CHAPTER 3

RESEARCH METHODOLOGY

The research process involves identifying, locating, assessing, and analyzing the information needed to support the research question. It is a systematic process that aims on objectives and gathering a whole host of information for analysis so that the researcher can come to a conclusion. The research process is a multiple step method where all the steps are inter connected with the another

Research methodology is the path through which researcher need to conduct the research. It shows the path through which the researcher formulate the problem and objective and present the result from the data obtained during the study period. The research methodology shows how the research outcome at the end will be obtained in line with meeting the objective of the study. This research methodology chapter hence discusses the research design and tools that were used during the research process.

3.1 RESEARCH DESIGN

The research design is projected to provide an suitable conceptual structure for a study. Its gives the outline of the data collection & analysis. Research design is the decision regarding the research approach within which research will be conducted. Research design constitutes framework of methods to collect the data and the techniques used to analyze it. This study employed research design which is descriptive and causal in nature.

3.2 RESEARCH INSTRUMENT DEVELOPMENT

The study formulates to develop an instrument based on factors derived from literature review. Research Instrument phase contains the overall description of the approaches to be adopted in the study. It clearly states the area of the study, sampling techniques, data collection method & statistical tools used for data analysis. Survey technique is administered to collect the data in this study. The Instruments are structured and tested for the validity and reliability. This segment demonstrates the methodology used to test the variables in this study. The validation of the theoretical model is explained in this section.

3.2.1 ITEM GENERATION

The study formulates to develop an instrument based on variables derived from prior literature review. Structured questionnaire is developed to collect data on all the variables taken for the study. The final version of the questionnaire is shown in the Appendix. The questionnaire was organized into two sections. The first section included 10 questions on the respondents' demographic characteristics. The second section contains 46 questions on the constructs like Perceived Usefulness, Perceived Ease of Use, Perceived Trust, Perceived Enjoyment, Online Apparel Purchase Intention, Online Apparel Purchase Behaviour, Online Flow Experience and Online Apparel Repurchase Intention which is included in the proposed model. Original items adapted from previous studies are modified with the wordings to fit the online apparel purchase with E-retailers frame work.

The questionnaire adapted for the Perceived usefulness and Perceived ease of use factors are taken from Fred D. Davis, Richard P. Bagozzi and Paul R. Warshaw., (1989). Instrument used by Paul A. Pavlou (2003), Chen,Y., and Barnes, S., (2007) are used for perceived Trust. The questionnaire containing five items for perceived Enjoyment adapted from Fred D. Davis, Richard P. Bagozzi and Paul R. Warshaw., (1992) and Van der Heijden, H., (2004). Items used for online apparel purchase intention adapted from Van der Heijden, H., Verhagen, T., and Creemers, M., (2001 & 2003), Ji-Won Moon, Young- Gul Kim, (2001), Viswanath Venkatesh, Fred D. Davis., (2000). Four items are used to measure online apparel purchase behavior adapted from Venkatesh, V., Morris, M.G., Davis, G.B., Davis, F.D., (2003). Online flow experience are measured using the items from flow state short scale version adapted from Susan A. Jackson and Robert Eklund.,(2002). Online apparel Repurchase Intention items are adapted from Davis et al (1989), Venkatesh et al (2003) and Chao-Min Chitu, Hsiangchu lai, Meng-Hsiang Hsu and chun-Ming Chang, (2012). A five point Likert scale is used in second section questions with responses ranging from "strongly disagree" (1) to "strongly agree" (5). The instruments used for all the variables are tested for validity and reliability.

3.3 PILOT STUDY

A pilot study is a small-scale structure of a larger study. It help the researcher to understand the feasibility of the proposed study. A pilot study can also be the pre-testing or

experimenting out of a particular research instrument. Pre-testing is the method of validating the survey instrument and its measurement while pilot testing is the trial of survey administration and procedures.

Conducting a pilot study serves many purposes:

(1) It often provides the researcher with approaches and clues to increase the chances of getting clearer findings in the main study. (2) It permits a thorough check of the planned statistical and analytical procedures, giving the researcher a chance to assess their usefulness to the data.(3) Developing and testing adequacy of research instrument.(4) Assessing the feasibility of the study and designing a realistic research protocol

To assess whether the sampling frame and research technique are effective, a pilot study is done. The target group of the study is millennials who are born between 1981 and 1996 (ages 23 to 38 in 2019) . Sampling frame consist of representatives from young millennials (aged 23 to 28 years in 2019) and older millennials (aged 29 to 38 years in 2019). Questionnaire is administrated to 140 respondents drawn from the strata. A Proportionate Stratified Random is taken from each subgroup in order to identify the sample. The reliability of the study was 0.980.

3.4 RELIABILITY

Reliability test is one of the important test of sound measurement. Reliability refers to how consistently a method measures by using the same methods under the same circumstances. In other terms, the extent level to which the outcome results can be reproduced when the research is repeatedly performed under the same conditions. The Cronbach alpha and corrected item total correlation (CITC) are used to measure the reliability of constructs (Hair et al.,2014). Internal reliability refers to whether the items are internally consistent and constituting to the scale are measuring a single concept (Hair et al., 2006). The CITC score assumed to be a good indicator of how well each item contributes to the internal consistency of each construct (cronbach, 1951). The threshold value for acceptable reliability is 0.70, (Hair et al., 2003). Corrected item total correlation (CITC) will be acceptable in above 0.50 score (Lu et al., 2007). The instrument is administered to 140 millennials for the pilot study. This pilot data is used to ensure the reliability of the instrument. The empirical study is analyzed using SPSS.

The various items with their respective CITC scores in the below table.

TABLE NO. 3. 1 Items With CITC Scores Stated For Each Constructs

S.NO	ITEM NO	ITEMS	CITC SCORES
PERCEIVED USEFULNESS			
1	PU1	Using E-retailer's website in my apparel shopping would enable me to accomplish task more quickly	0.722
2	PU2	Using E-retailer's website would improve my Apparel shopping performance	0.791
3	PU3	Using E-retailer's website increases my productivity in apparel shopping	0.815
4	PU4	Using E-retailer's website would enhance my effectiveness in apparel shopping	0.793
5	PU5	Using E-retailer's website would make it easier to do apparel shopping	0.807
6	PU6	I find E-retailer's website useful in my online apparel shopping	0.777
PERCEIVED EASE OF USE			
7	PEOU1	Learning to operate E-retailer's website would be easy for me to do apparel shopping	0.883
8	PEOU2	I would find it easy to get apparels in E-retailer's website	0.880
9	PEOU3	My interaction with E-retailer's website would be clear & understandable while doing Apparel shopping	0.833
10	PEOU4	I would find E - retailer's website to be flexible to interact with	0.842
11	PEOU5	It would be easy for me to become skillful at using E-retailer's website for Apparel shopping	0.850
12	PEOU6	I would find E- retailer's website easy to use for online apparel shopping	0.814

