



Impact of liberalisation on Indian life insurance industry: A truly multivariate approach

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Abstract This study examines the impact of liberalisation on the Indian insurance industry by examining it in terms of its efficiency characterised by functional performance. Data of 552 respondents from Indian life insurers was used for the empirical examination. Multivariate analysis of variance (MANOVA) was conducted to test the hypotheses that the linear combinations of impact of liberalisation on the Indian life insurance industry characterised by marketing mix, service quality and insurance awareness might differentiate between groups characterised by gender, place of residence, types of relationship with Life Insurance Corporation (LIC), types of employee positions in LIC, and types of relationship with private players. The results reveal a positive impact of liberalisation on the Indian life insurance industry.

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Introduction

The Indian life insurance industry has transitioned from an open competitive sector to a protected regime and then back to being a liberalised insurance sector in its 360-degree journey over a period of more than a hundred years. Nationalisation of the life insurance sector took place on 1st September 1956, with issuance of ordinance by Government of India (GoI) to dissolve 245 units (154 Indian insurers, 16 non-Indian insurers and 75 provident societies) into a giant, government-owned, autonomous entity, namely, Life Insurance Corporation of India (LIC) (IRDA, 2007). The purpose of the nationalisation of the life insurance sector was to increase the penetration of life insurance in the country, particularly in the deep rural areas in order to provide adequate life

insurance cover at a reasonable cost to all insurable individuals. However, with the passage of time, it has been observed that the protected regime in the insurance sector has resulted in low insurance penetration and density. A mass of insurable individuals has remained without insurance cover. In the year 1993, the GoI set up the Malhotra Committee to evaluate the Indian insurance sector in terms of examining its structure, assessing its strengths and weaknesses, and reviewing the existing regulatory provisions in order to suggest reforms. Recommendations of the Malhotra Committee laid the foundation for the entry of private players (Rao, 2008). With the passage of the Insurance Regulatory Development Authority (IRDA) bill in March 2000, the protected Indian insurance sector was opened up and the entry barriers were removed for private players. The IRDA allowed entry of global insurance players, only with their domestic partners and with a limit of 26% FDI cap. Thus, the era of competition began, and it has wrought a transition in the Indian insurance industry.

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Foreign players with their domestic partners brought innovative products, superior ways of customer service and greater use of information technology (IT). Increased competition has witnessed easy market access, increased insurance awareness and education on financial planning, competitive premium rates, wider choice of products, alternative distribution channels, multiple premium payment gateways, visually appealing physical evidence, aggressive promotional strategies, training initiatives, job opportunities and so on. In turn this transition has contributed to the nation's economic growth and development. While there are numerous benefits resulting from the liberalisation of the Indian insurance sector, it has posed some challenges to LIC of India. Therefore, it is essential to evaluate the Indian life insurance sector in order to measure the impact of liberalisation.

There has been a substantial amount of debate on the impact of liberalisation on the Indian life insurance industry; however, there has been little focus on the examination of its key components such as productivity and efficiency. Productivity is a quantitative aspect in terms of financial performance whereas efficiency is a qualitative aspect that depicts the overall functional performance of the insurers characterised by sales and communication strategies, innovation in products and service delivery, distribution channel, pricing, service quality, IT initiatives, process reengineering, insurance awareness (penetration and density) and so on. The main purpose of this study is to examine the impact of liberalisation on the Indian life insurance industry in terms of efficiency characterised by functional performance.

Aims and objectives

The transformation of the Indian life insurance industry in the post liberalisation landscape has been observed in various studies, expert reviews and scholarly articles. Most studies have focused on one or two aspects of transformation such as customer satisfaction, buying behaviour, service quality, or comparison of performance of private players and LIC. However, to the best of our knowledge, there is no comprehensive study that measures the impact of liberalisation by extracting change factors induced by liberalisation in the area of functional performance; such change factors could be strategies, innovation, distribution channel, pricing, service quality, use of technology, simplified processes, and insurance awareness.

The main purpose of this study is to examine the impact of liberalisation on the Indian life insurance industry in respect of overall functional performance.

Our study addresses the following research questions by empirical enquiry.

1. What are the change factors induced by the impact of liberalisation on the Indian life insurance industry?
2. What is the impact of liberalisation in respect of overall functional performance?

The study also aims to understand and measure the perception of the impact of liberalisation on the Indian life insurance industry across groups characterised by gender, place of residence, types of relationship with LIC, types of employee positions in LIC, and types of relationship with private players.

Literature review

Numerous studies have focused on the transition of the Indian life insurance industry. The studies in the field have explored the dominant themes related to the topic and have helped maintain the sense of the topic's perspective throughout the present study, and have provided the context for identifying data collection requirements, as well as creating the data collection tools for the primary research.

Impact of liberalisation on life insurance industry in the world context

Mrak (2000) pointed out that financial sector reforms in transition economies should address three core areas: enhancement of competition, improvement of regulatory framework, and strengthening of supervision. Arestis (2005), Bumann, Hermes and Lensink (2012), and Khanal (2007) observed the financial liberalisation-growth nexus and the positive effect of financial liberalisation on growth. Boardman and Vining (1989) observed some evidence of superior efficiency in the public sector. Lee and Chang (2012) empirically examined the influence of the KOF¹ index of globalisation. Anđelić, Ćosić and Đaković (2010) observed the growing presence of business globalisation and its associated consolidation, deregulation, new distribution channels and new customer demands. Baur, Birkmaier and Rüstmann (2001) argued that together with globalisation, IT is a major driver behind the structural change in the insurance industry to enhance risk transfer efficiency. Skipper (1997) stated that foreign-owned domestic insurers offer the potential for improved customer service and value which can lead to increased domestic productivity and efficiency. Hu, Zhang, Hu and Zhu (2009) pointed out that the wholly foreign-owned insurance companies were more efficient both in technical and scale terms than joint stock companies and joint ventures, due to their rich experience in underwriting, claim settlement, distribution, and management; these capabilities would help the wholly foreign-owned insurance companies gain competitive advantages in these areas. Ćurak, Lončar and Poposki (2009) examined the relationship between insurance sector development and economic growth in 10 transition European Union member countries, in the period 1992-2007. They applied fixed-effects panel model and control for other relevant determinants of economic growth and endogeneity. According to their findings, insurance sector development positively and significantly affects economic growth.

Impact of liberalisation in respect of functional performance

Transformation in marketing mix

Rao (2005) discussed the rapid growth of the insurance industry, improvement in penetration and density, the plethora of new and innovative products, and the introduction of

¹ The KOF database of the Swiss Economic Institute ("Konjunkturforschungsstelle"), was proposed by Axel Dreher. The KOF index of globalisation calculates an overall index (GLOB) as well as the three main dimensions of globalisation, including the economic (ECO), social (SOC) and political (POL) dimensions.

alternate channels. [Dubey \(2005\)](#) pointed out the five main challenges faced by insurers, connected with low awareness level, product innovation, distribution, customer services, and insurance penetration. [Bajpai \(2006\)](#),² stated that in the five years of liberalisation the insurance industry had experienced watershed development. The product, distribution channel and overall strategy mix had undergone transformation partly introduced by the new players and partly induced by the environmental developments. [Joshi \(2005\)](#) observed a slow and steady change in the Indian insurance sector and expected tremendous improvement in the areas of market expansion, product development, customer services, and distribution channel. [Mishra and Mishra \(2005\)](#) observed significant changes such as new market entrants, new substitutes for traditional market offerings, more focus on market selection, new and varied distribution channels, and bundling and unbundling of products and services in an effort to customise and achieve greater value while re-engineering and consolidating for efficiency. [Jawaharlal and Rath \(2005\)](#) observed shift from product centric enterprise to customer centric enterprise with increasing complexity, regulatory changes, innovative technology and sluggish economy having played a key role in reshaping the dynamics of the insurance industry. [Srivastava, Tripathi and Kumar \(2012\)](#) observed that competition resulted in innovations in products, pricing, distribution channels, and marketing in the industry.

[Narayanan \(2009\)](#) observed that one of the main gains customers have had after privatisation has been the popularisation of the concept of riders; insurers offer a variety of riders to meet the needs of policy holders. [Selvakumar and Priyan \(2010\)](#) observed that competition led to emergence of vibrant alternative distribution channels and this, coupled with targetted publicity, phenomenal promotional campaigns, and innovation in delivery mechanism through various marketing tie ups, led to lower premium rates for pure protection plans. [Chandirakala \(2010\)](#) indicated perceptible change in the marketing policy of the insurance sector, complete automation in its working, introduction of new policies, change in the interior office set up and in the attitude towards consumers. [Garg and Verma \(2010\)](#) pointed out that the customer driven market would result in a lot of flexibility and innovation in products, pricing, distribution channels, and communication mechanisms. They observed that there was no significant difference between the opinions of respondents of private companies and public companies at various hierarchies regarding variables of marketing mix. [Venkaiah and Sudhir \(2013\)](#) observed that LIC of India was in a better position than private insurance companies in terms of product and price mix variables, whereas the private insurance companies were in a better position with regard to aspects of place, promotion, people, process, and physical evidence.

