

Exploratory Factor Analysis on Bancassurance Attributes



I. Narsis

Abstract: *Background: The rising market competition and demand for innovative and need based products by customers have compelled the banking industry to look for alternative cost-effective product and services. The integration of insurance with banks will contribute more to the economy. Purpose: Bancassurance has a tremendous acceptance and growth across the nation. It is the need of banks to know their customer perceived value over their various bancassurance products and based upon the outcomes, the bancassurance product may be adjust to the needs of beneficiaries. Design/Methodology/approach: The study is an empirical and descriptive in nature. The primary data is collected for the study through a well-designed structural questionnaire. Overall, 500 questionnaires were distributed and received from the sample respondent under the census method. Findings: It is observed that the impact of reliance factor on Core factor, Comfort factor and Support factor were high. Whereas, the impact of Benefit factor on Value, Core, Support and Comfort factor was low... Conclusion: Based on the result and discussion, it is concluded that the management and administrators to pay special attention on Benefit measures of bancassurance product and service such as, "Assured return" and "Provide a special benefit" to satisfy the beneficiary.*

Keywords: Bancassurance - Exploratory Factorial Analysis - Beneficiary Perceived Value

I. INTRODUCTION

Bancassurance is a French term referring to the selling of insurance through a bank's established distribution channels. The usage of the word picked up as banks and insurance companies merged and banks sought to provide insurance, especially in markets that have been liberalized recently. Bancassurance is the selling of insurance and banking products through the same channel, most commonly through bank branches. There are two specific benefit enjoyed both banks and insurance companies. Banks are now a major distribution channels for insurers and insurance sales a significant source of profits for banks.

The latter partly being because banks can often sell insurance at better prices (i.e., higher premiums) than many other channels, and they have low costs as they use the infrastructure (branches and systems) that they use for banking.

II. BANCASSURANCE IN INDIA

Government of India Notification dated August 3, 2000, specified 'Insurance' as a permissible form of business that could be undertaken by banks under Section 6(1) (o) of the Banking Regulation Act, 1949.

Then onwards, banks are allowed to enter the insurance business as per the guidelines and after obtaining prior approval of Reserve Bank of India. Reserve Bank of India (RBI) has recognized "bancassurance" wherein banks are allowed to provide physical infrastructure within their select branch premises to insurance companies for selling their insurance products to the banks' customers with adequate disclosure and transparency, and in turn earn referral fees on the basis of premium collected. This would utilize the resources in the banking sector in a more profitable manner.

III. PURPOSE OF THE STUDY

Banks directly or through some mechanism they approach customer to sell its product. Any bancassurance product developed on the basic of understanding of their customer need, financial position and their future financial requirement. it is not alone for the banks to supply a suitable product. It is noted that customer is a king of its business. Their taste and preference have changed accordance with various internal and external environment factors. Hence, it is the need of banks periodically to review their customer perceived value over their various bancassurance product and services.

The bancassurance product and services may be restructuring based upon the outcomes. This study analyzes the customer perceived value over the bancassurance product by overall and through the study to understand the intention of customer to purchase of policy through banks in future.

IV. LITERATURE REVIEW

A broader definition of bancassurance was provided by Swiss Re (1992) [1] "Bancassurance can be described as a strategy adopted by banks or insurance companies aiming to operate the financial services market in a more or less integrated manner".

Manuscript received on 30 August 2022 | Revised Manuscript received on 02 September 2022 | Manuscript Accepted on 15 September 2022 | Manuscript published on 30 September 2022.