PERCEIVED TRUST			
S.NO	ITEM NO	ITEMS	CITC SCORES
13	PT1	E-retailer's website is trustworthy & honest to do apparel shopping	0.810
14	PT2	E-retailer wants to keep promises & obligation	0.824
15	PT3	The information provided by E-retailer is plentiful & sufficient	0.813
16	PT4	The infrastructure of the E-retailer's website is dependable	0.862
17	PT5	The website of the E-retailer offers Secured personal privacy	0.787
18	PT6	The performance of the E-retailer's website fulfills my expectations	0.707
PERCEIVED ENJOYMENT			
S.NO	ITEM NO	ITEMS	CITC SCORES
19	PE1	Apparel shopping with E-retailer is fun for its own sake	0.831
20	PE2	Apparel shopping with E-retailer is exciting	0.860
21	PE3	Apparel shopping with E-retailer is enjoyable	0.874
22	PE4	Apparel shopping with E-retailer is interesting	0.889
23	PE5	The actual process of using E-retailer's website for apparel purchasing is pleasant	0.837
ONLINE APPAREL PURCHASE INTENTION			
S.NO	ITEM NO	ITEMS	CITC SCORES
24	OAPI1	I have a positive feeling towards E- retailer's website for purchasing Apparels	0.849

25	OAPI2	The thought of buying Apparels from E-retailer is appealing to me	0.866
26	OAPI3	I believe it is good idea to use E-retailer's website for apparel purchase	0.847
27	OAPI4	I intend to purchase apparels using E-retailer's website to get experience about online shopping	0.848
28	OAPI5	It is likely that I will transact with E-retailer in future for apparel shopping	0.755

ONLINE APPAREL PURCHASE BEHAVIOUR

S.NO	ITEM NO	ITEMS	CITC SCORES
29	OAPB1	I often do my online apparel shopping with E-retailer	0.884
30	OAPB2	For every Apparel Purchase, I take much time for shopping in E-retailer's Website	0.837
31	OAPB3	On the average for a year, My frequency of apparel purchase from E-retailer's website	0.874
32	OAPB4	On the average for a week, No of my visits to E-retailer's website	0.837

ONLINE FLOW EXPERIENCE

S.NO	ITEM NO	ITEMS	CITC SCORES
33	OFE1	I felt I am competent enough to meet the high demands in E-retailer's website for Online Apparel Shopping	0.701
34	OFE2	I did things spontaneously & automatically without having to think in online apparel shopping with E-retailer.	0.808
35	OFE3	I had a strong sense of what I want to do in E-retailer's website during apparel shopping	0.815
36	OFE4	I was aware of how well I was performing my apparel shopping in E-retailer's website	0.775
37	OFE5	I was completely focused on the task at hand during my online apparel shopping in E-retailer's website	0.817
38	OFE6	I had a feeling of total control over what I am doing at my online apparel shopping with E-retailer	0.780

S.NO	ITEM NO	ITEMS	CITC SCORES
39	OFE7	The way time passes seems to be different from normal while doing my online apparel shopping at E-retailer's website	0.730
40	OFE8	The experience is extremely rewarding in online apparel shopping with E-retailer	0.726
41	OFE9	I was not concerned with what others may have been thinking of me during my online apparel shopping at E-retailer's website	0.726

		ONLINE APPAREL RE-PURCHASE INTENTION	
S.NO	**ITEM NO**	**ITEMS**	**CITC SCORES**
42	OARI1	I intend to visit E-retailers website frequently in future for apparel shopping	0.784
43	OARI2	I plan to use E-retailers website for apparel shopping in next 6months	0.807
44	OARI3	I will consider E-retailer's website the first choice to buy apparel products in the future	0.820
45	OARI4	I will come back to E-retailer's website to buy apparel products in future	0.829
46	OARI5	I will like to continue using E-retailers website to purchase apparels	0.710

The constructs such as Perceived usefulness, Perceived ease of use and perceived trust are represented by 6 items respectively and the CITC scores for all items were above 0.5. Therefore all the items are retained in the relevant constructs. The constructs perceived enjoyment and online apparel purchase intention are measured by 5 items each and the CITC scores for all items were above 0.5. Thus all the items are retained in these constructs. 4 items are used to identify the construct online apparel purchase behaviour and the CITC scores for all items were above 0.5. So all the items are maintained. Online flow experience construct is identified by 9 items and CITC scores for all these items were above 0.5. As the result all the items are retained in this construct. Online apparel repurchase intention construct is signified by 5 items where their CITC scores were above 0.5. Henceforth all the items are kept for further analysis. The final instrument contains 46 items totally to measure the constructs in this study.

TABLE NO. 3.2 Reliability Analysis of all constructs with cronbach alpha value

S.NO	CONSTRUCTS	NO OF ITEMS	RELIABILITY (CRONBACH ALPHA VALUE)
1	Perceived usefulness	6	0.925
2	Perceived ease of use	6	0.952
3	Perceived trust	6	0.932
4	Perceived enjoyment	5	0.948
5	Online apparel purchase intention	5	0.938
6	Online apparel purchase behaviour	4	0.940
7	Online flow experience	9	0.937
8	Online apparel repurchase intention	5	0.918

The Cronbach's alpha coefficient for over all reliability of the instrument is found to be (a=0.980) which illustrates that the reliability coefficient value is at the acceptance level. The Cronbach's alpha score of all the constructs found to be more than 0.7 as shown in the table 3.2. Hence all these constructs are proved as reliable.

3.5 VALIDITY TEST

Validity is one of the most critical test of sound measurement. The validity is the degree to which the measurement tool measures what it claims to measure. validity is the degree to which result about the relationship among various variables based on the data are correct. There are three main categories used to assess the validity of test: (1) content validity, (2) construct validity and (3) criterion validity.

3.5.1 CONTENT VALIDITY

Content validity evaluates whether a test indicates all aspects of the construct. To generate valid results, the content of a survey or measurement method must cover all appropriate parts of the subject it aims to measure. It is done through extensive literature review. Content validity is evaluated by the domain experts, practitioners and academicians through discussions. The content validity of items against each of the constructs are reviewed by two academicians and by an domain expert. The main focus is to check the significance and relevancy of each constructs along with the clarity of wordings used in all items of the questionnaire. Measurement instruments are modified accordingly on the basis of experts opinion before going to the final administration of questionnaires. The instrument used after content validity has 46 questions finally.

3.5.2 CONSTRUCT VALIDITY FOR THE STUDY VARIABLES

Construct validity evaluates whether a measurement tool really represents the construct which is to be measured. It's central to ascertaining the overall validity of a method. To achieve construct validity, all indicators and measurements are carefully developed based on relevant existing knowledge. The questionnaire included only relevant questions that measure the indicators in construct. The construct validity of each constructs is examined by executing confirmatory factor analysis (CFA) using AMOS. AMOS software is used to assess the relationship between the exogenous and endogenous constructs in this study model. Construct validity ensures that the items of each construct measures the exact construct. The key constructs in this study are perceived usefulness, perceived ease of use, perceived trust, perceived enjoyment, online apparel purchase intention, online apparel purchase behaviour,

online flow experience and online apparel repurchase intention . Construct validity is established in two ways:

(1) Convergent validity and

(2) Discriminant validity.

Convergent validity is a measure to evaluate that the indicators of construct which are associated as proposed theoretically. This validity is attained when all items in a measurement model are statistically significant. In other words ,the indicators of a construct should converge or share a high proportion of variance in common. Discriminant validity is the extent or the level to which a construct is distinctly unique from other constructs. It confirms that scores on a measure are not correlated with measures of variables that are conceptually distinct. This validity specify the measurement model of a construct is free from redundant items.

