses. The full path model was, tested to determine the empirical validity of the entire structural model. Accordingly, the following effects and relationships were tested. The structural model path coefficients suggest the

toughness and direction of structural model relations. Strong links between constructs are indicated by path coefficients that are not around zero. Those route coefficient values that are close to zero, on the other hand, imply a poor link between constructs. According to (Efron & Tibshirani, 1998) the confidence values of the bias-corrected give more clear-cut value. This was propounded by Sarstedt, Henseler, & Ringle (2011).

**Table 3: Structural Model Assessment**

Relation	Path coefficient		t-Value		p-Value		Bias corrected 95% confidence interval	
	F	M	F	M	F	M	F	M
HC -> ATT	0.211	0.189	3.388	3.184	0.001	0.001	(0.088,0.333)	(0.071,0.302)
PBC -> ATT	0.104	0.069	1.903	1.321	0.057	0.187	(-0.005,0.211)	(-0.036,0.171)
EC -> ATT	0.137	0.130	2.227	2.458	0.026	0.014	(0.007,0.250)	(0.027,0.234)
PER -> ATT	0.301	0.319	4.471	5.547	0.000	0.000	(0.170,0.434)	(0.205,0.427)
SN -> ATT	0.225	0.303	4.249	5.630	0.000	0.000	(0.123,0.330)	(0.203,0.409)
ATT -> PI	0.519	0.481	9.383	8.190	0.000	0.000	(0.405,0.625)	(0.371,0.602)
HC -> PI	0.004	0.158	0.088	3.413	0.930	0.001	(-0.095,0.093)	(0.066,0.247)
PBC -> PI	0.099	0.021	1.778	0.533	0.075	0.594	(-0.007,0.207)	(-0.060,0.093)
EC -> PI	0.060	0.127	1.119	3.195	0.263	0.001	(-0.050,0.160)	(0.051,0.205)
PER -> PI	0.073	0.118	1.345	2.455	0.179	0.014	(-0.030,0.182)	(0.024,0.213)
SN -> PI	0.235	0.117	4.152	2.662	0.000	0.008	(0.123,0.344)	(0.033,0.204)

**Note:** This study employed the algorithm parameters of 640 cases, 5000 samples, and the option of 'no sign changes' to check the importance of the path coefficients (Hair et al., 2014). The p-value is calculated using the bootstrapping technique with 640 cases and 5000 samples. A double bootstrap process was used to calculate the bias adjusted 5% (two-tailed) confidence interval (Chin, 1992).

**Hypothesis 1:** There is a strong association between health concern and purchase intention with regard to male gender than female.

The total effect of health concern and purchase intention was investigated. The empirical t value for male is 3.143 which is more than the threshold value of 1.96 whereas, the empirical t value for female is 0.088 which is below the threshold value substantiate the hypothesis 1 states that there is a strong relationship between health concern and purchase intention in case of male gender and not female.

**Hypothesis 2:** There is a strong association between perceived behavioral control and purchase intention with regard to male gender than female.



The association between perceived behavioral control and purchase intention for male and female are shown by the empirical t value of 0.533 and 1.778 respectively. Thus, these values are below the threshold value of 1.96 which doesn't substantiate the hypotheses 2 that there is a strong relationship between perceived behavioral control and purchase intention with regard to male gender than female. Both male and female gender wise this hypothesis got rejected.

**Hypothesis 3:** *There is a strong relation between environmental concern and purchase intention with regard to male gender than female.*

The total outcome of environmental concern and purchase intention was investigated. The empirical t values are 3.195 for male gender which is above the threshold value and for female it is 1.119 which is below threshold value and 11.355 respectively which is above the threshold values. Thus, these values substantiate the hypotheses3 that states there exist a strong relation between environmental concern and purchase intention with regard to male gender than female.

**Hypothesis 4:** *There is a strong association between perception and purchase intention with regard to male gender than female.*

The total effect of perception and purchase intention was explored. The empirical t values are 2.455 and 1.345 respectively for male and female gender which is above the threshold values for male gender than female. Thus, these values substantiate the hypotheses 4 that state there is a strong relation with perception and purchase intention regard to male gender than female.

**Hypothesis 5:** *There is a strong association between subjective norms purchase intention with regard to male and female gender.*

The evaluation of outcome of subjective norms purchase intention, without the inclusion of mediators, shows thus that the direct effect of subjective norms on purchase intention is significant and the empirical t value is 2.662 for male gender and 4.152 for female gender which shows the higher cut off value of 1.96. These values substantiate the hypotheses 5 that there is a strong association between these variables with regard to male and female gender.