*Correspondence Author (s)

Dr. I. Narsis*, Assistant Professor, Department of Commerce, Government Arts College (Affiliated to Bharathidasan University), Tiruchy, (Tamil Nadu), India. E-mail: drnarsis01@gmail.com

©The Authors. Published by Blue Eyes Intelligence Engineering and Sciences Publication (BEIESP). This is an [open access](https://creativecommons.org/licenses/by-nc-nd/4.0/) article under the CC-BY-NC-ND license: <http://creativecommons.org/licenses/by-nc-nd/4.0/>

Exploratory Factor Analysis on Bancassurance Attributes

Gonulal, O.Serap et al., (2012) [2] expressed their view in world bank policy research working paper that the term bancassurance is consistently used to describe a new strategic orientation of financial institutions in private customer business. John Cooper (2013) [3] pointed out in his study of Success in.

Bancassurance, The Global Insurance Consumer survey conducted among 24000 customers around the world depicts that “customers are seeking value, convenience and wanted to buy from banks they trust.

Whereas, S. Saravan Kumar et al (2012) [4] has emphasis the success of bancassurance greatly hinges on banks ensuring excellent customers relationship; therefore, banks need to strive towards that direction. Popli & Rao (2009) [5] emphasized trust, personal relationship and convenience as the main reason for buying insurance products from bank. Boon et al., (2012) [6] In bancassurance, it is “relative advantage, complexity, compatibility, trialability and observability” that lead to acceptance of the customer towards bancassurance. Tiwari & Yadav (2012) [7] in their study found that Trust & safety is the main reason for buying life policy through banks.

Other reason includes easy accessibility, expert’s advice and convenience. T.H. Kumari (2012) [8] mentioned in her study that customers trusted their bank for buying insurance policy. Ali & Chatley (2013) [9] suggested in their study that customer prefers bancassurance for buying policy because of ease in premium payment, timely intimation of policy details and staff behavior. Lakhangaonkar (2014) [10] in his article revealed that the banks earn a huge revenue stream apart from their business and they can easily manage to convert customer to policy holder.

Alavudeen and Rosa (2015) [11] remarked that Bancassurance has a bright future as it offers insurers a readymade distribution platform with a tremendous distribution network. The study identified the criteria like convenience, location, trust, brand image, professionalism, commitment, cost, return on investment, relation with the sales force and helps build rapport which affects buying insurance policy through bank.

V. METHODOLOGY

The study is an empirical and descriptive in nature. The researchers have selected five leading public sector banks customers for the study. The primary data is collected for the study through a well-designed structural questionnaire. 500 questionnaires were distributed and received from the sample respondent under the census method. The thirteen questionnaires which were found incomplete was rejected. Finally, 487 questionnaires were taken for further analysis. (Table No.1).

Out of 487 sample respondent, 78.2 percentage of respondent were male and remaining 11.8 parentage were female. 62.1 percentage of respondent were married. it is also found that 33.6 percentage of respondent age (four level classification) in between 45 – 55 were largely participated, Among the three-level classification of education, majority of respondent (52.3) were graduate/diploma holder participate in the study. The study was conducted among the five public sector bank customers in urban area at Tiruchirappalli District of Tamilnadu.

VI. STATISTICAL TOOLS USED

The collected primary data was analyzed with help of SPSS and AMOS. The Exploratory factorial analysis was done to know the emerging customer perceived value factors and Confirmatory factor analysis has used to measure the customer perceived value factors.

VII. OBJECTIVE

This research paper has general objective to find the emerging customer perceived value factor over the bancassurance. Based on the general objective the following hypothesis has constructed.

VIII. HYPOTHESIS

- H1. Reliance variable positively affects the Core variable
- H2. Reliance Variable positively affects the Value variables
- H3. Reliance Variable positively affects the Support variables
- H4. Reliance Variable positively affects the Comfort variables.
- H5. Benefit variable positively affects the Core variable
- H6. Benefit Variable positively affects the Value variables
- H7. Benefit Variable positively affects the Support variables
- H8. Benefit Variable positively affects the Comfort variables.