3.5.3 CONVERGENT VALIDITY OF THE CONSTRUCTS

Convergent validity can be evaluated through three approaches (Hair et al. 2010) (1) standardized factor loading, (2) average variance extracted, and (3) composite reliability. The acceptable cut-off value for standardized factor loading is greater than 0.5 ; for average variance extracted is greater than 0.5; and for composite reliability is greater than 0.7. In the study convergent validity is used in order to check the respective items are measuring their particular constructs and to determine whether it is valid for intended use.

TABLE NO. 3.3 Convergent validity of Perceived Usefulness

Items	Standard Estimates	Critical Ratio (CR)	R ^2	P Value
Using E-retailer's website in my apparel shopping would enable me to accomplish task more quickly	0.828		0.685	***
Using E-retailer's website would improve my Apparel shopping performance	0.848	30.974	0.718	***
Using E-retailer's website increases my productivity in apparel shopping	0.881	32.958	0.777	***
Using E-retailer's website would enhance my effectiveness in apparel shopping	0.858	31.546	0.735	***

Using E-retailer's website would make it easier to do apparel shopping	0.856	31.471	0.733	***
I find E-retailer's website useful in my online apparel shopping	0.799	28.299	0.638	***
Composite Reliability	0.94			
Average Variance Extracted	0.72			

In Table 3.3 indicates the construct validity of Perceived construct which has 6 items namely,PU1, PU2, PU3, PU4, PU5 and PU6. Standard Estimates (Standardized Factor loading) are greater than 0.5, composite reliability is more than 0.7 and average variance extracted is higher than 0.5 for all the items in the construct perceived usefulness. All the values were above the acceptable, thereby exhibiting adequate convergent validity. The path validity of each item towards the construct is specified by Critical Ratio (CR), which has to be more than 1.96 to be significant. Here all the items confirms that CR values are above 1.96. Therefore, validity of path of each item is assured. Coefficient of determination (R^2) value above 25% are considered Substantial to examine the strength of association and impact of items on parent construct. R^2 values are above 0.25 for all the items in perceived usefulness depicting the items leading significant to the construct. The P value is significant for all items in perceived construct, which entailed that each item is contributing to explain its construct. Fig 3.1 shows the standard estimates of items illustrated in the leading arrows and squared multiple correlations are represented.
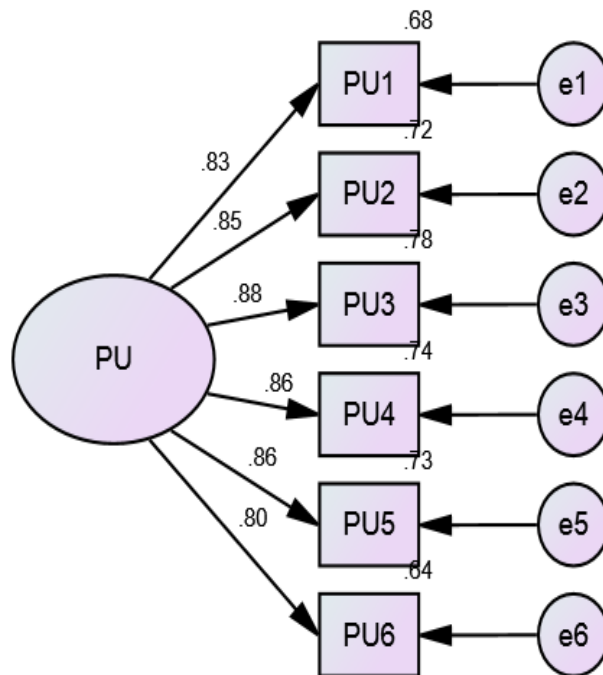
Fig: 3.1 Construct validity for Perceived Usefulness

TABLE NO. 3.4 Convergent validity of Perceived Ease of Use

Items	Standard Estimates	Critical Ratio (CR)	R ^2	P Value
Learning to operate E-retailer's website would be easy for me to do apparel shopping	.853		0.728	***
I would find it easy to get apparels in E-retailer's website	.858	33.404	0.737	***
My interaction with E-retailer's website would be clear & understandable while doing Apparel shopping	.851	32.912	0.724	***
I would find E - retailer's website to be flexible to interact with	.871	34.278	0.758	***
It would be easy for me to become skillful at using E-retailer's website for Apparel shopping	.874	34.504	0.764	***
I would find E- retailer's website easy to use for online apparel shopping	.778	28.369	0.606	***
Composite Reliability	0.94			
Average Variance Extracted	0.72			

In Table 3.4 indicates the construct validity of perceived ease of use construct which has 6 items namely, PE0U1, PEOU2, PEOU3, PEOU4, PEOU5 and PEOU6. Standard Estimates (Standardized Factor loading) are greater than 0.5, composite reliability is more than 0.7 and average variance extracted is higher than 0.5 for all the items in the construct perceived ease of use. All the values were above the acceptable, thereby satisfying adequate convergent validity. The path validity of each item towards the construct is indicated by Critical Ratio (CR), which are above 1.96. Therefore, validity of path of each item in this construct is confirmed. Coefficient of determination (R^2) value are above 0.25 for all the items in perceived ease of use illustrating the items leading significant to the construct. The P value is significant for all items in perceived ease of use construct, which indicates each item is contributing to explain its

construct. Fig 3.2 shows the standard estimates of items portrayed in the leading arrows and squared multiple correlations are described.
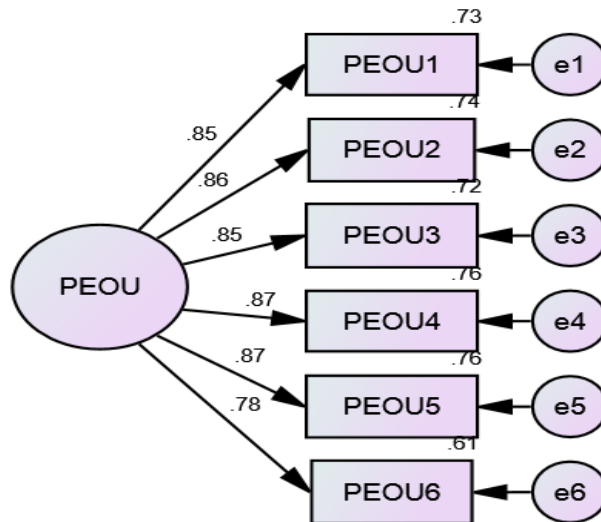

Fig: 3.2 Construct validity for Perceived Ease of Use

TABLE NO. 3.5 Convergent validity of Perceived Trust

Items	Standard Estimates	Critical Ratio (CR)	R ^2	P Value
E-retailer's website is trustworthy & honest to do apparel shopping	.819		0.670	***
E-retailer wants to keep promises & obligation	.855	30.774	0.732	***
The information provided by E-retailer is plentiful & sufficient	.874	31.829	0.765	***
The infrastructure of the E-retailer's website is dependable	.886	32.474	0.785	***
The website of the E-retailer offers Secured personal privacy	.826	29.205	0.682	***
The performance of the E-retailer's website fulfills my expectations	.717	23.966	0.515	***
Composite Reliability	0.93			

