Performance Analysis of Indian Life Insurance Companies using the Analytic Hierarchy Process

Sheikh Shahnawaz
MBA
E-mail: shahnawazsheikh145@gmail.com

ABSTRACT

In this paper, both secondary and primary data is used for analysis of the performance of Indian Insurance Companies using the AHP technique. In order to solve the complex decision of choosing the insurance company, five criteria were taken into consideration and their pairwise comparison to calculate the AHP Scores of 15 such companies which are ruling the market currently. We could find out the significant positive relationship between the parameters and their composite scores depicting that these five criteria (premium, benefits, product diversity, customer service, distribution network) are mainly considered before the buying decision is made. However, the most stronger criterion among these was the premium and the associated benefits of the various insurance policies.

Keywords: Insurer, Market Share, Insurance Premium, Claims, Insurance Coverage, Term Assurance, Settlement.

1. Introduction

The life insurance industry in India is one of the biggest life insurance industries in the world, with over 360 million policies, and expected to grow at a rate of about 15% for the next five years, with increased life insurance penetration levels to at least 5% by 2020.[1] In 2013, India ranked eleventh among eighty-eight countries in the life insurance business, with a share of 2.1%, and ranked twenty-first in the global non-life insurance market with a share of 0.7%; it is the twentieth largest insurance market in the world in terms of premium volume.

The roots of the modern Indian life insurance industry originated with the incorporation of the Life Insurance Corporation (LIC) in 1956, consolidating together one hundred and fifty-six Indian and sixteen non-Indian insurers. The LIC was the sole player in the market until the late 1990s when the insurance sector was reopened to the private sector. There are currently twenty-four players in the Indian life insurance industry, the largest of which is the LIC, the only public sector life insurance company. Table 1 below presents all of the registered life insurance companies in India.

Table 1: registered life insurance companies in India

1	Bajaj Allianz Life	13	Sahara Life
2	Exide Life	14	Shriram Life
3	Reliance Life	15	Bharti Axa Life
4	SBI Life	16	Future Generali Life
5	Tata AIA Life	17	IDBI Federal Life
6	HDFC Standard Life	18	Canara HSBC OBC Life
7	ICICI Prudential Life	19	Aegon Life
8	Birla Sun Life	20	DHFL Pramerica Life
9	Aviva Life	21	Star Union Dai-Ichi Life
10	Kotak Mahindra Old Mutual Life	22	India First Life
11	Max Life	23	Edelweiss Tokio Life
12	PNB Met Life	24	Life Insurance Corporation

The Indian insurance industry can be categorized into two major market segments based on the purpose and service provided by them, viz. life insurance, catering to the needs regarding any incident of the death, and non-life insurance, which includes companies which provide insurance facilities against health, motor, fire, marine, and so on. Another segment is re-insurance, which has a sole operating player (GIC). Life insurance is a major segment of the insurance industry. The regulator of the industry is the Insurance Regulatory and Development Authority (IRDA), which was constituted following the recommendations of the Malhotra Committee report under the IRDA Act in 1999, as an autonomous body responsible for regulating, promoting, and ensuring orderly growth of the insurance industry, and was incorporated as a statutory body in April 2000.

Other stakeholders in the Indian insurance market include agents (individual and corporate), brokers, surveyors and third party administrators servicing insurance claims.

The Indian insurance market is a huge business opportunity waiting to be harnessed. India currently accounts for less than 1.5% of the world's total insurance premiums and about 2.1% of the world's life insurance premiums despite being the second most populous nation. It has tremendous growth potential in the coming years.

1http://www.ibef.org/industry/insurance-sector-india.aspx

Market Structure & Competition

The major players in the life insurance sector are presented in Table 2 below, arranged according to descending market share.

Table 2: major players in the Indian life insurance market

	market share
Life Insurance Corporation	75%
ICICI Prudential Life	4%
HDFC Standard Life	4%
SBI Life	3%
Max Life	2%
Bajaj Allianz Life	2%
Birla Sun Life	2%
Others	8%

Source: IRDA Annual Report 2013-14

The HHI - Herfindahl-Hirschman Index, computed from the above market shares is 0.5742, and the six-firm concentration ratio is 90%, both of which indicate that Indian life insurance industry is highly concentrated, with LIC with a market share of 75% being the market leader. However, estimates indicate that LIC's market share has declined to 73% in 2015, and may further decline to 70% in 2016. This reflects a state of intense competition in the industry.