Table No:1. Represented Sample Data

Name of the Bank	Questionnaire	
	No. of Respondent involved	Accepted and included for the study (after deducting incomplete questionnaire)
STATE BANK OF INDIA	100	97
INDIAN OVERSEAS BANK	100	99
INDIAN BANK	100	96
PUNJAB NATIONAL BANK	100	98
CANARA BANK	100	97
Total	500	487 (97.4%)

IX. EXPLORATORY FACTORIAL ANALYSIS

The extraction method used was the principal component analysis with pattern matrix. There are 18 variables were tested using promax factor rotation (pattern matrix) with a condition of eliminate the absolute coefficient score less than .50, the cumulative percentage of variance above 66 percent and factors considered the eigen value greater than 1 was the criterion used to determine the factors.

There are 7 factors emerged under the above outline. Moreover the structural relationship has been tested to obtain a satisfactory model fit to test the structural model between the latent variables represents a specific hypothesis. Since the Economy indicator has scored a negative value, it was removed from the seventh factor. The alone indicator represented in the seventh factors namely Brand has merged into sixth factor.



Table No.2 Exploratory Factor Analysis

Label	Item Name	Factor Name	Factor Loading	Cronbach Alpha	Communalities	Variance Explained	KMO
Trustworthiness of bank	Trust	Reliance	.916	.712	.718	23.420	.722
Confident over the Banks insurance product	Confident		.861		.728		
Clear explanation of various policy	Clear		.653		.502		
Assured a higher rate of return	Return	Benefit	.857	.626	.673	9.995	.561
Provide Special Benefits	Special		.824		.650		
Good Rapport with bank staff's	Rapport	Value	.838	.623	.691	7.961	.603
Excellent bank -Agent services	Agent		.833		.686		
Good compile handling mechanisms	Compliant		.785		.584		
Received updating information of my policy	updatation	Core	.823	.646	.638	7.162	.714
Continuation of lapsed policy	Continuation		.751		.679		
Timely disbursement of benefits	Timely				.566		
Intimation of payments due in time	intimation				.645		
Provide Excellent customer service	Service	Support	.850	.707	.755	6.770	.738
Less Documentation	Documentation		.823		.733		
Timely disbursement of benefits	Time	Comfort	.824	.703	.709	5.912	.622
less time for formal registration	simple		.785		.753		
Economical to buy insurance from bank	Economy	Limitation	.781	.307	.674	5.629	.583
Bank Brand image influence to buy Bancassurance	Brand		.767		.649		

X. RELIABILITY AND VALIDITY OF THE MODEL

The Reliability Analysis procedure calculates a number of commonly used measures of scale reliability and also provides information about the relationships between individual items in the scale. The table no.2 shows the result of Cronbach's Alpha which is used to estimates reliability statistics for the components of multiple-item additive scales. The researcher checked the reliability of each dimension. It is found that Work Reliance factors consist of three indicators has scored a reliability of .461, the Benefit factor consist of two indicators by scorig .627, the Value factor consist of three indicators by scoring .627, the Core factor consist of four indicators by scoring .627, the support factor consist of two indicators by scoring .627 and the comfort factor consist of three indicators by scoring .627. The table no 4 has shown the value of composite reliability, Average variance extracted and MSV and correlation between the six factors. it is found that the composite value for the factors such as, support and Reliance factors has scored above 0.7, however the remaining factors such as, Benerfit, Value, Core and Comfort factor are score less then 0.7. It is found that the AVE value for support factor has scored above 0.5. The Reliance and Benefit factors has nearer to acceptable value. However the Value, Core and Comfort factors has scored

less than 0.5. it is also observed that the Value of MSV is higher than AVE has reflect in all factors except Comfort factor. Moreover, the inter correction between the six factors has excellent by the way of scoring more than .5.