Service quality

[Banumath and Karunanithi \(2007\)](#) concluded that monopoly had resulted in lack of sensitivity to policy holders; however, there was great scope for service improvement. According to [Sri Jyothi \(2008\)](#) in the post liberalisation phase,

customers have started demanding world-class facilities and services. This has forced companies to rethink their customer service strategy by adopting a customer centric approach. [Nagananthini \(2009\)](#) observed a sea change in terms of improved customer service in the post liberalisation phase. [Chandirakala \(2010\)](#) observed that one of the major approaches to service quality was customer orientation in the form of higher quality service, preference given to customer need, complete disclosure of key information, and quick settlement of claims. [Chawla and Singh \(2008\)](#) identified six service quality factors affecting customer satisfaction levels of policy holders based on responses of 210 policyholders from northern India. The quality factors were accessibility, reliability, assurance, product range and information, quality of service, and competitive pricing. They found that respondents who had purchased insurance policies before privatisation had a higher mean score as compared to respondents who purchased insurance policies after privatisation. [Ponreka and Surya Rao \(2009\)](#) indicated that under non price competition especially with regard to consistent development of service quality and delivery of customised service, public and private players need to create their own niche market. They identified factors based on the standard SERVQUAL dimensions with new names such as individualised attention, performance, tangibles, trustworthiness, and courtesy, which influence the quality of service rendered by LIC in Madurai district. [Murthy and Mohamed \(2013\)](#) validated an instrument comprising seven dimensions: assurance, personalised financial planning, competence, corporate image, tangibles, technology, and ethics to measure customer perceived service quality in the insurance sector. Based on the five-dimension service quality model (the dimensions being core services, human element of service delivery, non-human element of service delivery, tangibility of services and social responsibility) developed by [Chaudhary, Singla and Chaudhary \(2014\)](#), [Sureshchandar, Chandrasekharan and Kamalanabhan \(2001\)](#) observed that there was a significant negative difference in level of service quality expected and service quality perceived by the customers in respect of LIC of India and improved customer service quality strategies were required to meet the high expectations of customers.

In their assessment of service quality, customer satisfaction and customer loyalty in LIC, [Qureshi and Bhat \(2015\)](#) indicated a service quality shortfall i.e. perceptions were lower than expectations in all the six service quality dimensions of the study with personalised financial planning followed by competence and assurance being dimensions of more concern.

Concentration

[Prabhakara \(2010\)](#) observed progressive growth in terms of penetration and density in the post reform era; further, he observed the spread of the insurance business in the rural areas and in the social sector, and in the form of micro insurance. [Kshetrimayum \(2011\)](#) observed that insurance penetration and density increased as expected over the years since liberalisation but in terms of rural penetration the share of rural business in total volume of insurance business was still low in India and its potential was still underdeveloped. [Lee and Chang \(2012\)](#) examined the impact of globalisation on the deviation of life insurance penetration

² G. N. Bajpai - Former Chairman, LIC of India and Securities and Exchange Board of India.

measured by the difference between observed life insurance penetration and the world average penetration and concluded that globalisation could reduce the deviation of life insurance penetration; they suggested that globalisation promotes the convergence of international life insurance markets. [Srivastava et al. \(2012\)](#) pointed out that the sector had great potential to grow but required more improvement in insurance density and insurance penetration, especially in the rural areas. [Jain \(2013\)](#) observed that since the opening up of the Indian insurance sector for private participation, India has reported an increase in insurance density for every subsequent year and for the first time reported a fall in the year 2011. Insurance penetration, which surged consistently till 2009, slipped in the consecutive second year on account of slower rate of growth in life insurance premium as compared to the rate of growth of the Indian economy. [Kumari \(2013\)](#) pointed out that the entry of an increasing number of private players and the geographical expansion of life insurance offices led to a remarkable growth of the insurance business, which in turn led to an increase in insurance penetration and density. [Brokešová, Pastoráková and Ondruška \(2014\)](#) concluded that the factors that significantly contribute to changes in the development of the insurance industry are income/savings, population size, level of education, degree of urbanisation, law enforcement, and insurance market concentration.

Bancassurance and alternate channel

[Agarwal \(2004\)](#), [Kumar \(2004\)](#), and [Siddiqui \(2014\)](#) observed that one of the most significant changes in the financial services sector over the past few years has been the growth and development of bancassurance and the use of multiple distribution channels. [Sinha \(2005\)](#) argued that there are natural synergies between banks and insurance companies. In India, with the deliberate expansion policies of banks, bank branches reach even the remote areas. Banks also had a huge “trusted brand” advantage.

Technological development

[Agarwal \(2002\)](#), [Arora \(2003\)](#), [Chari \(2005\)](#), [Dhevan and Shanmugasundaram \(2007\)](#), [Manoharan \(2007\)](#), [Martina and Sairani \(2010\)](#), [Ramana \(2007\)](#), and [Prabhakara \(2010\)](#) studied the technological developments in the insurance sector and observed substantial changes in terms of greater use of computerisation and IT. [Narayanan \(2009\)](#) indicated that in the post liberalisation era the one innovation that has enabled the insurance industry to be more customers centric is the access to information by any one from any part of the world. [Choudhuri \(2013\)](#) observed a significant relationship in introduction of IT by LIC and the entry of private players in the Indian insurance market.

Emerging trends and other studies

[Jawaharlal \(2010\)](#), [Palande, Shah and Lunawat \(2003\)](#), and [Meenu \(2013\)](#) studied emerging trends in the insurance industry such as greater concern for customer, cost effective operations, technology driven shift, specialisation, flexibility in policies, global integration, improved underwriting practices and the changing role of intermediaries.

Amongst the various studies where scientific research methods were applied, [Ghosh \(2013\)](#) investigated the relationship between life insurance sector reforms and the overall development of the life insurance business. [Gupta \(2014\)](#) observed that life insurance companies in India are developing new products but they have failed to penetrate rural areas. [Rajendran and Natarajan \(2010\)](#) noted the growth of the Indian life insurance industry while comparing the efficiency and progressiveness of the life insurance business in the pre- and post-Liberalisation Privatisation Globalisation (LPG) periods. [Prakash and Sugumaran \(2014\)](#) revealed high mean value in the *t*-test on consumer expectations and their personal experience in the form of perceptions. Based on secondary data, [Kshetrimayum \(2011\)](#) investigated deregulation with respect to industry scenario, concentration, efficiency, productivity, and innovation in the Indian life insurance industry. [Vadlamannati \(2008\)](#) observed that the contribution of the insurance sector to economic development is positive and exhibits a long-run equilibrium relationship; reforms exhibit no strong relationship, but the rate of growth of reforms has a positive influence on economic development.

Literature gap

While reviewing the literature on the impact of liberalisation on the Indian life insurance industry since 1999, we find that very few studies have tried to analyse the impact of liberalisation by extracting change factors induced by liberalisation. The impact of liberalisation has been observed in terms of various dimensions such as innovative products, development of distribution channel, technology development, increased penetration and density, improved service quality, technological advancement, growing employment opportunity, increased productivity, and so on.

Most of the studies have focussed on one or two dimensions; a few studies such as [Garg and Verma \(2010\)](#), [Ghosh \(2013\)](#), [Kshetrimayum \(2011\)](#), [Rajendran and Natarajan \(2010\)](#), and [Chaudhary et al. \(2014\)](#) have tried to analyse the comprehensive content of the impact of liberalisation on the Indian life insurance industry on the basis of research on methodological applicability. They have used cross sectional data which present evidence on one or more aspects that prove a positive or negative impact of liberalisation.

In the insurance industry in general, product, price competition, distribution channel, promotional strategies, customer services, and IT initiatives command much attention. Several studies have also focussed on customer satisfaction, buying behaviour, service quality, and the comparison between LIC and private players. Some of the studies reveal contradictory results, such as the contradictory view on alternative distribution channel in the studies of [Rao \(2007\)](#) and [Jampala and Rao \(2007\)](#). Such contradictions necessitate further study to improve the body of knowledge and present a clear view on the topic. Thus, a notable research gap has existed in the comprehensive measurement of the impact of liberalisation on the Indian life insurance industry.

Research methodology

The main purpose of this study is to examine the impact of liberalisation on the Indian life insurance industry in terms

of overall functional performance by extracting change factors and measuring their main effects and interactions.

The omnibus null hypothesis

H_0 : All groups—classified according to gender, place of residence, types of relationship with LIC, types of employee's position in LIC, types of relationship with private players (derived on the basis of demographic and psychographic variables)—are equal with regard to their population means on any and all linear combinations of impact of liberalisation on the Indian life insurance industry.

Examining the linear combinations of impact of liberalisation on the Indian life insurance industry that might differentiate between the groups, the following hypotheses emerge.

H_{01} : There is no significant effect of type of gender on the linear combinations of impact of liberalisation on the Indian life insurance industry.

H_{02} : There is no significant effect of type of place of residence on the linear combinations of impact of liberalisation on the Indian life insurance industry.