### Finite-mixture partial least square (FIMIX-PLS) segmentation analysis

**Table 4: FIMIX-PLS and relative segment sizes and retention criteria**

Relative segment sizes			Quality criteria	Number of pre-specified segments		
S1	S2	S3		S=2	S=3	
S=2	82.4%	17.6%	LnL (LogLikelihood)	-763.916	-701.930	
S=3	53.8%	29.6%	16.6%	AIC (Akaike's Information Criterion)	1,581.832	1,485.861
			AIC3 (Modified AIC with Factor 3)	1,608.832	1,526.861	
			BIC (Bayesian Information Criteria)	1,702.292	1,668.781	
			CAIC (Consistent AIC)	1,729.292	1,709.781	
			EN (Entropy Statistic (Normed))	0.967	0.639	

The assessment uses segment retention criteria (Table 4) to determine which. frame a pre-specified segment of 20 runs to local optimal solutions, which should be avoided (Sarstedt, Becker, et al., 2011). Similar number of segments is suggested by different benchmark value. It is compulsory for FIMIX-PLS since the data may not be same and segmentation is necessary for study. (Sarstedt et al., 2011; Ringle et al., 2010; Ringle, Sarstedt, & Mooi, 2010; Hahn et al., 2002). When the unseen heterogeneity is identified then exercising FIMIX becomes crucial. Further if researcher fails to exert FIMIX it will lead to incorrectness of results. The FIMIX-PLS solutions are calculated as follows:

Total sample size is 640. Minimum sample size according to the power table provided by Green (1991) is 75. So  $640/75 = 8.533$ . The segmentation is 9. Applying the rule of thumb of determining sample size by considering 10 times the bigger figure of structural paths along a given construct, the sample size would be a minimum 60 respondents. The relative segment size is decided by multiplying the minimum respondents with each segment values where the value has to come above 60 and nearby 60. So relative segment size is three and feasible segment solution is 2.

“FIMIX-PLS” (Matthews et al., 2016; Hair et al., 2016; Hahn et al., 2002) is fit approach (Hair et al., 2012; Hair et al., 2017). Suggested for the marketing studies (Wilden & Gudergan, 2015; Money et al., 2012; Navarro et al., 2011; Ringle et al., 2010; Sarstedt et al., 2009), FIMIX-PLS is engaged in this research with six or more segments and it considers smaller size segments less than five. Therefore two to five segments are more specific for run FIMIX-PLS. (Sarstedt, Becker, et al., 2011). Since AIC, AIC3, BIC and CAIC point to three segments (Table 4), It looks that a two-segment solution is possible. The only exception is the normed entropy (EN) criterion, which clearly reveals that three segments (0.639) produce the best results and that the number of segments increases significantly as the number of segments grows. The segments with stronger separability have higher EN criteria values with a maximum value of one. This feature is critical for FIMIX-PLS’ ex post analysis (Ringle et al., 2010; Sarstedt & Ringle, 2010). While comparing the previous solutions, we find segment-specific distinct and considerably different PLS-SEM results for the four-segment solution (Table 4). In terms of substantiality, differentiability, plausibility, and accessibility, this two-part approach is ideal (Becker et al., 2013).

**Table 5: FIMIX-PLS results of the two-segment solution**

Constructs	Path Coefficient		Total effect	
	Segment 1	Segment 2	Segment 1	Segment 2
HC -> ATT	0.150	0.347	0.150	0.347
PBC -> ATT	0.036	0.202	0.036	0.202
EC -> ATT	0.206	0.042	0.206	0.042
PER -> ATT	0.486	0.027	0.486	0.027
SN -> ATT	0.231	0.284	0.231	0.284
ATT -> PI	0.726	0.252	0.726	0.252
HC -> PI	0.079	0.187	0.189	0.275
PBC -> PI	0.003	0.233	0.023	0.284
EC -> PI	0.108	0.007	0.257	0.018
PER -> PI	0.094	0.101	0.447	-0.108
SN -> PI	0.022	0.384	0.145	0.456

Table 5 shows the “FIMIX-PLS” results of the four segment solution. The segment 1 shows one large segment. Furthermore, a smaller segment emerges with segment 2. The path coefficient of FIMIX-PLS of the two-segment solution shows that health concern on attitude has high relevance in segment 2 (0.347) when differentiated with segment 1 (0.150) which has low impact. Perceived Behavioural Control has higher relevance in segment 2 (0.202) in comparison with segment 1 (0.036) which has no much impact. Further, the path coefficient reveal that Environmental Concern on Attitude has higher relevancy in segment 1 (0.206) than segment 2 (0.042) which has no impact. However, with the direct relationship between construct perception on attitude in segment 2 (0.027) has no relevance. It is more in segment 1 (0.486). Conversely, with regard to direct relationship between subjective norms on attitude both segment are relevant. But it is relatively higher at segment 2 (0.284), followed by segment 1 (0.231). Though high impact is found in segment 1 (0.726) when comparison to direct association between attitude and purchase intention, segment 1 shows absolutely low impact (0.252). However, perceived behavioural control on purchase intention is significant in segment 2 (0.233) but absolutely no relevance in segment 1 (0.003). In addition, the overall effect reveals that environmental concern on purchase intention has no relevance in segment 1 (0.108) and also in segment 2. However, the direct relationship between the constructs perception on purchase intention has no significance in both segment 1 (0.094) and in segment 2 (0.101). Finally, subjective norms on purchase intention has very high level of importance in segment 2 (0.384) and no significance in segment 1 (0.022).