Table No: 3 Summary of Model Fit

Research Model		Obtained fit indices	Threshold*	Interpretation
Advanced fit model	CMIN/DF	3.177	<3	Merely Acceptable
	RMSEA	.067	<0.08	Excellent
	RMR	.07	<0.05	Terrible
Incremental fit model	CFI	.876	>0.90	Merely Acceptable
	NFI	.831	>0.90	Merely Acceptable
	TLI	.838	>0.90	Merely Acceptable
Parsimonious fit model	AGFI	.893	>0.5	Excellent
	PGFI	.630	>0.5	Excellent

*Suggestion for indices was adapted from literature Byrne, 2006[12]; Hair et al., 2006 [13] and Tabachnic and Fidell, 2007[14].
CMIN/DF :<3 = GOOD; <5 Sometimes permissible.
CFI: >.95=great; >.90= traditional; >.80 sometimes permissible
RMSEA: <.05= Good; .05 - .10 moderate; >.10 Bad.

Table No.4.Validity Concern.

	CR	AVE	MSV	MaxR(H)	Support	Reliance	Benefit	Value	Core	Comfort
Support	0.708	0.549	0.167	0.710	0.741					
Reliance	0.730	0.485	0.480	0.857	0.310	0.696				
Benefit	0.631	0.463	0.111	0.886	0.132	0.256	0.680			
Value	0.642	0.380	0.118	0.907	-0.002	0.276	0.262	0.616		
Core	0.649	0.328	0.480	0.925	0.409	0.693	0.325	0.343	0.573	
Comfort	0.558	0.362	0.349	0.936	0.373	0.591	0.333	0.294	0.570	0.602