H_{03} : There is no significant effect of type of relationship with LIC on the linear combinations of impact of liberalisation on the Indian life insurance industry.

H_{04} : There is no significant effect of type of employee's position in LIC on the linear combinations of impact of liberalisation on the Indian life insurance industry.

H_{05} : There is no significant effect of type of relationship with private players on the linear combinations of impact of liberalisation on the Indian life insurance industry.

Research design

The research design for this study is descriptive in nature and follows a survey research method; a 5-point Likert Scale was used. A correlational design was used utilising cross-sectional survey methodology.

Population and participants

The population for the study and the sample frame were selected from amongst intermediaries, customers and employees of LIC of India as well as private players across the country. They were considered as the proper strata to draw samples from as they are representative of Indian life insurers. Thus, the result obtained from these samples can be generalised. Stratified sampling method with disproportionate stratification was applied along with convenient sampling.

Determination of sample size and formula

Sample size in the present study was determined based on [Godden's \(2004\)](#) guideline; the population was found to be infinite therefore based on the 95% confidence level (Z value), sample size formula $SS = Z^2 \times P \frac{(1-P)}{M^2}$ was used to arrive at a representative number of respondents. Data of 552 respondents from Indian life insurers was used for the empirical examination.

Instrumentation

Secondary data was collected through rigorous literature review and primary data on various elements of the study were collected from the field by survey method. A comprehensive questionnaire was utilised as the instrument.

Procedures

Prior approval was obtained from LIC for the proposed study. Library resources of the Sales Training Centre, LIC, Ahmedabad; National Insurance Academy, Pune; and IIM Ahmedabad were utilised to strengthen the literature review. Personal interviews were conducted through interviewer-administered questionnaire as well as web-based survey to collect responses. The questionnaire was uploaded on www.surveymonkey.com and invitation to visit the website was sent through phone calls, SMS, emails, and social media (WhatsApp, Facebook, LinkedIn). Personal follow up was carried out through phone calls and emails in order to address respondent queries and incomplete questionnaires.

Data analysis

Analysis of the survey data was conducted through SPSS. Exploratory factor analysis (EFA) with principal component analysis (PCA) was conducted. Multivariate analysis of variance (MANOVA) test was conducted to test the hypotheses. Magnitude of inter correlation between the dependant variables (DVs) was checked. The effect sizes were calculated based on [Maher, Markey and Ebert-May \(2013\)](#) and APA guidelines. G*Power software was used to calculate effect sizes and power.

Exploratory factor analysis with PCA method was conducted on each of the subscales of the construct and extracted change factors ([Chandrapal & Brahmabhatt, 2015](#)).

Extraction of factors and construct validity

Initially, the factorability of 22 items of impact of liberalisation on the Indian insurance industry was examined. After the fifth iteration significant correlation (≥ 0.3 with at least one other item) across 18 items was found and reasonable factorability was observed. Absolute Kaiser-Meyer-Olkin (KMO) measure was found to be 0.951, which, following [Field \(2009\)](#) indicates sample adequacy. The KMO values for individual items (anti image matrices) were observed to be ≥ 0.894 , which was well above the acceptable limit of 0.5 ([Field, 2009](#)); therefore it was indicated that there was no need to increase the sample size and that distinct and reliable factors could be produced. Bartlett's test of sphericity $\chi^2 = 153 = 6872.556$, $p < .001$, revealed that there was a patterned relationship and correlations between the items were found sufficiently large for PCA. Three components had eigenvalues over Kaiser's criterion of 1 and the combinations together explained 67.90% of variances. Hence it was confirmed in the results of communalities that each item shared some common variance. Rotated component matrix output reveals significant values (> 0.5) that provided the best-defined factor structure for the 18 items. [Table 1](#) reveals summarised results of the EFA.

Table 1 Summary of exploratory factor analysis result (SPSS) for impact of liberalisation on Indian insurance industry ($N = 552$).

Name of variable	Description of variable	Components ^a		
		1	2	3
V28_loL	Major changes in insurance products	.833		
V34_loL	Product innovation	.812		
V35_loL	Competitive premium rates	.727		
V31_loL	Responsiveness of marketing network	.711		
V27_loL	Training initiatives	.707		
V30_loL	Sales promotional activities	.631		
V25_loL	Job opportunities	.555		
V26_loL	Satisfactory work culture		.886	
V23_loL	Improved customer services		.872	
V32_loL	Responsiveness of servicing network		.778	
V33_loL	Development of alternative channel		.576	
V22_loL	Customer-centric insurance market		.545	
V29_loL	Technology upgradation		.538	
V20_loL	Public's awareness of the need for insurance			.773
V21_loL	Education on financial planning			.770
V19_loL	Easy market access			.738
V18_loL	Increased competition			.542
V24_loL	More pronounced specialisation			.507
Eigenvalues (extraction sums of squared loadings)		9.51	1.675	1.036
% of variance (rotation sums of squared loadings)		26.886	21.021	19.989
α (Cronbach's alpha)		.915	.892	.851

Extraction method: PCA.—Rotation method: Varimax with Kaiser normalisation.^a

Rotation converged in 5 iterations.

^aThree factors.

Summary of EFA results (Table 1) reveals three factors which explain the entire set of 18 variables as linear combinations of the impact of liberalisation on Indian insurance industry; therefore, they were retained in the final analysis.

1. The first factor consisted of seven variables and explains 26.886% of variances. The variables that loaded highly on Factor 1 seem to relate to the aspects of the 7Ps of marketing (Product, Price, Promotion, Place, People, Process, and Physical evidence); therefore Factor 1 was labelled “Marketing Mix” (MM).
2. The second factor consisted of six variables and explains 21.021% of variances. The variables that loaded highly on Factor 2 seem to relate to the aspects of speedy, precise and accurate service delivery; therefore Factor 2 was labelled “Service Quality” (SRQ).
3. The third factor consisted of five variables and explains 19.989% of variance. Content area of variables that loaded highly on Factor 3 seems to represent the concern about customer awareness, education, and market access; therefore Factor 3 was labelled “Insurance Awareness” (IA).

Table 1 reveals reliability coefficient measures for the three factors; Cronbach's coefficient for MM was 0.915; 0.892 for SRQ, and 0.851 for IA; on the basis of George and Mallery's (2011) guideline we find that the Cronbach's

coefficient alpha scores indicate excellent internal consistency of the items in the scale.

Multivariate statistical results

Multivariate analysis of variance was conducted to test the null hypotheses that the linear combinations of impact of liberalisation on Indian insurance industry characterised by MM, SRQ and IA might differentiate between groups.

H_{01} : There is no significant effect of type of gender on the linear combinations of impact of liberalisation on Indian insurance industry characterised by MM, SRQ and IA.

Table 2 reveals summarised results of MANOVA test and measures of the effect sizes in respect of H_{01} .

Perception of types of gender (males and females) was measured on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

Table 2 reveals non-significant Box's M p (0.240) $>$ α (0.001); based on Huberty and Petoskey's (2000) guideline, there was no reason to reject the null hypothesis that the covariance matrices were equal. The test result indicates homogeneity of covariance matrices of the dependent variables across gender groups. The assumption of homogeneity of covariance matrices was met and therefore it was tenable for the purpose of MANOVA.

Table 2 MANOVA test results (design: intercept + V3) in respect of H_{01} .

Source	Multivariate test score ($df_H^a: 3^a, df_E^b: 548$)					Effect size (d)			Box's M test score ^c		
	Effect	Value	F	Sig.	η^2	f^2	Power	M	df^2	Sig	
V3 Gender ($N = 552$)	Wilks' Lambda	0.951	9.35	.000	.05	.051	0.99	8.05	340816.5	0.24	
	DVs	Tests of between-subjects effects ^d					Effect size (d)			Levene's test ^g	
		MS_M^e	MS_R^f	F	Sig	η^2	f	Power	F	Sig	
	MM	7.733	.353	21.90	.000	.038	.199	.99	2.05	.153	
	SRQ	0.953	.362	02.64	.105	.005	.069	.37	3.53	.061	
	IA	4.848	.320	15.15	.000	.027	.166	.97	.007	.935	

^aHypothesis df .^bError df .^cEquality of variance-covariance matrices.^dUnivariate ANOVA d-e. ($df_1: 1, df_2: 550$).^eMean square of model.^fMean square of residual.^gTest of equality of variances. η^2 = partial Eta squared.

The initial multivariate statistics across types of gender suggests that males were more influenced in respect of MM, SRQ and IA than females. Homogeneity of covariance (Box's M) was tenable therefore, based on the guidelines of Hair, Black, Babin and Anderson (2010); Wilk's Lambda was a criterion of choice to test significance of main effects and interactions.

Table 2 reveals a significant $p(0.000) < \alpha(0.05)$ MANOVA effect; therefore, it was confirmed that there was a significant difference between the perception of males and females on the linear combinations of impact of liberalisation on the Indian insurance industry.