Average Variance Extracted	0.69

In Table 3.5 indicates the construct validity of perceived trust construct which has 6 items namely, PT1, PT2, PT3, PT4, PT5 and PT6. Standard Estimates (Standardized Factor loading) are greater than 0.5, composite reliability is more than 0.7 and average variance extracted is higher than 0.5 for all the items in the construct perceived trust, thereby satisfying adequate convergent validity. The path validity of each item towards the construct is indicated by Critical Ratio (CR), which are above 1.96. Hence, path validity of each item in this construct is confirmed. Coefficient of determination (R^2) value for all the items are above 0.25 in perceived trust confirming the items leading significant to the construct. The P value is significant for all items in perceived trust, which shows each item is contributing to explain its construct. Fig 3.3 shows the standard estimates of items indicated in the leading arrows and squared multiple correlations are described.
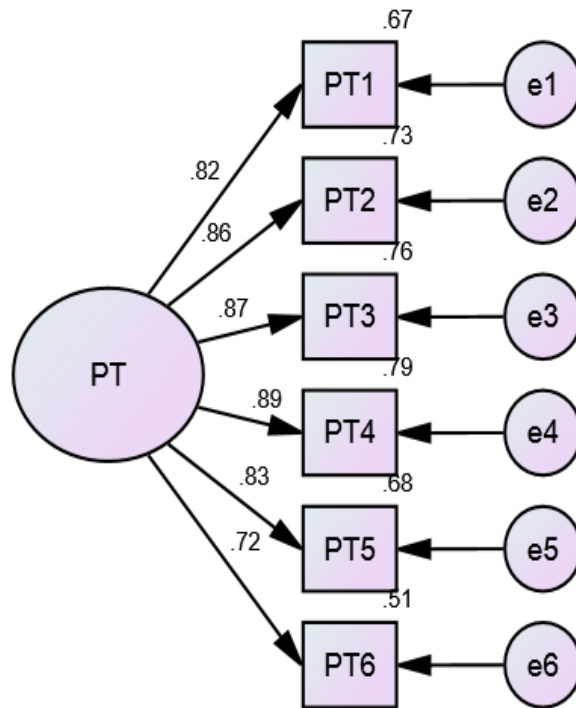

Fig: 3.3 Construct validity for Perceived Trust

TABLE NO.3.6 Convergent validity of Perceived Enjoyment

Items	Standard Estimates	Critical Ratio (CR)	R ^2	P Value
Apparel shopping with E-retailer is fun for its own sake	.859		0.739	***
Apparel shopping with E-retailer is exciting	.892	36.641	0.796	***
Apparel shopping with E-retailer is enjoyable	.900	37.277	0.810	***
Apparel shopping with E-retailer is interesting	.900	37.250	0.810	***
The actual process of using E-retailer's website for apparel purchasing is pleasant	.839	32.663	0.704	***
Composite Reliability	0.94			
Average Variance Extracted	0.77			

In Table 3.6 indicates the construct validity of perceived trust construct which has 5 items namely, PE1, PE2, PE3, PE4 and PE5. Standard Estimates (Standardized Factor loading) are greater than 0.5, composite reliability is more than 0.7 and average variance extracted is higher than 0.5 for all the items in the construct perceived enjoyment, thereby satisfying adequate convergent validity for construct perceived enjoyment. The path validity of each item towards the construct is specified by Critical Ratio (CR), which has to be more than 1.96 to be significant. Here all the items confirms that CR values are above 1.96. Therefore, validity of path of each item is assured for perceived enjoyment. Coefficient of determination (R^2) value above 25% are considered Substantial to examine the strength of association and impact of items on parent construct. R^2 values are above 0.25 for all the items in perceived enjoyment depicting the items leading significant to the construct. The P value is significant for all items in perceived enjoyment which shows each item is contributing to explain its parent construct. Fig 3.4 shows

the standard estimates of items indicated in the leading arrows and squared multiple correlations are described.
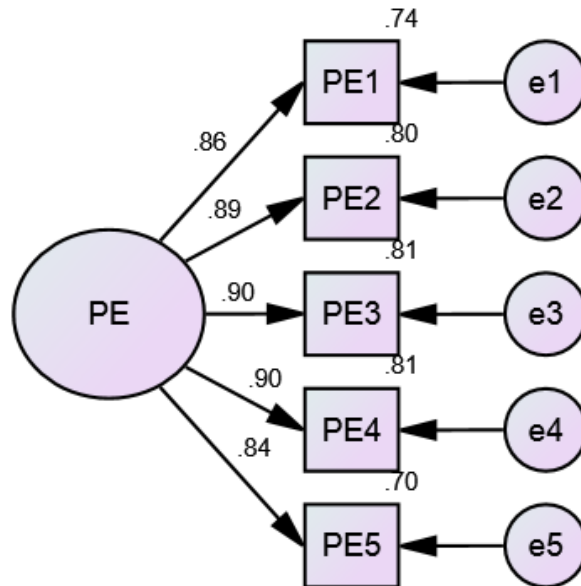

Fig: 3.4 Construct validity for Perceived Enjoyment

TABLE NO.3.7 Convergent validity of Online Apparel Purchase Intention

Items	Standard Estimates	Critical Ratio (CR)	R ^2	P Value
I have a positive feeling towards E- retailer's website for purchasing Apparels	.812		0.659	***
The thought of buying Apparels from E-retailer is appealing to me	.875	31.061	0.765	***
I believe it is good idea to use E-retailer's website for apparel purchase	.873	30.959	0.761	***
I intend to purchase apparels using E-retailer's website to get experience about online shopping	.872	30.934	0.761	***
It is likely that I will transact with E-retailer in future for apparel shopping	.786	26.677	0.617	***
Composite Reliability	0.93			

		0.71
Average Variance Extracted		

        In Table 3.7 indicates the construct validity of online apparel purchase intention construct which has 5 items namely, OAPI1, OAPI2, OAPI3, OAPI4, and OAPI5. Standard Estimates are greater than 0.5, composite reliability is more than 0.7 and average variance extracted is higher than 0.5 for all the items in the construct online apparel purchase intention, thereby satisfying adequate convergent validity. The path validity of each item towards the construct is indicated by Critical Ratio (CR), which are above 1.96. Hence, path validity of each item in this construct is confirmed. Coefficient of determination (R^2) value for all the items are above 0.25 in online apparel purchase intention confirming the items leading significant to the construct. The P value is significant for all item, which shows each item is contributing to explain its construct online apparel purchase intention. Fig 3.5 shows the standard estimates for items in online apparel purchase intention which are indicated in the leading arrows and squared multiple correlations are described.
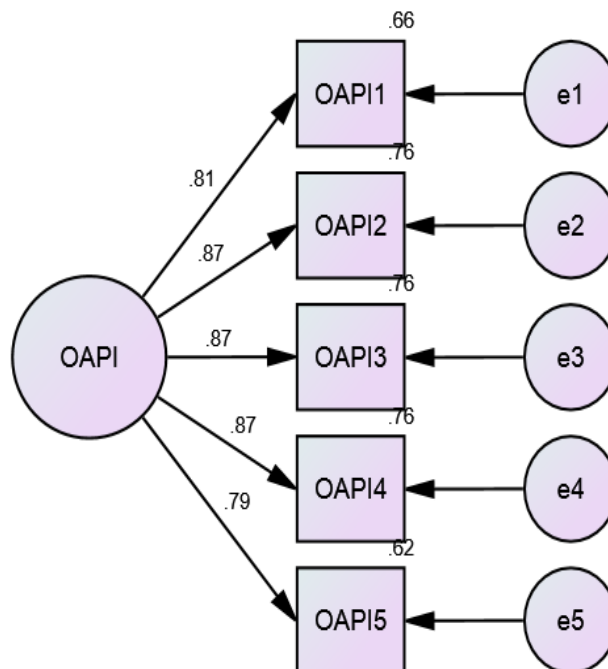
Fig: 3.5 Construct validity for Online Apparel Purchase Intention