Exploratory Factor Analysis on Bancassurance Attributes

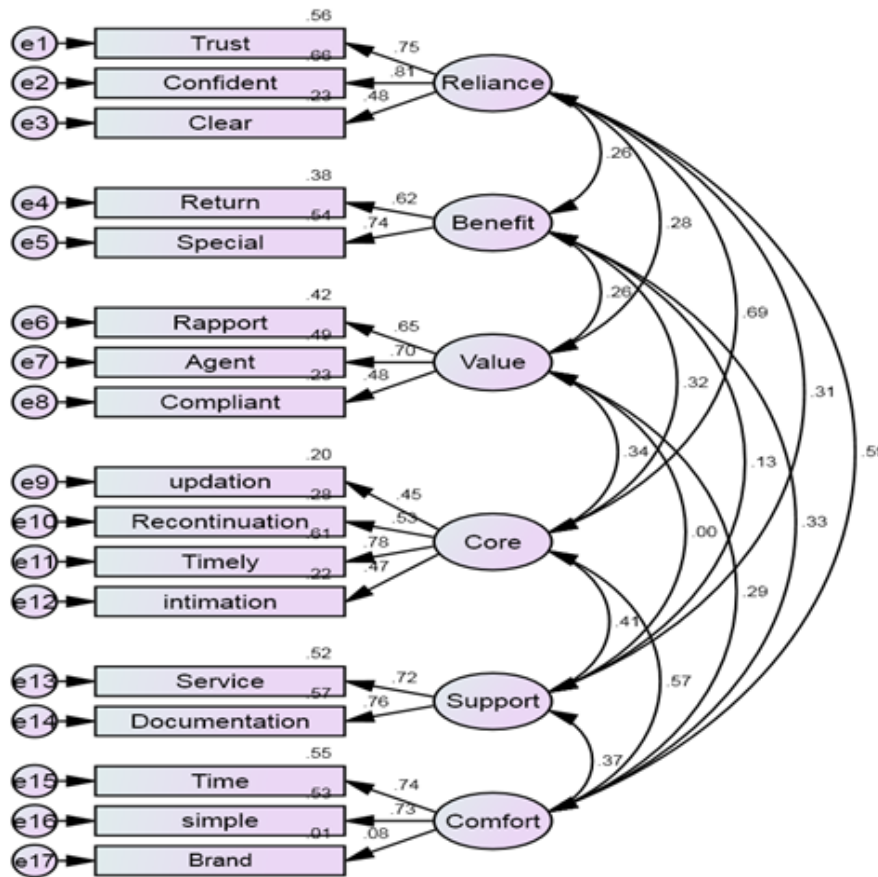


Fig. 1 Measurement Model for Beneficiary Perceived Value Over Bancassurance

Table No.5 Estimated Regression Weights

Observed Variables		Latent Construct	S.E.	C.R.	P	Estimates of Standardized Regression Weights
Trust	←	Reliance	.047	16.986	0.001	.750
Confident			.046	18.592	0.001	.812
Clear			.038	10.201	0.001	.483
Return	←	Benefit	.074	8.579	0.001	.620
Special			.085	9.122	0.001	.736
Rapport	←	Value	.056	11.734	0.001	.651
Agent			.056	12.356	0.001	.698
Compliant			.048	9.008	0.001	.478
updatation	←	Core	.051	9.215	0.001	.451
Recontinuation			.053	11.010	0.001	.529
Timely			.042	16.879	0.001	.782
intimation			.053	9.540	0.001	.466
Service	←	Support	.069	11.650	0.001	.724
Documentation			.072	11.924	0.001	.757
Time	←	Comfort	.052	14.959	0.001	.741
Simple			.051	14.757	0.001	.729
Brand			.055	1.586	.113	.083

The above table shows the regression weights and standardized regression weights. The P value of all the 17 indicators indicate that there is a good relationship between six factors with respective indicators by scoring p value less than 0.001. The alone observed indicator such as Brand has shown the weak relation with the unobserved comfort factor. The standardized regression weights indicate the strength of relationship between observed and unobserved variables. It is found that out of 17 unobserved indicators, 12 indicators have scored the minimum values of above 0.5. It is

concluded that the model is fit all estimated significant value less than 0.001, majority of the observed indicators estimated value are above 0.5. The probability of getting a critical ratio as large as 18.592 in absolute value is less than 0.001. In other words, the regression weight for Reliance in the prediction of Confident (Confident over the Banks insurance product) is significantly different from zero at the 0.001 level.



it is found that When Reliance goes up by 1 standard deviation, Confident (Confident over the Banks insurance product) goes up by 0.812 standard deviations. The probability of getting a critical ratio as large as 16.879 in absolute value is less than 0.001. In other words, the regression weight for Core in the prediction of Timely (Timely disbursement of benefits) is significantly different from zero at the 0.001 level. it is indicated that When Core goes up by 1 standard deviation, Timely (Timely disbursement of benefits) goes up by 0.782 standard deviations.

Table No.6 Estimated Correlations

Correlation Between		Estimate correlation	P value
Reliance	Benefit	.256	***
Reliance	Value	.276	***
Reliance	Core	.693	***
Reliance	Support	.310	***
Reliance	Comfort	.591	***
Benefit	Value	.262	***
Benefit	Core	.325	***
Benefit	Support	.132	.047**
Benefit	Comfort	.333	***
Value	Core	.343	***
Value	Support	-.002	.970*
Value	Comfort	.294	***
Core	Support	.409	***
Core	Comfort	.570	***
Support	Comfort	.373	***

*** Significant at .001, ** Significant at .05, * insignificant

The above table shows the relationship between six unobserved variables. it is found that there is a weak or poor and moderate relationship has been prevailed among the six latent factors. it is also observed than even though all the latent factor has significant relationship with each other, there is week or poor and moderate relationship has prevailed between them. It is found that the relationship between Value and Support factors has insignificant. More over the strong relationship has occurred between Reliance and Comfort factor by .693 and week or poor relation has occurred between Benefit and Support factor by .132.

The probability of getting a critical ratio as large as 16.315 in absolute value is less than 0.001. The covariance between Reliance factor and Core factor is significantly different from zero at the 0.001 level. There is strong relationship has occurred by 69.3 percent estimated correlation between Reliance factor and Core factor. The probability of getting a critical ratio as large as 0.038 in absolute value is .970. The covariance between Value and Support is not significantly different from zero at the 0.05 level. It is fond that there is a negative relationship has occurred between Value and Support factor by -2 percent between two unobserved factors.