Levene's test of equality of variances for each of the DVs across the gender groups was conducted; Table 2 reveals non-significant results in respect of MM $p(0.153)$, SRQ $p(0.06)$ and IA $p(0.94)$ which indicate that there was no violation in the homogeneity of between-group variance for all the DVs; therefore the assumption was met. However,

Field (2009) suggested that in large samples Levene's test can be significant even when group variances are not very different.

Table 2 reveals univariate ANOVA test results to follow significant MANOVA. Follow up univariate test results lead us to conclude that types of gender have a significant effect in respect of MM $p(0.000) < \alpha(0.05)$ and IA $p(0.000) < \alpha(0.05)$; however there was a non-significant effect in respect of SRQ $p(0.11) > \alpha(0.05)$. Therefore, it was confirmed that there was no difference in the perception of males and females on the impact of liberalisation on the Indian insurance industry in respect of SRQ. Yet the multivariate test results confirm that gender groups had a significant effect on each of the linear combinations. The multivariate test considers the correlation between DVs; therefore, it is to be assumed that groups differ along a combination of scores on DVs. Thus, the multivariate test has a greater power to detect group differences.

Table 3 MANOVA test results (design: intercept + V2) in respect of H_{02} .

Source	Multivariate test score ($df_H^a: 6, df_E^b: 1096$)					Effect size (d)			Box's M test score ^c		
	Effect	Value	F	Sig.	η^2	f^2	Power	M	df^2	Sig	
V2 place of residence ($N = 552$)	Pillai's trace	.436	50.89	.000	.22	.278	1.00	61.07	162,843.44	.000	
	DVs	Tests of between-subjects effects ^d					Effect size (d)			Levene's test ^g	
		MS_M^e	MS_R^f	F	Sig	η^2	f	Power	F	Sig	
	MM	17.50	.304	57.53	.000	.17	.458	1.00	00.12	.884	
	SRQ	18.19	.298	61.12	.000	.18	.472	1.00	13.17	.000	
	IA	35.56	.200	177.99	.000	.39	.805	1.00	04.02	.018	

^aHypothesis df .^bError df .^cEquality of variance-covariance matrices.^dUnivariate ANOVA d-e. ($df_1: 2, df_2: 549$).^eMean square of model.^fMean square of residual.^gTest of equality of variances. η^2 = partial Eta squared.

Since there were fewer than three groups in this case, structured multi group test could not be conducted for pair-wise comparison.

Table 2 indicates that the measure of Cohen's f^2 for local effect sizes of male and female dependence within a MANOVA was $d=0.05$; therefore according to Cohen's (1988) guidelines, ($f^2 \geq 0.02$, $f^2 \geq 0.15$, and $f^2 \geq 0.35$, represent small, medium, and large effect sizes, respectively) small effect size was observed. However, Power ($1 - \beta$ err prob) 0.99 was observed which could be considered excellent.

Table 2 indicates that the measures of Cohen's f for local effect sizes of males and females for MM, SRQ and IA were $d=0.20$, $d=0.07$ and $d=0.17$, respectively. According to Cohen's (1988) guidelines, ($f \geq 0.10$, $f \geq 0.25$, and $f \geq 0.40$ represent small, medium, and large effect sizes, respectively) small effect size was observed but excellent Power ($1 - \beta$ err prob) 0.99 in respect of MM; for SRQ, small effect size and low Power ($1 - \beta$ err prob) 0.37 was observed and for IA, small effect size and excellent Power ($1 - \beta$ err prob) 0.97 was observed.

Therefore, the MANOVA test of H_{01} rejects the null hypothesis and concludes that there is a significant effect of types of gender on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

H_{02} : There is no significant effect of types of place of residence on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

Table 3 reveals summarised results of MANOVA test and measures of the effect sizes in respect of H_{02} .

Perception of the types of place of residence (rural, semi urban and urban) was measured on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

Table 3 reveals significant Box's M $p(0.000) > \alpha(0.001)$; it indicates that there was a reason to reject the null hypothesis that the covariance matrices were equal; hence the covariance matrices of the dependant variables across types of place of residence were observed to be unequal. The assumption of equality of covariance matrices was violated for the purpose of MANOVA. Going by Huberty and Petoskey (2000) the p value would be considered "small" by most researchers, but large df^2 value makes the test very powerful; thus, the observed values did not deviate appreciably from the expected distribution. In this analysis, large df^2 value (162843.438) was observed; therefore, based on Huberty and Petoskey's (2000) guideline further analysis can be conducted under the assumption that the multivariate normal condition was plausible.

Tabachnick and Fidell (2007) argued that in the case of a large number of DVs, the greater the discrepancy in cell sample sizes, the greater the potential distortion of alpha levels in terms of Box's M .

The initial multivariate statistic in respect of MM, SRQ and IA suggests that the urban region was more influenced than the rural and semi urban; however, there was a greater influence on the semi urban than the rural, but less than on the urban. Thus, going by Hair et al's (2014) guideline, homogeneity of covariance (Box's M) was violated; Pillai's

trace was used as a criterion of choice to test significance of main effects and interactions.

Table 3 reveals significant $p(0.000) < \alpha(0.05)$ MANOVA effect; therefore, it was confirmed that there was a significant difference across the perception of types of place of residence on the linear combinations of impact of liberalisation on the Indian insurance industry.

Table 3 reveals summarised results of Levene's test of equality of between-group variances. According to Field (2009), in the case of large samples, Levene's test can be significant even when group variances are not very different (Arora, 2003). Hair et al. (2014) suggest that F tests are generally robust if violations of these assumptions are modest. There is evidence, however, that the F tests in ANOVA are robust with regard to the assumptions, except in extreme cases.

Levene's test determines the post hoc procedures to explore the source of significant difference. The non-significant result in respect of MM $p(0.884) > \alpha(0.05)$ reveals that there was no violation in the homogeneity of between-group variance for MM across rural, semi urban and urban subsets; therefore, the assumption was tenable for MM. However, significant results in respect of SRQ $p(0.000) < \alpha(0.05)$ and IA $p(0.02) < \alpha(0.05)$ reveal that there was violation in the homogeneity of between-group variance across rural, semi urban and urban subsets; therefore the assumption was violated for SRQ and IA. Based on Field's (2009) guideline analysis can be conducted under the assumption that the univariate normal condition was plausible (due to large sample size) for the purpose of ANOVA.

Table 3 offers information on the univariate test for the purpose of follow up of significant MANOVA; the results lead to the conclusion that types of place of residence have significant effect $p(0.000) < \alpha(0.05)$ and this confirms that there was significant difference across rural, semi urban and urban subsets on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA; further it was also confirmed that the violation of equality of between-group variance (Levene's test) had not posed any threat to the validity of the results. Finally, it was proved in the multivariate test results that types of place of residence had a significant effect on each of the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

The summarised results of the structured multi group test (post hoc method) for pair-wise comparison of types of place of residence by mean differences reveal the significance of trend of effect across types of place of residence. For MM, a significant trend of effect was observed between rural and semi urban subsets; the same trend of effect was found between rural and urban subsets. However, there was a non-significant trend of effect between semi urban and urban subsets. For SRQ and IA, significant trend of effect was observed across the types of place of residence (rural, semi urban and urban). (Details of the test are available upon request.)

Table 3 indicates measure of Cohen's f^2 for local effect sizes of types of place of residence dependence within a MANOVA was $d=0.28$; therefore, based on Cohen's (1988) guidelines, medium effect size was observed. However, Power ($1 - \beta$ err prob) 1.00 was observed as excellent.

Table 3 indicates measures of Cohen's f for local effect sizes of types of place of residence (rural, semi urban and urban): For MM: $d = 0.46$, SRQ: $d = .47$, and IA: $d = 0.81$; based on Cohen's (1988) guidelines large effect sizes were observed for all and Power ($1 - \beta$ err prob) 1.00 was also observed as excellent.

Therefore, the MANOVA test of H_{02} rejects the null hypothesis and concludes that there is a significant effect of types of place of residence on linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

H_{03} : There is no significant effect of the types of relationship with LIC on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

Table 4 reveals summarised results of MANOVA test and measures of effect sizes in respect of H_{03} .

Perception of the types of relationship with LIC (agents, policy holders and employees) was measured on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

Table 4 reveals significant Box's M $p(0.000) > \alpha(0.001)$; it indicates that there was a reason to reject the null hypothesis that the covariance matrices were equal. Hence the covariance matrices of the dependant variables across the types of relationship with LIC were observed to be unequal. The assumption of equality of covariance matrices was violated for the purpose of MANOVA.

The initial multivariate statistics suggest that policy holders were less influenced in respect of MM, SRQ and IA, than employees; it was also observed in respect of MM and IA that agents were more influenced than policy holders but less influenced than employees; however in respect of SRQ agents were less influenced than policy holders and employees were. Assumption of homogeneity of covariance was violated therefore based on Hair et al's (2014) guideline;

Pillai's trace was used as a criterion of choice to test significance of main effects and interactions.