TABLE NO. 3.8 Convergent validity of Online Apparel Purchase Behaviour

Items	Standard Estimates	Critical Ratio (CR)	R ^2	P Value
I often do my online apparel shopping with E-retailer	.878		0.771	***
For every Apparel Purchase, I take much time for shopping in E-retailer's Website	.855	34.131	0.732	***
On the average for a year, My frequency of apparel purchase from E-retailer's website	.888	36.541	0.789	***
On the average for a week, No of my visits to E-retailer's website	.854	34.029	0.729	***
Composite Reliability	0.93			
Average Variance Extracted	0.76			

In Table 3.8 indicates the construct validity of online apparel purchase behaviour construct which has 4 items namely, OAPB1, OAPB2, OAPB3 and OAPB4. Standard Estimates are greater than 0.5, composite reliability is more than 0.7 and average variance extracted is higher than 0.5 for all the items in the construct online apparel purchase behaviour, thereby satisfying adequate convergent validity. The path validity of each item towards the construct is indicated by Critical Ratio (CR), which are above 1.96. Hence, path validity of each item in this construct is confirmed. Coefficient of determination (R^2) value for all the items are above 0.25 in online apparel purchase behaviour confirming the items leading significant to the construct. The P value is significant for all item, which shows each item is contributing to explain its construct online apparel purchase behaviour. Fig 3.6 shows the standard estimates for items in

online apparel purchase behaviour which are indicated in the leading arrows and squared multiple correlations are described.
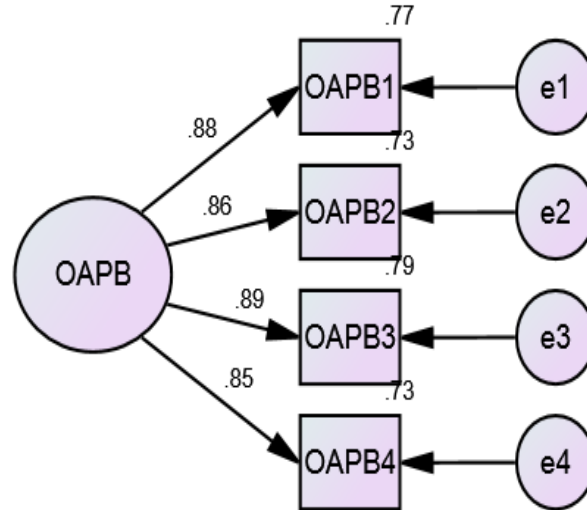

Fig: 3.6 Construct validity for Online Apparel Purchase Behaviour

TABLE NO.3.9 Convergent validity of Online Flow experience

Items	Standard Estimates	Critical Ratio (CR)	R ^2	P Value
I felt I am competent enough to meet the high demands in E-retailer's website for Online Apparel Shopping	.753		0.567	***
I did things spontaneously & automatically without having to think in online apparel shopping with E-retailer.	.821	25.880	0.675	***
I had a strong sense of what I want to do in E-retailer's website during apparel shopping	.835	26.389	0.698	***
I was aware of how well I was performing my apparel shopping in E-retailer's website	.818	25.762	0.669	***

Items	Standard Estimates	Critical Ratio (CR)	R ^2	P Value
I was completely focused on the task at hand during my online apparel shopping in E-retailer's website	.838	26.486	0.702	***
I had a feeling of total control over what I am doing at my online apparel shopping with E-retailer	.837	26.440	0.700	***
The way time passes seems to be different from normal while doing my online apparel shopping at E-retailer's website	.807	25.365	0.652	***
The experience is extremely rewarding in online apparel shopping with E-retailer	.798	25.025	0.637	***
I was not concerned with what others may have been thinking of me during my online apparel shopping at E-retailer's website	.749	23.254	0.561	***
Composite Reliability	0.94			
Average Variance Extracted	0.65			

In Table 3.9 indicates the construct validity of online flow experience construct which has 9 items namely, OFE1, OFE2, OFE3, OFE4, OFE5, OFE6, OFE7, OFE8 and OFE9. Standard Estimates (Standardized Factor loading) are greater than 0.5, composite reliability is more than 0.7 and average variance extracted is higher than 0.5 for all the items in the construct online flow experience. All the values were above the recommended, thereby exhibiting adequate convergent validity. The path validity of each item towards the construct is specified by Critical Ratio (CR), which has to be more than 1.96 to be significant. Here all the items confirms that CR values are above 1.96. Therefore, validity of path of each item is assured. Coefficient of determination (R^2) value above 25% are considered Substantial to examine the strength of association and impact of items on parent construct. R^2 values are above 0.25 for all the items of online flow experience depicting the items leading significant to the construct. The P value is significant for all items in this construct, which entailed that each item is contributing to explain

its construct. Fig 3.7 shows the standard estimates of items illustrated in the leading arrows and squared multiple correlations are represented.
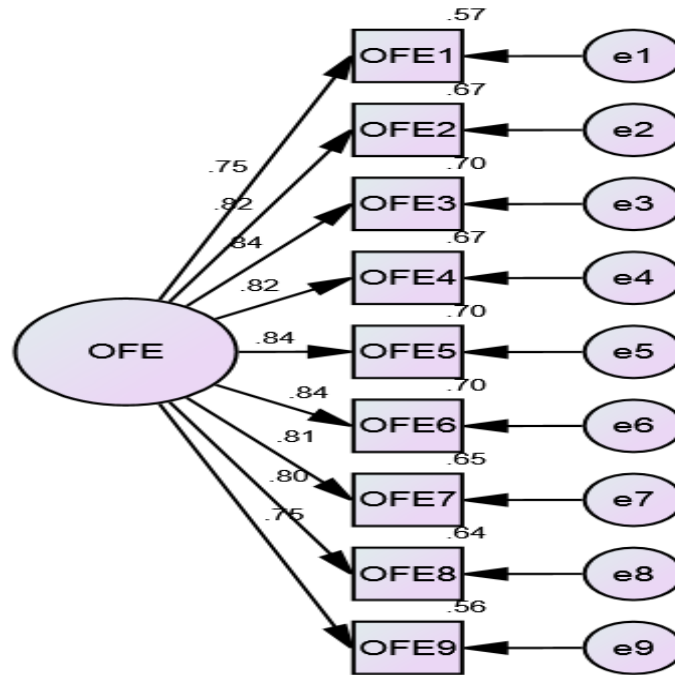