XI. RESULT AND DISCUSSION (A)

The six factors explored through exploratory analysis were allowed to correlate with one another in the measurement model as shown in the diagram 1. The model fit indices of the proposed measurement model were found to the within the acceptance level as shown in the table no. 333. Moreover, the Confirmatory factor analysis was conducted to test the research objective. the two independent observed variables under Reliance factor and one observed variable under benefit as well as core factor and all the two observed variables under support factor and two unobserved variables under comfort factor have loading of standardized regression weights more than 0.72 which is above the threshold level. The highest standardized regression weight is 0.81 for Confident and lowest value is 0.08 for Brand among the observed variables. Out of six unobserved variables, the variables such as, core factor, Reliance factor and Support factors loading of more than 0.71 which is above the required level of acceptance. it is also observed than even though all the unobserved variables have significant relationship with each other, there is week or poor and moderate relationship has prevailed between them. it is found that the relationship between Value and Support factors has insignificant. More over the strong relationship has occurred between Reliance and Comfort factor by .693 and week or poor relation has occurred between Benefit and Support factor by .132.

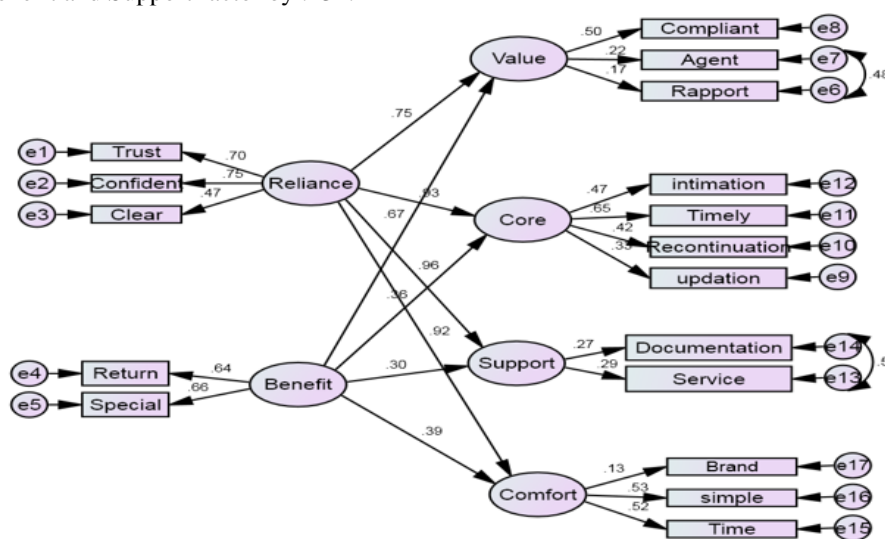


Fig. 2 Fitted Covariance Structural Model for Beneficiary Perceived Value Over Bancassurance

Exploratory Factor Analysis on Bancassurance Attributes

Table No.7 Summary of Model Fit

Research Model		Obtained fit indices	Threshold*	Interpretation
Advanced fit model	CMI N/DF	4.020	<3	Merely Acceptable
	RMS EA	.079	<0.08	Acceptable
	RMR	.074	<0.05	Terrible
Incremental fit model	CFI	.813	>0.90	Merely Acceptable
	NFI	.768	>0.90	Merely Acceptable
	TLI	.775	>0.90	Merely Acceptable
Parsimonious fit model	AGFI	.864	>0.5	Excellent
	PGFI	.664	>0.5	Excellent

*Suggestion for indices were adapted from literature Byrne, 2006: Hair et al., 2006: Raykov and Marcoulides, 2006: and Tabachnick and Fidell, 2007.