Table 4 reveals significant MANOVA effect; therefore, it was confirmed that there was a significant difference across the perception of agents, policy holders and employees on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

Levene's test of equality of between-group variances for each of the DVs across agents, policy holders and employees was conducted. Table 4 indicates significant results $p(0.000) < \alpha(0.05)$ in respect of MM, SRQ and IA; this reveals that the assumption of homogeneity of between-group variance for all of the DVs was not met across agents, policy holders and employees and therefore the assumption was violated.

Table 4 offers information on the univariate test to follow a significant MANOVA; the follow up ANOVA test results in respect of MM, SRQ and IA lead us to conclude that the types of relationship with LIC have significant effect $p(0.000) < \alpha(0.05)$. Therefore, it was confirmed that there was difference in the perception of agents, policy holders and employees on the impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA; it was also confirmed that the violation of homogeneity of between-group variance has not posed any threat to validity of the results. Finally, it was also proved in the multivariate test results that the types of relationship with LIC had a significant effect on each of the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

The summarised results of the structured multi group test (post hoc method) for pair-wise comparison of the types of relationship with LIC reveal significance of trend of effect across the types of relationship with LIC. For MM and SRQ, significant trend of effect was observed across agents, policy holders and employees. For IA, agents were statistically significant with employees but not with policy holders; however, employees were significant with policy holders. (Details of the test are available upon request.)

Table 4 MANOVA test results (design: intercept + V10) in respect of H_{03} .

Source	Multivariate test score ($df_H^a: 6, df_E^b: 1096$)					Effect size (d)		Box's M test score ^c		
	Effect	Value	F	Sig.	η^2	f^2	Power	M	df^2	Sig
V10 Relation with LIC ($N = 552$)	Pillai's trace	.258	27.04	.000	.13	.148	1.00	264.11	1212325.87	.000
	DVs	Tests of between-subjects effects ^d				Effect size (d)		Levene's test ^g		
		MS_M^e	MS_R^f	F	Sig	η^2	f	Power	F	Sig
	MM	05.73	.347	16.56	.000	.057	.245	.99	35.71	.000
	SRQ	16.52	.304	54.39	.000	.165	.445	1.00	42.19	.000
	IA	05.74	.308	18.62	.000	.064	.260	.99	13.61	.000

^aHypothesis df .

^bError df .

^cEquality of variance-covariance matrices.

^dUnivariate ANOVA $d-e$. ($df_1:2, df_2:549$).

^eMean square of model.

^fMean square of residual.

^gTest of equality of variances. η^2 = partial Eta squared.

Table 5 MANOVA test results (design: intercept + V12) in respect of H_{04} .

Source group	Multivariate test score ($df_H^a: 6, df_E^b: 422$)					Effect size (d)			Box's M test score ^c		
	Effect	Value	F	Sig.	η^2	f^2	Power	M	df^2	Sig	
V12 types of employee in LIC ($N = 215$)	Pillai's trace	1.205	106.71	.000	.603	1.517	1.00	33.957	217,473.04	.001	
	DVs	Tests of between-subjects effects ^d				Effect size (d)			Levene's test ^g		
		MS_M^e	MS_R^f	F	Sig	η^2	f	Power	F	Sig	
	MM	15.01	.127	118.65	.000	.528	1.057	1.00	4.09	.018	
	SRQ	13.49	.096	140.77	.000	.570	1.152	1.00	1.08	.342	
	InsA	06.38	.151	42.33	.000	.285	0.631	1.00	.995	.372	

^aHypothesis df .^bError df .^cEquality of variance-covariance matrices.^dUnivariate ANOVA d-e. ($df_1:2, df_2:212$).^eMean square of model.^fMean square of residual.^gTest of equality of variances $\eta^2 =$ partial Eta squared.

Table 4 indicates measure of Cohen's f^2 for local effect size of the types of relationship with LIC dependence within a MANOVA was $d = 0.25$; therefore, based on Cohen's (1988) guidelines, medium effect size was observed; however Power ($1 - \beta$ err prob) 1.00 was observed as excellent.

Table 4 indicates measures of Cohen's f for local effect sizes of the types of relationship with LIC which were observed for MM: $d = 0.25$, for SRQ: $d = 0.45$ and for IA: $d = 0.26$; therefore based on Cohen's (1988) guidelines, large effect sizes were observed and Power ($1 - \beta$ err prob) 0.99 was observed to be excellent.

Therefore, MANOVA test of H_{03} rejects the null hypothesis and concludes that there is a significant effect of types of relationship with LIC on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

H_{04} : There is no significant effect of types of employee position in LIC of India on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

Perception of types of employee position in LIC (Assistants/Higher Grade Assistants (HGAs), Development Officers/Senior Business Associates (SBAs) and Class-1 Officers) was measured on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

Table 5 reveals significant Box's M p (0.000882) $> \alpha$ (0.001); it indicates that there was no reason to reject the null hypothesis that the covariance matrices were equal. Hence the covariance matrices of the dependant variables across the types of employee position in LIC were observed to be unequal. The assumption of equality of covariance matrices was violated for the purpose of MANOVA. However, based on Huberty and Petoskey's (2000) guideline further analysis can be conducted under the assumption that the multivariate normal condition was plausible for the purpose of significant MANOVA.

The initial multivariate statistics in respect of MM and IA suggest that Assistants/HGAs were less influenced than

Development Officers/SBAs and Class-1 Officers; however, Assistants/HGAs were more influenced than Development Officers/SBAs but less than Class-1 Officers in respect of SRQ. It was also observed that Development Officers/SBAs were less influenced than Class-1 Officers in respect of SRQ and IA; however, in respect of MM they were more influenced than t Class-1 Officers. Homogeneity of covariance was violated therefore according to Hair et al's (2014) guideline; Pillai's trace was used as a criterion of choice to test significance of main effects and interactions.

Table 5 reveals significant value $p(0.000) < \alpha(0.05)$ of MANOVA; therefore it was confirmed that there was a significant difference in the perception of the Assistants/HGAs, Development Officers/SBAs and Class-1 Officers on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

Table 5 reveals summarised results of Levene's test of equality of between-group variances. Significant result for MM $p(0.02) < \alpha(0.05)$ reveals that the assumption of homogeneity of between group variance across Assistants/HGAs, Development Officers/SBAs and Class-1 officers was violated. Non-significant results were observed for SRQ $p(0.34) > \alpha(0.05)$ and IA $p(0.37) > \alpha(0.05)$; results indicate that the assumption of homogeneity of between-group variance for SRQ and IA across Assistants/HGAs, Development Officers/SBAs and Class-1 Officers were met and therefore it was tenable.

To follow a significant MANOVA, univariate test was conducted (Table 5). The test results lead us to conclude that the type of employee position in LIC has significant effect p (0.000) $< \alpha$ (0.05) in respect of MM, SRQ and IA; therefore it was confirmed that there was difference across Assistants/HGAs, Development Officers/SBAs and Class-1 Officers on the linear combinations of the impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA. It was also confirmed that the violation in the assumption of homogeneity of between-group variances in respect of MM had not posed any threat to validity of the result. Finally, it was also proved in the multivariate test results that the types of employee position in LIC had a significant effect on each of the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

The summarised results of the structured multi group test (post hoc method) for pair-wise comparison of types of employee position in LIC indicate the significance of the trend of effect across Assistants/HGAs, Development Officers/SBAs and Class-1 Officers. For MM, significant trend of effect was observed between Assistants/HGAs and Development Officers/SBAs as well as Class-1 Officers; however non-significant trend of effect was observed between Development Officers/SBAs and Class-1 Officers. For SRQ significant trend of effect was observed across the all subsets of employee position with LIC. For IA, significant trend of effect was observed between Assistants/HGAs and Development Officers/SBAs as well as Class-1 Officers; however, non-significant trend of effect was observed between Development Officers/SBAs and Class-1 Officers. (Details of the test are available upon request.)

Table 5 indicates that measure of Cohen's f^2 for local effect size of types of employees position in LIC dependence within a MANOVA was $d = 1.52$; therefore based on Cohen's (1988) guidelines, very large effect size was observed and Power ($1 - \beta$ err prob) 1.00 was also observed to be excellent.

Table 5 indicates measure of Cohen's f for local effect sizes of types of employees position in LIC which were observed for MM: $d = 1.06$, SRQ: $d = 1.15$ and IA: $d = 0.63$; based on Cohen's (1988) guidelines large effect sizes were observed and Power ($1 - \beta$ err prob) 1.00 was also observed to be excellent.

Therefore, the MANOVA test of H_{04} rejects null hypothesis and concludes that there was a significant effect of types of employee position in LIC on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

H_{05} : There is no significant effect of types of relationship with private players on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

Table 6 reveals summarised results of MANOVA test and measures of the effect size in respect of H_{05} .

Perception of types of relationship with private players (advisors, customers and employees) was measured on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

Table 6 reveals significant Box's M $p(0.000) < \alpha(0.001)$; it indicates that there was no reason to reject the null hypothesis that the covariance matrices were equal; hence the covariance matrices of the dependant variables across the types of relationship with private players were observed to be unequal. The assumption of equality of covariance matrices was violated for the purpose of MANOVA. However, based on Huberty and Petoskey's (2000) guideline, further analysis can be conducted under the assumption that multivariate normal condition was plausible for the purpose of significant MANOVA.