Fig: 3.7 construct validity for Online Flow Experience

TABLE NO. 3.10 Convergent validity of Online Apparel Re-purchase Intention

Items	Standard Estimates	Critical Ratio (CR)	R^2	P Value
I intend to visit E-retailers website frequently in future for apparel shopping	.842		0.709	***
I plan to use E-retailers website for apparel shopping in next 6months	.845	31.195	0.715	***
I will consider E-retailer's website the first choice to buy apparel products in the future	.859	32.003	0.738	***
I will come back to E-retailer's website to buy apparel products in future	.850	31.447	0.722	***
I will like to continue using E-retailers website to purchase apparels	.824	29.983	0.680	***
Composite Reliability	0.93			

Average Variance Extracted	0.71

In Table 3.10 indicates the construct validity of online apparel re-purchase intention construct which has 5 items namely, OARI1, OARI2, OARI3, OARI4 and OARI5. Standard Estimates are greater than 0.5, composite reliability is more than 0.7 and average variance extracted is higher than 0.5 for all the items in the construct online apparel re-purchase intention, thereby satisfying adequate convergent validity. The path validity of each item towards the construct is indicated by Critical Ratio (CR), which are above 1.96. Hence, path validity of each item in this construct is confirmed. Coefficient of determination (R^2) value for all the items are above 0.25 in online apparel re-purchase intention confirming the items leading significant to the construct. The P value is significant for all item, which shows each item is contributing to explain its construct online apparel re-purchase intention. Fig 3.8 shows the standard estimates for items in online apparel repurchase intention which are indicated in the leading arrows and squared multiple correlations are described.
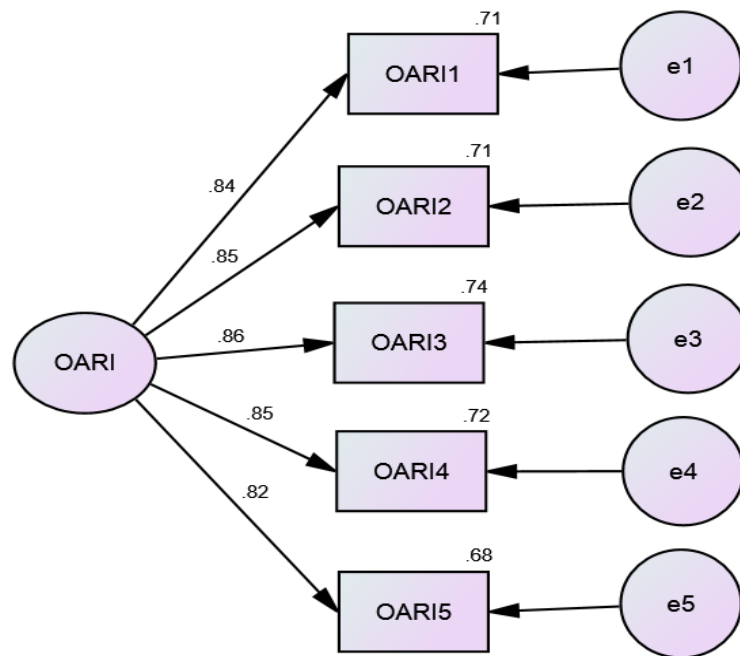

Fig: 3.8 Construct validity for Online Apparel Re-purchase Intention

3.5.4 DISCRIMINANT VALIDITY OF THE CONSTRUCTS

Discriminant validity can be evaluated through two approaches (Hair et al. 2010)

(1) Maximum shared Variance (MSV) less than Average variance Extracted (AVE).

(2) The Square root of AVEs greater than inter-construct correlations.

Discriminant validity is analyzed using James Gaskin Excel Stats Tools Package by pasting the Standardized regression weights and correlation tables from Amos CFA output.

TABLE NO. 3.11 Discriminant validity of the constructs

	AVE	MSV	OAPB	PU	PEOU	PT	PE	OAPI	OARI	OFE
OAPB	0.755	0.584	**0.869**							
PU	0.715	0.484	0.345	**0.845**						
PEOU	0.720	0.484	0.415	0.696	**0.848**					
PT	0.694	0.343	0.497	0.503	0.568	**0.833**				
PE	0.772	0.359	0.440	0.583	0.599	0.586	**0.879**			
OAPI	0.714	0.507	0.717	0.445	0.505	0.556	0.563	**0.845**		
OARI	0.712	0.643	0.723	0.404	0.424	0.474	0.436	0.609	**0.844**	
OFE	0.652	0.643	0.764	0.406	0.468	0.550	0.476	0.673	0.802	**0.808**

In the table 3.11 , MSV is less than AVE and the square root of AVEs (diagonal bold values) are greater than inter - construct correlation (off the diagonal values). This satisfies the discriminant validity for the study constructs perceived usefulness (PU), perceived ease of use (PEOU), perceived trust (PT), perceived enjoyment (PE), online apparel purchase intention (OAPI), online apparel purchase behaviour (OAPB) and online apparel re-purchase intention (OARI).

3.5.5 CRITERION VALIDITY

Criterion related validity is the extent to which a measurement instrument can envisage a variable that is selected as a criterion. It is concerned with identifying the presence or absence of one or more criterion measured to signify constructs of interest. Criterion validity was tested by examining the R^2 value arrived for the construct whose value illustrate the extent of representation by the independent variables. Coefficient of determination (R2) is the percentage of the total variation in the dependent variable (Endogenous construct) elucidated by the independent variable (Exogenous constructs). Coefficient of determination (R^2) greater than

25% are considered significant (Heiman 1998). Coefficient of determination (R^2) is calculated by performing model estimation using AMOS software. The R^2 value is checked to confirm that the constructs in the study have good criterion validity.
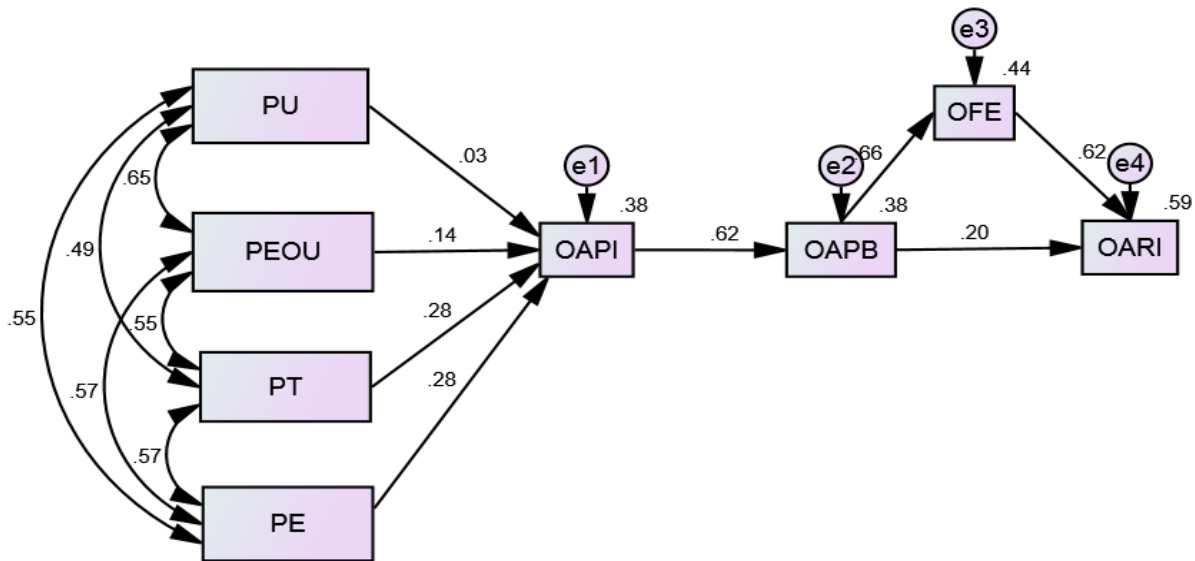
Note: Perceived usefulness (PU), Perceived ease of use (PEOU), Perceived trust (PT), Perceived enjoyment (PE), online apparel purchase intention (OAPI), online apparel purchase behavior (OAPB) and online apparel re-purchase intention (OARI).