The total effect of “FIMIX-PLS” of the solution of two-segment reveals that health concern on

attitude has high relevance in segment 2 (0.347) in comparison with segment 1 (0.150) which has low impact. Perceived Behavioural Control has higher suitability in segment 2 (0.202) in comparison with segment 1 (0.036) which has no much impact. Furthermore, the total effect reveals that Environmental Concern on Attitude has higher importance in segment 1 (0.206) than segment 2 (0.042) which has no impact. However, the total effect of construct perception on attitude in segment 2 (-0.027) has no importance. It is higher in segment 1 (0.486). Conversely, with regard to total effect between subjective norms on attitude both segment are important. But it is relatively greater at segment 2 (0.284), followed by segment 1 (0.231). Though high impact is found in segment 1 (0.726) with regard to total effect between attitude and purchase intention, absolute low impact is found in segment 1 (0.252). The total effect reveal that health concern on purchase intention has more important in segment 2 (0.275) when compared with segment 1 (0.189). Moreover, the total effect reveal that perceived behavioural control has more significance in segment 1 (0.284) than segment 2 (0.02). Furthermore, the total effect reveal that Environmental concern has relevance in segment 1 (0.257) than segment 2 (0.018). The total effect of perception on purchase intention has higher relevance in segment 1 (0.447) and no relevance in segment 2 (-0.108). Finally, I relationship between subjective norms and purchase intention segment 2 (0.456) has high relevance compare to segment 1 (0.145).

### **PLS-MGA (Multi-Group Analysis)**

In order to correlate routes between groups, “Parametric Multi-Group Analysis,” also known as “Multi-Group Analysis”, uses the independent samples t-tests. (Keil et al. 2000).

**Table 6: PLS results of a gender-based multi-group analysis**

	Constructs	Path Coefficients Original (FEMALE)	Path Coefficients Original (MALE)	t-Values (FEMALE)	t-Values (MALE)	p-Values (FEMALE)	p-Values (MALE)
N							
Path Relationship	ATT -> PI	0.519***	0.481***	9.383	8.190	0.000	0.000
	EC -> ATT	0.137**	0.130**	2.227	2.458	0.026	0.014
	EC -> PI	0.060	0.127***	1.119	3.195	0.263	0.001
	HC -> ATT	0.211***	0.189***	3.388	3.184	0.001	0.001
	HC -> PI	0.004	0.158***	0.088	3.413	0.930	0.001
	PBC -> ATT	0.104*	0.069	1.903	1.321	0.057	0.187
	PBC -> PI	0.099*	0.021	1.778	0.533	0.075	0.594
	PER -> ATT	0.301***	0.319***	4.471	5.547	0.000	0.000
	PER -> PI	0.073**	0.118**	1.345	2.455	0.179	0.014
	SN -> ATT	0.225***	0.303***	4.249	5.630	0.000	0.000
SN -> PI	0.235***	0.117***	4.152	2.662	0.000	0.008	
R <sup>2</sup>	ATT	0.600	0.660	NA	NA	NA	NA
	PI	0.704	0.751	NA	NA	NA	NA
Composite Reliability	ATT	0.922	0.919	NA	NA	NA	NA
	EC	0.797	0.840	NA	NA	NA	NA
	HC	0.859	0.872	NA	NA	NA	NA
	PBC	0.814	0.805	NA	NA	NA	NA
	PER	0.867	0.885	NA	NA	NA	NA
	PI	0.914	0.922	NA	NA	NA	NA
AVE	ATT	0.703	0.694	NA	NA	NA	NA
	EC	0.567	0.638	NA	NA	NA	NA
	HC	0.605	0.630	NA	NA	NA	NA
	PBC	0.687	0.676	NA	NA	NA	NA
	PER	0.621	0.658	NA	NA	NA	NA
	PI	0.602	0.630	NA	NA	NA	NA
Total effects	ATT -> PI	0.519***	0.481***	9.383	8.190	0.000	0.000
	EC -> ATT	0.137**	0.130**	2.227	2.458	0.026	0.014
	EC -> PI	0.130**	0.189***	2.288	4.039	0.022	0.000
	HC -> ATT	0.211***	0.189***	3.388	3.184	0.001	0.001
	HC -> PI	0.114*	0.249***	1.911	4.626	0.056	0.000
	PBC -> ATT	0.104*	0.069	1.903	1.321	0.057	0.187
	PBC -> PI	0.153***	0.054	2.582	1.043	0.010	0.297
	PER -> ATT	0.301***	0.319***	4.471	5.547	0.000	0.000
	PER -> PI	0.229***	0.271***	3.661	5.233	0.000	0.000
	SN -> ATT	0.225***	0.303***	4.249	5.630	0.000	0.000
SN -> PI	0.352***	0.263***	5.802	5.826	0.000	0.000	

\*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .10$ .