The structural model fits the data satisfactorily as shown by the fit values which are within satisfactory level. The Structural equation model was used to know the effect of "Reliance and Benefit factor" on Value, Core, Support and Comfort factor of bancassurance product and services. The value of path coefficients are significant by less than 0.001 and 0.05 for all latent factors, except the effect of Benefit factor on Support factor.

Table No. 8 Result of Hypothesis Testing

Hypothesis	Path	β	t.value	P	Results
H1	Reliance → Value	.746	8.287	***	Supported
H2	Reliance → Core	.931	9.819	***	Supported
H3	Reliance → Support	.955	5.363	***	Supported
H4	Reliance → Comfort	.921	2.536	.011	Supported
H5	Benefit → Value	.666	6.670	***	Supported
H6	Benefit → Core	.364	5.541	***	Supported
H7	Benefit → Support	.297	1.704	.088	Not Supported
H8	Benefit → Comfort	.389	2.324	.020	Supported

The probability of getting a critical ratio as large as 9.819 in absolute value is less than 0.001. The regression weight for Reliance factor in the prediction of Core factor is significantly different from zero at the 0.001 level (two-tailed). It is found that When Reliance factor goes up by 1 standard deviation, Core factor goes up by 0.931 standard deviations. The probability of getting a critical ratio as large as 6.67 in absolute value is less than 0.001. The regression weight for Benefit factor in the prediction of Value factor is significantly different from zero at the 0.001 level (two-tailed). It is found that When Benefit factor goes up by 1 standard deviation, Value factor goes up by 0.666 standard deviations.

XII. RESULT AND DISCUSSION (B)

It is observed that the Reliance factor has positively affect the Value factor ($\beta = .74$, $t=8.28$), Core factor ($\beta = .93$, $t=9.81$), Support factor ($\beta = .95$, $t=5.39$) and comfort factor ($\beta = .92$, $t=2.53$) at 0.05 level of significant. The Benefit

factor has positively affect the Value factor ($\beta = .66$, $t=6.67$), Core factor ($\beta = .36$, $t=5.54$) and the Comfort factor ($\beta = .38$, $t=2.32$) at 0.05 level of significant. However, the Benefit factor has no positive affect the Support ($\beta = .29$, $t=1.7$) factor at 0.01 level of significant. It is concluded that the above result supports all the hypotheses except H7.

XIII. MANAGERIAL IMPLICATION

This research paper has concentrated the beneficiary perceived value over the bancassurance offered by public sector banks. The survey was conducted among the customer residing urban area in Tiruchirapalli District. It is observed that the impact of reliance factor on Core factor, Comfort factor and Support factor were strong and considerably the banks earn good reputation over the Core factor, Comfort factor and Support factor among the beneficiaries of bancassurance.

Whereas, the impact of Benefit factor on Value factor, Core factor, Support factor and Comfort factor was low. Here it is implied that the low impact of Benefit factor on Value, core, support and comfort factor were affect the beneficiary perceived value over the bancassurance.

The result indicate that though reliance factor has stronger among the beneficiaries, the other side, Benefit factor considerably low effect over the bancassurance offered by public sector banks. It is need to emphasis the management and administrator to draw a most awaited benefit factors bancassurance product and service to satisfied the beneficiary.

XIV. CONCLUSION

Today all the banks are giving importance to retain their customers as they are the inevitable part of the business. Bancassurance income can only be raised by providing better services. In this part, the public and private sector banks are competing each other which in turn influence the economy.

If the administrators periodically review the beneficiaries perceived value over their bancassurance product and services and modify the existing product and services according to get their fullest satisfaction.

LIMITATIONS AND FUTURE RESEARCH DIRECTION

This research paper has conducted among the customer of Public Sector banks residing at urban area in Tiruchirapalli District. These findings of the study may differ among the selected public sector banks within itself.