Fig 3.9 SEM model depicting the relationship between predictors and online apparel purchase behavior and online apparel re-purchase intention

The results as in fig 3.9 shows that squared multiple correlations (R^2) values of all dependant variables in the study are above 0.25 which are satisfactory values depicting that the constructs leading to them do have significant strength of association and criterion validity. Table3.12 shows the R^2 values of the endogenous constructs Online Apparel Purchase Behavior and Online Apparel Repurchase Intention are 0.378 and 0.593 respectively. Thus these constructs have an influencing rate greater than 25% which is statistically valid and significant. The coefficient of determination (R^2) of mediation variables Online Apparel Purchase Intention and Online Flow Experience are 0.381 and 0.438 respectively. Thus these constructs are showing validity and statistically significance. Therefore criterion validity is ensured for all endogenous constructs in the study.

TABLE NO. 3.12 Criterion Validity of the constructs

Constructs	R^2 Value
Online Apparel Purchase Intention	.381
Online Apparel Purchase Behaviour	.378
Online Flow Experience	.438
Online Apparel Repurchase Intention	.593

3.6 AREA OF THE STUDY

The area of the study is constricted to Coimbatore city and core underlined on millennials. The uniqueness of Coimbatore city is its expertise in textiles which has woven into the tag of " Manchester of South India". Coimbatore is the natural choice of textile industry because of its cotton production and Climate. Coimbatore is famed for the quality of cotton and dyed fabric specially the "kovai cora cotton" is recognized as geographical indications by government of India. Coimbatore is the major hub of textile mills, apparel manufacturing and exports includes knitwear, woven apparel and home textiles. Coimbatore is the second largest city in Tamil Nadu state and a fast growing Tier-II city in India . City has an average literacy rate of 89.23% higher than the national avearge. Coimbatore is ranked as one of the most competitive Indian cities in terms of business environment. Coimbatore is second largest in software production in Tamil Nadu state. TIDEL park and other IT parks supported the city in information technology growth.

Coimbatore is largest non-metro city for e-commerce in South India due to growing online shopping adaption in the city. This study is of both descriptive and causal in nature. As a causal study, this work is concentrated on identifying how the factors; Perceived Usefulness, Perceived Ease of Use, Perceived Trust, Perceived Enjoyment, Online Apparel Purchase Intention have impact on Online Apparel Purchase Behaviour. Consequently how Online Apparel Purchase Behaviour and Online Flow Experience have influence on Online Apparel

Repurchase Intention of the millennial. Thus establishing a casual relationship among the study variables. The study also describes various perceptional and online experience aspects of the millennials affecting their online purchase behavior and subsequently their Re-purchase intention. The study is conducted from January 2019 to January 2020.

3.7 SAMPLING TECHNIQUE

The population of the study consist of millennials in Coimbatore city. The total population is 9,18,705 approximately. The population comprises of millennials aged 23 to 38 years in 2019 (born between the year 1981 and 1996) .The population is divided into strata (or subgroups) as young millennials (aged 23 to 28 years in 2019) and older millennials (aged 29 to 38 years in 2019). A Proportionate Stratified Random Sampling is taken from each subgroup in order to identify the population. Population Data was collected from the report "District/ Age group wise Total population by Residence and Sex in Tamil Nadu" published by Office of the Registrar General and census commissioner, India. According to the report, Population is almost proportionate in three age groups i.e. 23-28 Years, 29-33 years and 34-38 years. Therefore sample sizes are ideally selected from all the three age groups equally in the study. In addition gender distribution is also 1:1 proportion in Coimbatore city. Hence the study is undertaken potentially with both the gender in equal quotient.

According to Krejcie and Morgan's (1970) table, the sample size for the population of 9,18,705 is 663 (99% confidence interval and 5% Margin of Error) .Sample size should be planned considering the variety of statistical tests like Regression, Confirmatory Factor Analysis, Structural Equation Modeling etc and also based on AIPE (Accuracy in Parameter Estimates). Sufficient Sample size should be taken to measure the parameter estimates for each sub-group (Strata) in the study. To represent true population value with 95% confidence interval for the significance co-efficient to within 0.05 requires more than 850 respondents to achieve accuracy in parameter estimation (Cohen 1988, 1992). In socio-psychology and behavioral studies, adequate Sample size should be taken to get statistical power and accuracy in analysis. Therefore in this study, a total of 1000 samples were determined in which 894 respondents been considered as fruitful and taken for further analysis.

3.8 DATA COLLECTION METHOD

The study made use of primary data which has been collected through a questionnaire. Totally 1000 questionnaires were distributed out of which only 894 respondents were found to be fruitful and taken for the analysis .The survey questionnaire is administrated to millennials with the background of online purchase experience of apparel from top E-retailers.

The variables included in the study tend to assess perception & online purchase behavior along the online flow experience. Participating in the study required the ability to state and report perceptions and Online flow experience from their purchase behaviour. To answer the questions in this study illustrating the range of perception, purchase behaviour and online flow experience demands previous online purchase activity. Participants with an adequate amount of online shopping experience will be hence qualifying as post-adoption customers for answering Re- purchase behavioural intention. Therefore the millennials of coimbatore with the online apparel purchase experience in the past 12 months with E-retailers are invited to participate in the survey.

3.9 TOOLS USED FOR DATA ANALYSIS

This research adopted the Statistical Package for the Social Sciences (SPSS) version 22 and Analysis of a moment structures (AMOS) version 23 statistical softwares to perform the data analysis and hypotheses verification. The statistical tools used in the study for analysis, includes Descriptive Statistics, Percentage Analysis, ANOVA, Correlation , Regression and Structural Equation Modeling using Confirmatory Factor Analysis. Measurement Model is conducted using CFA via Amos. It is also used to assess the convergent & criterion validity of the constructs used. Discriminant validity is analyzed using James Gaskin Excel Stats Tools Package by pasting the Standardized regression weights and correlation tables from Amos CFA output. Mediation model is analyzed using the Bootstrapping method in Process Macro Version 3.5 for SPSS (Andrew F. Hayes 2018). Reliability of the scale is analyzed in SPSS. Also Analysis such as Descriptive Statistics, Percentage Analysis, ANOVA, Correlation and Regression are performed in SPSS. All the statistical tools used in this study are briefly explained subsequently.