The initial multivariate statistics in respect of MM, SRQ and IA suggest that advisors were more influenced than customers; however, they were less influenced than employees; customers were less influenced than advisors and employees. Homogeneity of covariance (Box's M) was violated therefore, based on Hair et al's (2014) guideline; Pillai's trace was used as a criterion of choice to test significance of main effects and interactions.

Table 6 reveals that significant $p(0.000) < \alpha(0.05)$ MANOVA effect was obtained; therefore it was confirmed that there was a significant difference in the perception of advisors, customers and employees on the linear combination of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

Table 6 offers information on summarised results of Levene's test of equality of between-group variances that indicate significant results for MM and SRQ $p(0.000) < \alpha(0.05)$ which reveals that the assumption of homogeneity of between-group variance across advisors, customers and employees was violated. Non-significant results were observed for IA $p(0.05) > \alpha(0.05)$; the result indicates that the assumption of homogeneity of between-group variance for IA across advisors, customers and employees was met. Therefore, the assumption was tenable. Based on Field's (2009) guideline further analysis can be conducted for the purpose of significant MANOVA.

Table 6 MANOVA test results (design: intercept + V17) with respect to H_{05} .

Source	Multivariate test score ($df_H^a: 6, df_E^b: 192$)					Effect size (d)		Box's M test score ^c		
	Effect	Value	F	Sig.	η^2	f^2	Power	M	df^2	Sig
V17 relation with private players ($N = 100$)	Pillai's trace	.605	13.88	.000	.30	.433	1.00	45.68	3023.67	.000
	DVs	Tests of between-subjects effects ^d					Effect size (d)		Levene's test ^g	
		MS_M^e	MS_R^f	F	Sig	η^2	f	Power	F	Sig
	MM	09.97	.22	44.61	.000	.48	0.959	1.00	11.86	.000
	SRQ	13.62	.19	72.90	.000	.60	1.225	1.00	07.35	.001
	InsA	05.20	.18	29.32	.000	.38	0.777	0.99	03.08	.051

^aHypothesis df .

^bError df .

^cEquality of variance-covariance matrices.

^dUnivariate ANOVA d-e. ($df_1:2, df_2:97$).

^eMean square of model.

^fMean square of residual.

^gTest of equality of variances. η^2 = partial Eta squared.

Table 6 reveals information on the univariate test for the purpose of follow up of significant MANOVA; the results lead us to conclude that the types of relationship with private players have significant effect $p(0.000) < \alpha(0.05)$ for MM, SRQ and IA; therefore, it was confirmed that there was significant difference across advisors, customers and employees on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA. Hence it was also confirmed that the violation of equality of between-group variances in respect of MM and SRQ has not posed any threat to validity of the result. It was also confirmed in the multivariate test result that types of relationship with private players had a significant effect on each of the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

The summarised results of the structured multi group test (post hoc method) for pair-wise comparison of types of relationship with private players indicate the significance of the trend of effect across advisors, customers and employees. For MM, significant trend of effect was observed between advisors and customers but non-significant trend of effect was observed between advisors and employees. There was a significant trend of effect between customers and employees. For SRQ, significant trend of effect was observed between advisors and customers but there was non-significant trend of effect between advisors and employees. However, there was a significant trend of effect between customers and employees. For IA advisors' results were significant with customers' results but non-significant with employees'. Customers' results were significant with those of advisors and employees. (Details of the test are available upon request.)

Table 6 indicates that measures of Cohen's f^2 for local effect sizes of type of relationship with private players dependence within a MANOVA was $d=0.43$; According to Cohen's (1988) guidelines large effect size was observed and Power ($1 - \beta$ err prob) 1.00 was also observed as excellent.

Table 6 indicates measures of Cohen's f for local effect sizes of type of relationship with private players were observed for MM: $d=0.96$; for SRQ: $d=1.23$; and for IA: $d=0.78$. On the basis of Cohen's (1988) guidelines large effect size was observed and Power ($1 - \beta$ err prob) 1.00 was also observed to be excellent.

Therefore, MANOVA test of H_{05} rejects null hypothesis and concludes that there is a significant effect of type of relationship with private players on the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

Discussion of major findings

The comprehensive investigation of the linear combinations of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA has produced significant results and the examination of trend of effect on the linear combinations across groups has proved our hypotheses. However, there were varied degrees of influence across the groups.

The results of MANOVA indicate significant differences in perception on the linear combinations of impact of liberalisation on the Indian insurance industry across groups; hence the hypotheses were proved and it was confirmed that there was a significant effect of the groups on the linear combinations

of impact of liberalisation on the Indian insurance industry characterised by MM, SRQ and IA.

However, follow up ANOVA results contradict the significant MANOVA results in respect of SRQ across gender. Non-significant follow up ANOVA results were observed in respect of SRQ across males and females. The results yield small effect size and low power; this indicates poor service quality as a wide gap between perceived Service Quality and expected Service Quality. In line with Dubey's (2005) findings poor service quality was observed as a challenge. The results also lead us to conclude in line with Jawaharlal and Rath's (2005) observation that there was a shift from product centric enterprise to customer centric enterprise due to changing customer expectation.

Very small trend of effect in respect of perception of males and females on MM, SRQ and IA suggests the reduced gap between males and females. The results might be influenced by some of the socio-cultural changes such as woman empowerment in India; on the other hand, smaller trend of effect was observed in respect of perception on the linear combinations of impact of liberalisation on the Indian insurance industry between semi urban and urban. The reduced gap between semi urban and urban might be on account of the digital revolution and infrastructural development in the country.

A wide gap was observed in respect of IA across types of place of residence. There was a very small trend of effect on IA in respect of rural subset as compared to semi urban and urban. Therefore, it was concluded in line with the findings of Gupta (2014) that there was low insurance awareness in rural India as compared to semi urban and urban India. In line with Kshetrimayum's (2011) observations the results of the present study confirm that life insurance companies in India are developing new products but have failed to penetrate rural areas where a huge market lies.

Results also indicate that there was a wide gap in respect of MM in the perception of Assistants/HGAs, Development Officers/SBAs and Class-1 Officers. Assistants/HGAs have a large significant negative effect in respect of MM by mean differences as compared to Development Officers/SBA and Class-1 Officers. The results indicate that the administrative wings have a very low involvement in marketing activities.

Fig. 1 offers information that the positive impact of liberalisation on the Indian life insurance industry was observed by 75% of the respondents; 24% of the respondents have observed neither negative nor positive impact and only 0.7% of the respondents have observed negative impact. Therefore, it was concluded in line with the study results of Ghosh (2013), Kshetrimayum (2011), and Kumari (2013) that there was a positive impact of liberalisation on the Indian life insurance industry.

Impact of Liberalization on Indian Life Insurance Industry?

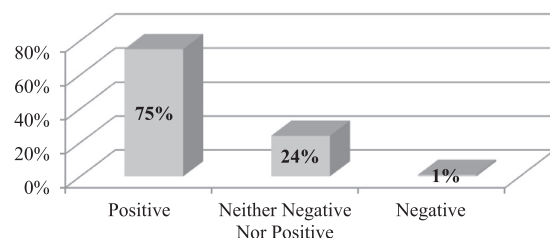


Figure 1 Impact of liberalisation on Indian life insurance industry.

Synthesis of findings

On summarising the results of our study, we observe that there was a positive impact of liberalisation on the Indian life insurance industry in respect of transformation in Marketing Mix, Assessment of Service Quality, and Insurance Education and Awareness that leads to overall growth and development of the insurance industry. However, there was a wide gap between perceived service quality and expected service quality. Results also indicate a wide gap regarding perception on Marketing Mix amongst Assistants/HGAs, Development Officers/SBA and Class-1 Officers of LIC. A wide gap has been found in respect of insurance awareness across types of place of residence. Findings of this study indicate a very small effect on insurance awareness in respect of rural subset as compared to semi urban and urban. Findings of this study indicate a large and positive impact of liberalisation on the Indian life insurance industry on Marketing Mix as compared to Service Quality and Insurance Awareness.

Implications

- Significant MANOVA results reveal overall growth of the Indian life insurance industry in the post liberalisation landscape. However, the results of effect sizes indicate weak effect of service quality. There was a wide gap between perceived service quality and expected service quality which implies that the expectation of customers is rising continuously and customers are demanding world class services. Therefore, Indian life insurers have to find a better match between perceived service quality and expected service quality.
- Minimal or negligible effect across genders on Service Quality leads us to conclude that there was a reduction of power distance across males and females. Majority of studies have endorsed the theoretical underpinning that there always has been a difference between males and females. [Bageant and Barrett \(2015\)](#) observed that the social norms and institutions that render women's physical, social and economic vulnerabilities are different from those of men. However some of the socio-economic-cultural changes such as increasing level of education in females, growing earning abilities and women empowerment programmes might have influenced the results; this could explain the anomaly in the results of MANOVA and follow up ANOVA in respect of SRQ across gender that restricts us from generalising results in line with previous studies.
- Very small effect of insurance awareness on the rural subset raises concern for insurance penetration and density. Very small mean differences between urban and semi urban subsets indicate the blurring boundaries between urban and semi urban that might be a result of digital revolution and infrastructural development.