Though the industry is highly concentrated, regulations have been eased by IRDA to enable financial companies to readily enter the industry. Several banks have entered the industry, introducing the concept of bancassurance. Also, with the loosening of FDI restrictions, several global players are expected to enter. Thus, the threat of new entrants is moderate/high. The bargaining power of buyers is moderate/high, as products/services offered by different providers are relatively undifferentiated, and the switching costs are relatively low. The threat of substitutes is also moderate/high, as many more lucrative investment instruments have become available, and, further, banks and financial institutions are developing products that have insurance-like features. The bargaining power of suppliers is also moderate/high, as there is a single regulator (the IRDA), a single reinsurer (GIC), and provision of finance is highly regulated by the RBI. Thus, overall, Porter's five force model suggests that there is very high competitive rivalry in the Indian life insurance industry.

The intense competition in the life insurance segment is further reflected by recent trends in premium growth. Premium growth in the life insurance segment in India was negative in 2010-14, with year-on-year growth rates of -0.5%, -9.2%, -9.4%, -0.2%, and +1.0%, partly due to increased competition, and partly in order to stimulate demand in the recession; in comparison, in emerging markets in the same period, the corresponding growth rates were +11.0%, -5.2%, +4.5%, +3.6%, and +6.9%, and globally +3.0%, -3.0%, +2.0%, -1.8%, and +4.3%. On the other hand, premium growth in the non-life segment was positive, at +11.3%, +14.5%, +7.8%, +2.4%, and +4.8% in 2010-14; in comparison, in emerging markets in the same period, the corresponding growth rates were +9.9%, +8.1%, +9.1%, +8.6%, and +8.0%, and globally, +1.9%, +1.9%, +2.6%, +2.7%, and +2.9%.

Growth Potential

The country's insurance market is expected to quadruple in size over the next ten years from its current size of US$ 60 billion. During this period, the life insurance market is slated to cross US$ 160 billion. The general insurance business in India is currently at US$ 11.7 billion. Indian insurance market continues to be strong and is expected to rise and reach US$ 280 billion by 2020. In the past few years, growth was the primary agenda across all competitive segments including public sector and private sector insurance players throughout the globe.

According to IRDA's Annual Report 2013-14, the insurance penetration in India was 3.9% against the world average of 6.3% in the year 2013. As compared with other BRICS countries, insurance penetration in India is moderate, at 5.0% in China, 1.3% in Russia, 4.0% in Brazil, and 15.4% in South Africa; but it is low as compared with some OECD countries: e.g. 8.0% in United States, 9.0% in France, 11.5% in United Kingdom, 11.1% in Japan, 6.7% in Germany, 6.9% in Canada, and 5.2% in Australia. More alarmingly, insurance penetration in India has been decreasing in the last five years; it had reached a peak of 5.2% in 2009, and has declined since, particularly due to a decline in life insurance penetration in the same period, whereas non-life penetration continues to increase.

Some of the main macro-environmental factors for Indian insurance industry are discussed in the following. The primary driving factors for growth of the life insurance market are demographic/social factors, including the growing young insurable population, improved living standards, life style changes, higher life expectancy, un-tapped market segments, better education levels and growing awareness of the need for protection and retirement planning. India's insurable population is anticipated to touch 750 million in 2020, with life expectancy reaching 74 years. Furthermore, life insurance is projected to comprise 35% of total savings by 2020, as against 26% in 2010.

There are several economic factors positively affecting demand for life insurance include growth of household savings, increased purchasing power, growth of the middle class, the increase in the working population, and the growth of the financial sector as a whole. On the other hand, some factors that negatively impact demand for life insurance include interest rates, alternative investments, unemployment, and inflation.

Among the political/legal factors affecting life insurance demand, the most critical are increased government promotion and support for the insurance industry. Insurance is promoted through income tax rebates given to individual tax payers, increased recently from INR 1 lakh (US$ 1500) per head to the level of INR 1.5 lakh (US$ 2250) per head. The following are some of the major recent government investments and developments in the Indian insurance sector.