DESCRIPTIVE STATISTICS

Descriptive statistics are concise coefficients that summarize a specified data or population. Descriptive statistics are sub-divided into two types of measures namely measures of central tendency and measures of variability/ dispersion (spread). Measures of central tendency encompass three measures namely the mean, median and mode. Measures of variability consist of the standard deviation and the range (minimum and maximum values of the variables). The central tendency of a distribution is an evaluation of the center of the values distribution. The Mean is the mostly used method which is computed by summing all the values and dividing it by the number of values present. Dispersion explain the spread of the values around the central tendency. **Standard Deviation (SD)** provides a more accurate and the detailed estimate of dispersion. SD illustrates the association that set of scores has to the mean of the sample. The standard deviation allows to conclude whether the distribution of scores is normal. Measures of Spread otherwise called as measures of variability aids in analyzing the distribution or spread out of a data set. The shape of the distribution can be explained through Skewness and Kurtosis. They are also called as the estimates of dispersion. Skewness and Kurtosis are used to test the normality of the distribution as it is indicating the symmetrical and proportional distribution of the dataset.

ANOVA

The analysis of variance (ANOVA) is statistical technique used to confirm whether there are any significant differences between the means of two or more independent groups. From the result of the ANOVA, the F statistic (also called the F-ratio), allows to determine the variability between samples and within samples for the multiple groups of data. If no statistical difference exists between the tested groups known as null hypothesis, then the result of F-ratio will be close or equal to 1. ANOVA is similar to multiple two-sample t-tests. However, it results in less type I errors and is suitable for a range of issues. ANOVA groups differences by comparing the means of each group and comprise spreading out the variance into diverse sources. To determine whether any difference exist between means, Compare the p- value to significance level to assess the null hypothesis. The null hypothesis in ANOVA states that the population means are equal. Significance level (denoted by alpha) of 0.05 signify that 5% risk exist in concluding when there is no true difference. ANOVA is employed between two groups and within each group. To determine which specific groups differed from each other, a post hoc test is done.

CORRELATION

A correlation is a statistical measure that describes the degree of relationship or linear association between two metric variables. Correlation illustrates the strength of a relationship between two variables which is expressed numerically by the correlation coefficient, denoted by r. The correlation coefficient's values ranges between -1.0 and 1.0. A perfect positive correlation denotes that the correlation coefficient is exactly 1. This implies that as one variable movement is parallel with the other variable movement. A perfect negative correlation means that two variables move in opposite directions, while a zero correlation implies no linear relationship. Correlation is represented in table format called Correlation Matrix. There are two triangles in correlation matrix and are always mirror images of each other. Hence a correlation matrix is always a symmetric matrix. There is no rule for determining the size of correlation which can be considered as strong, moderate or weak. Generally correlations above 0.75 considered as relatively strong; correlations between 0.45 and 0.75 as moderate, and those below 0.45 are considered weak.

REGRESSION

Regression analysis is a form of analytical modeling technique which examines the significant relationship between a dependent (target) and independent variables (predictor). This technique is used to find the causal effect relationship between the variables. It signifies the impact strength of multiple independent variables on a dependent variable. Linear Regression is one of the most widely used modeling technique. In this modeling technique, the dependent variable is continuous, independent variables can be continuous or discrete, and nature of regression line is linear. Linear Regression ascertains a relationship between dependent variable (Y) and one or more independent variables (X) using straight regression line. Regression analysis gives a model summary with the multiple correlation coefficient (R), the coefficient of determination (R^2) and adjusted R^2 which can be used to establish how well a regression model fits the data. The multiple correlation coefficient R is considered as one of the quality measure for the prediction of the dependent variable. The R square value (R^2) defines the

proportion of variance in the dependent variable explained by the independent variables. Adjusted R^2 demonstrates how well the data points fit a regression line showing the percentage of variation explained only by the independent variables that actually affect the dependent variable.

SEM (STRUCTURAL EQUATION MODELING)

Structural Equation Modelling (SEM) is a set of statistical techniques that permit relationship testing between many Independent Variables (IVs)and Dependent Variables (DVs) (Tabachnick and fidell, 2007). The Independent and dependant variables cab be either continuous or discrete. In SEM both IVs and DVs can be analyzed either as the factors or as the measured variables. The technique verifies whether the proposed model provides a logical best fit to the data and the contribution of each variables. SEM checks the structure of interrelationships expressed in a series of equations which is similar to that of multiple regressions. SEM provides estimates for a series of separate but interdependent while multiple regression equations simultaneously by specifying the structural model (Hair, Bush & Ortinau, 2006).

In SEM analysis, variables are classified into observed and unobserved variables. Observed variables can be measured directly as they are represented by items or questions. Unobserved or Latent variable is measured indirectly through multiple observed variables which are also called as indicators (Hair et al. 2006). In SEM, all the independent variables are referred to as exogenous and all the dependent variables are called as endogenous variables. The exogenous variables are determined by the factors outside the model and hence they do not receive path (one headed arrow) from any other variable. In contrast, endogenous constructs are established by factors inside the model which are illustrated by inward path from other variables (Hair et al. 2006).

In SEM there are two types of models, measurement and structural. The measurement model analyze the relationships between the observable variables and the unobservable variables in the model. Hence, measurement model helps in assessing the relationships between constructs. The first stage in SEM analysis is model specification via Confirmatory Factor Analysis (CFA) (Tabachnick & Fidell, 2007). Hence, the measurement model is evaluated and re-specified with

the aim of testing the model. The second stage in SEM analysis is testing the structural model. This model comprises both the exogenous and endogenous variables and it highlights on the model fit. This structural model is conceptual representation of the relationships between constructs based upon an previously established theory. Assessment of model validity is most important in SEM analysis. A model is valid when it fits the empirical data and this is verified with the aid of Goodness-of-Fit (GOF) indices.

THE BOOTSTRAP METHOD

The bootstrap method developed by Preacher & Hayes (2004, 2008) is a non-parametric re-sampling method to test mediation . The core aspect of this test is that it does not rely on the assumption of normality and therefore fit for smaller sample sizes (Hair et al., 2014). Mediation analysis gives better understanding of the relationship between an independent variable and a dependent variable through mediator when these variables do not have an obvious direct connection. Mediation can be tested using SPSS Process Macro (Version 3.5) developed by Andrew F. Hayes. In order to confirm a mediating variable and its significance in the model, researcher must show that while the mediator is caused by the initial Independent variable and is a cause of the Dependent variable, the initial Independent variable loses its significance when the mediator is included in the model. The following procedures are to be executed

1. Confirm the significance of the relationship between the primary Independent and Dependent variable

2. Confirm the significance of the relationship between the primary Independent variable and the mediator

3. Confirm the significance of relationship between the mediator and the Dependent variable in the presence of the Independent variable

4. Confirm the insignificance of the relationship between the primary Independent variable and the Dependent variable in the presence of the mediator . Steps 3 and 4 will engage the same regression model. In this case it can be reported as full mediation effect.

In contrast, if there remains a significant relationship between the primary Independent variable and the Dependent variable after mediator controlling , it can be reported as partial mediation.