Moreover, the study findings may vary based on the personal and demographic profile of beneficiaries. It is suggested for future studies may carry out to find the difference between private and public sector beneficiaries perceived value over bancassurance product and services. Moreover the further study may be carried out to include the Personal and dimorphic factors of beneficiaries as a control variable.



REFERENCE

1. Swiss Re, "Bancassurance: A Survey of competition between banking and insurance", Sigma No. 2, Switzerland, 1992, 4.
2. Gonulal, O. Serap, N. Goulder, and Rodney R., Lester, Bancassurance -- A Valuable Tool for Developing Insurance in Emerging Markets (September 1, 2012). World Bank Policy Research Working Paper No. 6196. [CrossRef]
3. John Cooper, Success in Bancassurance ,Ernst& Young The Bancassurance Bulletin, Issue 1, January- May 2013.pg4.
4. SaravanKumar. S.,Punitha. U. ,Gunasekaran & S.Sankar, Flourishing Bancassurance business an Indian Perspective. International Journal of Multidisciplinary Research Vol.2 Issue 2, February 2012, ISSN 2231 5780.
5. Popli.G.S. & D.N. Rao (2009), "An Empirical Study of Bancassurance: Prospects & Challenges for Selling Insurance Products through Banks in India", URL: <http://dx.doi.org/10.2139/ssrn.1339471>. [CrossRef]
6. Boon, Lim Kah; Chein , Teo Siew and Yittjia, Cheong (2012), "User acceptance of Bancassurance in Malaysia", International conference on management, economics and finance proceedings
7. Tiwari & Yadav (2012), "A Customer Survey and Perception towards Bancassurance (with reference to Life Insurance Industry)", South Asian Journal of Marketing and Management Research, Vol. 2, No. 2, Pp.142–164.
8. Kumari T.H. (2012), "Customer Attitude towards Bancassurance: An Indian Perspective", Global Journal of Current Research, Vol. 1, No. 1, Pp. 39–49.
9. Ali. L. & P. Chatley (2013) "Customer Perception of Bancassurance: A Survey", European Journal of Business and Management, Vol. 5, No. 22, Pp. 34–46.
10. S. Lakhangaonkar, "The Current Trend In Bancassurance Channel Of Life Insurance Sector In India", Pioneer Journal for IT and Management. (2014).
11. Alavudeen, Rebeena, and K.D. Rosa, "Growing Role of Bancassurance in Banking Sector."Bonfring International Journal of Industrial Engineering and Management Science, 5(2), 2015, 10-16. [CrossRef]
12. Byrne, B. M. (2006). Structural equation modeling with EQS and EQS/Windows Basic concepts, application and programming. Mahwah, NJ Lawrence Erlbaum Associates. - References - Scientific Research Publishing
13. Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006).Multivariate data analysis (Vol. 6). Upper Saddle River, NJ: Pearson Prentice Hall.
14. Tabachnick, B. G., & Fidell, L. S. (2007). Using Multivariate Statistics (5th ed.). Scientific Research publication, New York.

AUTHORS PROFILE



Dr. I. Narsis, M.Com., M.Phil., M.B.A., M.A., M.Ed., PGDCA., Ph.D. is a Assistant Professor & Research Advisor, PG Department of commerce in Government Arts College, Tiruchy 22, Tamil Nadu. He obtained his PG Degree in commerce from Loyola College, Chennai and M.Phil. in Commerce from Madurai Kamaraj University. Besides, he has a Ph.D. in Commerce. Dr.I.Narsis has presented many papers in national level and international level seminars and conferences and published various research articles in different commerce and economics journals and magazines. He is the author of the book titled *Theory in Cost accounting (2009)*, *Fundamentals of Cost accounting (Theory, Problems and Solution-2011)*, and *Strategic Management (2018)* Published by Atlantic Publishers & Distributors (P) ltd, New Delhi, *Fundamentals of Research in Social Science* Published by Scitext Publishing Company, Chennai and Co-author of the book titled *Computer in Business*.