The government has relaxed the FDI norms for the insurance sector from 26% to 49%, leading to a 152% growth in FDI year-on-year, reaching US$ 341 million in March-September 2015. Several MNC insurance firms have responded, increasing their stake in joint ventures to 49%, e.g. AIA Group Ltd. in Tata AIA Life Insurance Co. Ltd, Sun Life Financial Inc. in Birla Sun Life Insurance Co. Ltd.; Nippon Life Insurance in Reliance Life Insurance; and BNP Paribas (up to 36%) in SBI Life Insurance. The government has launched a series of innovative special-purpose schemes, such as the unified scheme for farmers, the Bhartiya Keisha Bima Yojana, which includes various features like crop insurance, health cover, personal accident insurance, livestock insurance, insurance cover for agriculture implements like tractors and pump sets, student safety insurance, and life insurance, and its flagship insurance scheme Atal Pension Yojana, for which it has eased several norms, including more options for periodical contributions, voluntary and premature exits, and simplified penalty for payment delays, in order to increase the subscriber base and ensure wider reach. The government has also launched the Suraksha Bandhan Drive, comprising two schemes, the Pradhan Mantri Suraksha Bima Yojana, a personal accident insurance scheme, and the Pradhan Mantri Jeevan Jyoti Bima Yojana, a life insurance scheme, in order to promote insurance penetration and bank deposits.

The government has also launched the India Nuclear Insurance Pool of US$ 226 million involving the GIC and eleven other non-life insurers under the Civil Liability for Nuclear Damage Act (CLND) in a bid to offset financial burden of foreign nuclear suppliers, to provide a risk transfer mechanism to the operators and suppliers under the CLND Act.

The IRDA has been introduced many regulatory changes in the insurance industry, promoting a higher degree of competition in the industry. The IRDA has recently reduced the mandatory investment norms for LIC in government securities from 75% to 50%, enabling it to diversify into more profitable investments. It has also stipulated that GIC and its subsidiaries should not hold more than 5% of its investments in any one security/company, thus reducing concentration risk

Emerging Trends & Challenges

Some of the emerging trends in the life insurance industry are as follows. The industry has adopted multi-distribution channels, attempting to increase penetration through new modes of distribution such as the internet, direct marketing, and telemarketing. There has also been a proliferation of new products and product innovations, with increased levels of customization. Bancassurance, i.e. a partnership between a bank and an insurance company, using the bank sales channel in order to sell insurance products, is an example of product and distribution channel expansion, thereby increasing customer outreach. Customer service has also improved dramatically, with the introduction of technology, particularly claims management, i.e. the timely and efficient management of claims to prevent delays which can increase the claims cost. In fact, customer service has become a key differentiating factor between insurance companies, and this is strengthened by adequate support for CRM from the distribution network. Thus, most life insurance companies have been aggressively pursuing a combination of expansion strategies, expanding distribution channels, expanding product range, and developing innovative products, resulting in highly profitable growth. For example, Reliance Life Insurance Company (RLIC) is planning to expand its agency force by 20% to over 120,000 agents across India. Several prominent mergers/takeovers are expected in the insurance sector. For example, Bennett Coleman and Co. Ltd. is set to buy Religare Enterprises Ltd's entire 44% stake in life insurance joint venture Aegon Religare Life Insurance Co. Ltd., while the foreign partner Aegon is set to increase its stake from 26% to 49%.

An emerging/untapped area in the Indian insurance landscape is that of micro-insurance, which refers to insurance products which are designed to provide risk cover for low-income people. Growth in micro-insurance sector has been strongest in Asia, Latin America and Africa. Its growth in Asia, accounting for roughly 80% of the global micro-insurance market, is driven by large and dense populations, interest from public and private insurers, penetration of distribution channels and active government initiatives.

While India and China have been at the forefront, other Asian countries, such as Bangladesh, the Philippines and Indonesia are also witnessing rapid growth in micro-insurance. Latin America and Africa, which account for 15% and 5% of the global micro-insurance market, respectively, are other promising growth markets for the sector. In 2011, the estimated outreach of micro-insurance schemes (in terms of risks covered) was: 350-400 million in Asia, 45-50 million in Latin America, and 18-24 million in Africa.