Recommendations

Recommendation for change

On the basis of the empirical findings, we offer the following recommendations in light of the changes that have occurred

on account of the impact of liberalisation on the Indian life insurance industry.

- The trend of insurance awareness in respect of types of place of residence and the business figures indicate decreasing trend of new business in the rural areas; therefore it is recommended that Indian life insurers develop their focus on the rural areas for new business procurement by way of increasing insurance awareness in the rural segment. This would in turn lead to increase in insurance penetration and density.
- Findings of present study indicate a mismatch between perceived service quality and expected service quality; therefore, it is recommended that Indian life insurers innovate on service delivery.
- There was a wide gap in the perceptions of the employees of LIC regarding Marketing Mix, Service Quality and Insurance Awareness; therefore we recommend that Indian life insurers organise more training and development programmes for their employees particularly for the equivalent of Assistants and HGAs; employee engagement programmes and human resources development programmes could be an effective tool to reduce the gap. It would also be fruitful in establishing industrial harmony.

Recommendation for future research

In these empirical study correlations, variances and effects of various dimensions of impact of liberalisation on the Indian life insurance industry were examined with the help of quantitative methodological applicability. An explanatory model (Marketing Mix, Service Quality and Insurance Awareness—MSI) was developed to measure the impact of liberalisation on the Indian life insurance industry through the three dimensions of Marketing Mix, Service Quality and Insurance Awareness.

There is more scope in determination of predictors; for example, agents can be categorised in terms of club membership, Class-1 officers can be categorised in terms of their job portfolios, and so on.

While the present study is quantitative in nature, qualitative approaches such as SWOT (Strength, Weakness, Opportunity, Threat) analysis and PESTEL (Political, Economic, Social, Technological, Environmental, Legal) framework can also be employed to measure impact of liberalisation in respect of functional performance.

In terms of methodological applicability there is scope to follow up MANOVA with discriminant function analysis; furthermore, structural equation modelling, a family of statistical analysis tool can be employed to examine measures of group differences amongst variables.

Conclusion

The Indian life insurance industry transitioned from a non-protective, open market one to a state-owned protected market after nationalisation and thereafter to an open competitive market post liberalisation. The GoI liberalised the insurance sector in March 2000 with the passage of the IRDA bill. Most studies have indicated a positive impact of the liberalisation on the Indian life insurance industry. However,

very few studies have extracted the change factors induced by liberalisation. Most researchers have observed impact in terms of innovative products, development of distribution channel, technology development, increased penetration and density, improved service quality, technological advancement, growing employment opportunity, increased productivity, and so on, which present evidence on one or more aspects that proves a positive or negative impact of liberalisation. However, none of these studies provide a complete picture of changes that have occurred over the last decade. The present study has examined the impact of liberalisation on the Indian life insurance industry in terms of efficiency characterised by overall functional performance. It has provided a complete and clear picture of changes that have occurred over the last decade. Three major areas of functional performance designated as Marketing Mix, Service Quality and Insurance Awareness were measured across demographic and psychographic groups. The significant results manifest the positive impact of the liberalisation on the Indian life insurance industry. However, Service Quality and Insurance Awareness were found weaker than Marketing Mix and this is perceived as a challenge. While there was an appreciable growth in the new business, the penetration and density had not increased as expected according to the recommendations of the Malhotra committee. Therefore, we conclude that while there is a positive impact of liberalisation on the Indian life insurance, there is a great challenge in respect of providing world class service quality and increasing penetration and density.

References

- Agarwal, R. (2004). Bancassurance. *The Insurance Times*, pp. 19-26.
- Agarwal, V.K. (2002). Insured expectation in a liberalized insurance market. *The Insurance Times*, pp. 31-34.
- Andelić, G., Čosić, I., & Đaković, V. (2010). The impact of globalization on the insurance and reinsurance market of Eastern Europe. *South East European Journal of Economics and Business, Sciendo* 5 (1), 95-112.
- Arestis, P. (2005). Financial liberalisation and the relationship between finance and growth. University of Cambridge. Centre for Economic and Public Policy, CEPP Working Paper No. 05/05 June 2005. Retrieved November 5, 2012, from www.landecon.cam.ac.uk: http://www.landecon.cam.ac.uk/research/real-estate-and-urban-analysis/centres/ccepp/copy_of_ccepp-publications/wp05-05.pdf.
- Arora, B. (2003). Role of I.T. in L.I.C. *The Journal of Insurance Institute of India* 29, 43-45.
- Bageant, E.R., & Barrett, C.B. (2015). Gender differences in demand for index-based livestock insurance. Retrieved May 24, 2015, from http://barrett.dyson.cornell.edu: http://barrett.dyson.cornell.edu/files/papers/150424_BageantBarrett_Gender.pdf.
- Bajpai, G.N. (2006). Insurance industry - India's quest for cover. In: Sadhak, D.H. (Ed.), *Bima Vidya*, pp. 4-11.
- Banumath, S., & Karunanithi, G. (2007). Term insurance schemes of LIC of India and other insurance companies - a comparative study. In: Ravichandran, K. (Ed.), *Recent trends in insurance sector in India*. Abhijeet Publications, Delhi, pp. 25-31.
- Baur, E., Birkmaier, U., & Rüstmann, M. (2001). The economic importance of insurance in central and Eastern Europe and the impact of globalisation and e-business. Swiss Re, *Economic Research & Consulting*, Zurich, pp. 7-25.
- Boardman, A.E., & Vining, A.R. (1989). Ownership and performance in competitive environments: A comparison of the performance of private mixed and state-owned enterprises. *Journal of Law and Economics* 32 (1), 1-33.
- Brokešová, Z., Pastoráková, E., & Ondruška, T. (2014). Determinants of insurance industry development in transition economies: Empirical analysis of Visegrad group data. *The Geneva Papers on Risk and Insurance—Issues and Practice* 39 (3), 471-492.
- Bumann, S., Hermes, N., & Lensink, R. (2012). Financial liberalisation and economic growth: A meta-analysis. EPPI-Centre, Social Science Research Unit, Institute of Education, University of London, London Technical report.
- Chandirakala, S. (2010). The role of insurance sector in Indian economic growth. *Pravartak - The Journal of Insurance and Risk Management* 5 (2), 28-32.
- Chandrapal, J.D., & Brahmabhatt, A.C. (2015). Impact of liberalization on Indian life insurance industry - An exploratory factor analysis. More, D.V. (Ed.), 2015. Impact of liberalization on Indian life insurance industry - An exploratory factor analysis. *Researcher's World - Journal of Arts, Science & Commerce* 6 (2), 93-105.
- Chari, V.G. (2005). Insurance - A relook at the distribution strategy. *Insurance Chronicle*, pp. 28-36.
- Chaudhary, K., Singla, J., & Chaudhary, N. (2014). Examining expected and perceived service quality in Life Insurance Corporation of India. *International Journal of Application or Innovation in Engineering & Management (IJAEM)* 3 (1), 274-282. <https://www.ijaem.org/volume3issue1/IJAEM-2014-01-28-069.pdf>.
- Chawla, S., & Singh, F. (2008). Service quality perceptions of life insurance policyholders in northern India: Pre-privatization vs. post-privatization. *The ICFAI University Journal of Marketing Management* 7 (4), 24-53.
- Choudhuri, P.S. (2013). Introduction of information technology in Life Insurance Corporation of India vis-à-vis entry of private insurers in Indian life insurance market. *SIT Journal of Management* 3, 64-74.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*, 2nd ed. Erlbaum, Hillsdale, NJ.
- Čurak, M., Lončar, S., & Poposki, K. (2009). Insurance sector development and economic growth in transition countries. *International Research Journal of Finance and Economics* 34, 29-41.
- Dhevan, K., & Shanmugasundaram, A. (2007). Present trends in insurance industry in India. In: Ravichandran, K. (Ed.), *Recent trends in insurance sector in India*. Abhijeet Publications, Delhi, pp. 59-66.
- Dubey, O.P. (2005). Indian insurance market - Issues, challenges, opportunities and strategies. Allied Publishers, New Delhi India Insurance Report: Series-1, July 2005, Centre for Insurance and Risk Management - Birla Institute of Management.
- Field, A. (2009). *Discovering statistics using SPSS*, 3rd ed. SAGE Publications, London.
- Garg, M.C., & Verma, A. (2010). An empirical analysis of marketing mix in life insurance industry in India. *IUP Journal of Management Research* 9 (2), 7-20.
- George, D., & Mallery, P. (2011). *SPSS for windows step by step: A simple guide and reference 18.0 update*. Allyn & Bacon/Pearson, Boston.
- Ghosh, A. (2013). Life insurance in India: The relationship between reforms and growth in business. *The Geneva Papers on Risk and Insurance - Issues and Practice* 38 (1), 88-112. doi: 10.1057/gpp.2012.2.
- Godden, B. (2004, January). Sample size formula. Retrieved September 21, 2012, from <http://williamgodden.com: http://williamgodden.com/samplesizeformula.pdf>
- Gupta, A.K. (2014). Life insurance market: The rural india connect. *Management Insight* 10 (1), 81-86.
- Hair, Jr., J.F., Black, W.C., Babin, B.J., & Anderson, R.E. (2010). *Multivariate data analysis: A global perspective*, 7th Edition Pearson Education Inc.
- Hair J., et al. (2014). *Multivariate Data Analysis-Pearson's New International*, 7th ed. Pearson Education Inc.