**Note:** The t-value [MGA] splits the data set using the FIMIX-PLS membership probability; the significance test of segment-specific PLS-SEM results employs a double-bootstrap technique for PLS multi-group analysis (PLS-MGA), as described by Sarstedt et al (2011). \*\*\* $p < .01$ ; \*\* $p < .05$ ; \* $p < .10$  Its reported for path coefficients only.

Table 6 displays the PLS-SEM results for each group and their differences. (Sarstedt, Henseler, et al., 2011). The description of the two segments' are identified in the last stage. Following that, a cross-table analysis of situational customer variables and demographic is used to discover descriptors that are suitable (Ringle et al., 2010). Only gender indicates a reasonable and goodness

of fit with the FIMIX-PLS segmentation results out of all the parameters. As a result, the data set is divided into two categories. Individuals in Group 1 are of the male gender, whereas those in Group 2 are of the female gender.

Table 6 displays the differences of the PLS-SEM results. A double fold bootstrap method too establishes the significance of the differences (Sarstedt, Henseler, et al., 2011). With regard to association between attitude and purchase intention it is relatively higher with female (0.519) compare to male (0.481) with 1 percent of significance in both gender. Though the research has shown relationship between environmental concern and attitude with path relationship values of 0.137 and 0.130 respectively, for female and male gender which is relatively higher for females than males with 5 percent significance. In association between environmental concern and purchase intention it has been found that for females (0.060) it is not at all significant whereas for males (0.127) It shows 1 percent significant level. In association between health concern and attitude it is significant at 1 percent level for both female (0.211) and male (0.189) gender. Again, with regard to association between health concern and purchase intention it is not at all significant for females (0.004) but 1 percent significant for males (0.158).

The path relationship values between perceived behavioural control and attitude for female is (0.104) with one percent significance and for males (0.069) with no significance at all. With regard to path relationship between perceived behavioural control and purchase intention it is significant at 10 percent for females (0.099) and no significance for male (0.021) gender. But it is 1 percent significance for both female (0.301) and male (0.319) in relationship between perception and attitude. In association between perception and purchase intention for both female (0.073) and male (0.118) gender it is 5 percent significance. The path relationship between subjective norms and attitude it is 0.225 for females and 0.303 for males at 1 percent significance. Similarly, in the association

between subjective norms and purchase intention it is 0.235 for females and 0.117 for males at 1 percent significance.

### **Managerial Implications, Future Research and Limitations**

The research has empirically proved the importance of demographic segment gender wise through multi group analysis. With regard to association between health concern and purchase intention it is not at all significant for females but significant for males. As a result, this research offers important managerial consequences to which businesses should pay more attention towards male gender by highlighting the importance of health benefits like nutritional values and healthy life style and also encourage them to purchase the organic vegetables in the mere future by concentrating on health issues. With regard to path relationship between perceived behavioural control and purchase intention it is significant at 10 percent for females and no significance for male gender. In this case, corporate need to see that organic vegetables are continuously all season available in the market places for their customers. Corporate need to bring environmental concern factors in the minds of both genders which encourages them to buy organic vegetables. In association between perception and purchase intention for both female and male gender is significance. As a result, this research project has important management consequences, indicating that businesses should pay more attention on both segments by highlighting on how safe these organic vegetables are when compared with the chemical loaded vegetables and also how it changes their life style. Finally, the relationship between subjective norms and purchase intention are significant for both male and female gender. This could be done by making both gender to understand how buying organic vegetables contributes to the society, environment and community as whole.

First, in future researcher can develop a hierarchy model of PLS-SEM by taking up global items. Hierarchy model has two layers (Lohmoller, 1989) with higher and lower order constructs in the hierarchy model. The Lower order constructs

are used in the measurement model, while the higher order constructs are used in the model's structure. Second, future research can investigate construct loyalty as a consequence of construct purchase intention (Margie Zerlina Kwong & Ivan Candinegara, 2014). Third, future research can explore role of trust as a mediating variable between all exogenous latent variables and purchase intention ( Samai Ayub et al., 2018).

First, the respondents are selected from the outlets located in Karnataka state, India by taking in to consideration only four major districts on the basis of highest literacy level. So, generalization of results to whole India may be inappropriate besides Karnataka state. Second, there is possibility of missing few appropriate respondents who have purchased organic vegetables from other retail outlets.

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