- Hu, X., Zhang, C., Hu, J., & Zhu, N. (2009). Analyzing efficiency in the Chinese life insurance industry. *Management Research News* 32 (10), 905-920. doi: 10.1108/01409170910994123.
- Huberty, C.J., & Petoskey, M.D. (2000). Multivariate analysis of variance and covariance. In: Tinsley, H.E.A., Brown, S.D. (Eds.), *Handbook of applied multivariate statistic and mathematical modelling*. 1st ed. Academic Press Inc.
- IRDA. (2007, July 12). "History of insurance in India". Retrieved from <https://www.irdai.gov.in>: https://www.irdai.gov.in/ADMINCMS/cms/NormalData_Layout.aspx?page=PageNo4&mid=2.
- Jain, Y. (2013). Economic reforms and world economic crisis: Changing Indian life insurance market place. *IOSR Journal of Business and Management (IOSR-JBM)* 8 (1), 106-115.
- Jawaharlal, U. Swiss Re, Economic Research & Consulting. Going with the tide - Risk assessment in life insurance. *The Journal - Insurance Institute of India* 36, 11-14.
- Jawaharlal, U., & Rath, S.K. (2005). Customer-centricity in the insurance industry. *Insurance Chronicle*, pp. 20-24.
- Jampala, R.C., & Rao, B.V. (2007). Distribution channels of LIC: Are they effective, V11. *Insurance Chronicle*, pp. 72-75.
- Joshi, N.N. (2005). Indian insurance - Issues, challenges and opportunities: The rural markets hold the key. India Insurance Report: Series-1, July 2005, Centre for Insurance and Risk Management - Birla Institute of Management. Allied Publishers Pvt. Ltd., New Delhi.
- Khanal, D.R. (2007). Banking and insurance services liberalization and development in Bangladesh, Nepal and Malaysia: A comparative analysis. Asia-Pacific Research and Training Network on Trade Working Paper Series, No 41, July 2007 (rev. Oct. 07) Retrieved Oct 12, 2012, from <http://www.unescap.org/>; <https://www.unescap.org/sites/default/files/AWP%20No.%2041.pdf>.
- Kshetrimayum, S.D. (2011). Study of impact of liberalization on Indian life insurance industry. Thesis submitted to Department of Economics, The Maharaja Sayajirao University, Vadodara, Gujarat, India.
- Kumar, M. (2004). Marketing and distribution channels in bancassurance. *The Insurance Times*, pp. 44-50.
- Kumari, T.H. (2013). Performance evaluation of Indian life insurance industry in post liberalization. *International Journal of Social Sciences Arts and Humanities* 1 (1), 7-16.
- Lee, C.C., & Chang, C.H. (2012). Globalization and convergence of international life insurance markets. *The Geneva Papers on Risk and Insurance - Issues and Practice* 37 (1), 125-154. doi: 10.1057/gpp.2011.34.
- Maher, J.M., Markey, J.C., & Ebert-May, D. (2013). The other half of the story: Effect size analysis in quantitative research. *CBE—Life Sciences Education* 12 (3), 345-351.
- Manoharan, B. (2007). Performance of life insurance business in India. In: Ravichandran, K. (Ed.), *Recent trends in insurance sector in India*. Abhijeet Publications, Delhi, pp. 87-98.
- Martina, & Sairani, P. (2010). Life insurance—A privatized market. *Pravartak - The Journal of Insurance and Risk management* 5 (2), 19-27.
- Meenu (2013). Impact of globalization and liberalization on indian administration. *International Journal of Marketing, Financial Services & Management Research* 2 (9), 120-125.
- Mishra, K.C., & Mishra, S. (2005). *The game is changing - Insurance reloaded*, 1st ed. ICFAI University Press - Hyderabad, Pune, Maharashtra, India.
- Mrak, M. (2000). Globalization: Trends, challenges and opportunities for countries in transition. Retrieved September 23, 2012, from www.unido.org: <http://www.unido.org/en/resources/publications/imported-publications/globalization-trends-challenges-and-opportunities-for-countries-in-transition.html> https://www.unido.org/sites/default/files/2006-10/mrak_0.pdf.
- Murthy, G.R., & Mohamed, P.C. (2013). A study on level of service quality of Life Insurance Corporation of India - with special reference to Chennai district. *Global Research Analysis International* 2 (4), 28-33.
- Nagananthini, T. (2009). Life insurance corporation - The leader on the backfoot. In: Vijayakumar, A. (Ed.), *Indian insurance sector in 21st century: An outlook*. Kalpaz Publication, Delhi, pp. 148-169.
- Narayanan, H. (2009). *Indian insurance - A profile*, 1st ed. Jaico Publishing House, New Delhi.
- Palande, P.S., Shah, R.S., & Lunawat, M.L. (2003). *Insurance in India - Changing policies and emerging opportunities*, 1st ed. Response Books - Sage Publications India, New Delhi.
- Ponreka, M.D., & Surya Rao, U. (2009). Customer satisfaction with service quality with special reference to Life Insurance Corporation in Madurai district. *Advances in Management* 2 (10), 49-53.
- Prabhakara, G. (2010). The evolution of life insurance industry in the last decade (2000-2010). *The Journal - Insurance Institute of India* 36, 3-10.
- Prakash, N., & Sugumaran, G. (2014). Service quality dimension: Comparison between public and private life insurance companies. *Madras University Journal of Business and Finance* 2 (1), 63-68.
- Qureshi, M.N.Z., & Bhat, J.A. (2015). An assessment of service quality, customer satisfaction and customer loyalty in Life Insurance Corporation of India with special reference to Srinagar district of Jammu and Kashmir. *Pacific Business Review International* 7 (8), 60-70.
- Rajendran, R., & Natarajan, B. (2010). The impact of liberalization, privatization, and globalization (LPG) on Life Corporation of India (LIC). *African Journal of Business Management* 4 (8), 1457-1463.
- Ramana, B.V. (2007). Globalization: Impact on insurance. *Insurance Chronicle*, pp. 17-22.
- Rao, C.S. (2005). *Indian insurance industry: New avenues for growth*. Allied Publishers, Greater Noida Birla Institute of Management Technology.
- Rao, C.S. (2008). Indian insurance industry: Post-liberalization landscape. Administrative Staff College of India, Hyderabad K. L. N. Prasad Memorial Lecture(Booklet: 1-50).
- Rao, T.S.R. (2007). *The Indian insurance industry: The road ahead*. Insurance Chronicle, pp. 31-35.
- Selvakumar, M., & Priyan, V.J. (2010). Indian life insurance industry prospect for private sector. *The Journal - Insurance Institute of India* 35, 52-57 2010.
- Siddiqui, S.A. (2014). Agency channel vs. alternate channel in Indian life insurance: Behavioral analysis of individual investor. Retrieved June 23, 2014, from <http://jism.net.in/>: http://jism.net.in/article/jan14/jism_jan14_agency.pdf.
- Sinha, T. (2005, May 3). Bancassurance in india: Who is tying the knot and why. Retrieved January 31, 2015, from <https://ssrn.com>: <https://ssrn.com/abstract=715203>.
- Skipper, H.D. (1997). Foreign insurers in emerging markets: Issues and concerns. International Insurance Foundation, Washington, DC Center for Risk Management and Insurance Occasional Paper 97-2.
- Sri Jyothi, T. (2008). CRM practices in Indian insurance sector. *Insurance Chronicle*, pp. 64-70.
- Srivastava, A., Tripathi, S., & Kumar, A. (2012). Indian life insurance industry - the changing trends. *Reseachers World - Journal of Arts, Science & Commerce, Vol. III* 2 (3), 98.
- Sureshchandar, G.S., Chandrasekharan, R., & Kamalanabhan, T.J. (2001). Customer perceptions of service quality: a critique. *Total Quality Management* 12 (1), 111-124.
- Tabachnick, B.G., & Fidell, L.S. (2007). *Using multivariate statistics*. In: Hartman, S. (Ed.), 5th ed Pearson Education Inc, Northridge, California.
- Vadlamannati, K.C. (2008). Do insurance sector growth and reforms affect economic development? Empirical evidence from India. *Margin—The Journal of Applied Economic Research* 2 (1), 43-86. doi: 10.1177/097380100700200102 SAGE Publications, Retrieved April 08, 2017, from <http://journals.sagepub.com/doi/pdf>.
- Venkaiah, A., & Sudhir, B. (2013). Marketing of life insurance services. *Research Journal of Social Science and Management* 3 (2), 150-156.