The IRDA has formulated a draft regulation, IRDAI (Obligations of Insures to Rural and Social Sectors) Regulations, 2015, in pursuance of the amendments brought about under section 32B of the Insurance Laws (Amendment) Act, 2015. These regulations impose obligations on insurers towards providing insurance cover to the rural and economically weaker sections of the population. It has also formed two committees to explore and suggest ways to promote e-commerce in the sector in order to increase insurance penetration and bring financial inclusion. This will provide insurance providers with an opportunity to unlock India's huge insurance potential.

However, the life insurance industry has recently witnessed a 10% decline in the first year premium collected, from INR 1,258 billion (US$ 19.35 billion) in 2011 to INR 1,142 billion (US$ 15.57 billion) in 2012. Also, despite strong improvement in penetration and density in the last 10 years, India largely remains an under-penetrated market. The market today is primarily dependent on push, tax incentives, and mandatory buying for sales. There is very little customer pull, which will come from growing financial awareness and increasing disposable income and savings.

1.1 Literature Review

Several studies have examined the factors affecting choice of life insurance policy and service provider. Some of the recent studies, particularly pertaining to the life insurance market in India, are reviewed in the following.

Berry (1995) observed that life insurance was characterized by high customer involvement due to the importance of customising to specific needs, the range of products available, the complexity of the policies/processes, and the involvement the customer in every aspect of transaction. Thus, sensitivity is needed in dealing with customers of insurance policies. This leads customers to form long-term relationships with their insurance agents and service providers in order to reduce uncertainties and risks.

Krishnamurthy et al (2005) discussed the growth of Indian insurance industry after liberalization and also presents future challenges and opportunities linked with the insurance. They argued that penetration of insurance was influenced by the availability of insurance products, insurance awareness, and quality of services. They also suggested that meeting customer expectations is the key to the growth of this sector, and that insurance providers need to educate Indian consumers to change their perceptions and make them aware of the insurable risks.

Devasenathipathi et.al (2007) compared the life insurance companies with respect to certain variables. They examined the effect of privatization, measured the customer perceptions, analysed purchase behaviour, and consumer awareness regarding the life insurance policies. They identified certain key success factors in the life insurance business such as the increasing use of IT tools, convenience, time savings, and money saving schemes. They found that customers expect multiple benefits from the life insurance policies, including higher returns from policies, lower premia, more awareness created by companies, a wider variety of policies, and advertisements.

Athma and Kumar (2007) identified various product and non-product related factors affecting life insurance purchase decision-making. They found that the urban market is more influenced by product-based factors such as risk coverage, tax benefits, return, and so on, while the rural market is influenced by non-product related factors such as credibility of agent, company's reputation, trust, and customer services.

Ray and Ali (2008) studied the gap between perceived and desired features in life insurance products/services, the relative importance of factors in the purchase decision of life insurance products, and customer preferences relating to after-sales services. They also found that customers seek not only risk coverage against death/accident, but also tax savings and meeting of post-retirement needs. Customers also desired continuous communication from their service providers, such as quarterly statements, information about premium payments, new products and switching of funds, preferably via SMS, e-mails, and/or phone calls.

Khurana (2008) studied customer preferences and satisfactions with respect to life insurance policies from different service providers. They found that most of their respondents faced problems in claims settlement, and most faced problems in obtaining information from service provider.

Eldhose and Kumar (2008) explained the importance of quality services and its significance in customer satisfaction. Their comparative study of public and private sectors helped in understanding the customer perception, satisfaction and awareness on various life insurance services.

Suneja and Sharma (2009) identified the various factors influencing choice of a life insurance company, including promotional activities, image of company, customer convenience, financial and non-financial facilities, and premium and procedural formalities.

Malik and Predham (2011) found that product features like tax rebate, investments, advertising and agents' knowledge, low premium are the key factors in determining selection of an insurance company. They suggested that proper training should be given to the agents in all aspects like product knowledge, behavioural aspects, communication, that greater focus should be given to advertisements to reach the customers, and that premium-setting should be done carefully, considering the target customers.

Singh (2011) also suggested that low premium, proper induction to agents, effective advertisement strategy, friendly policy, and easy accessibility to insurance company has motivated customers to acquire a policy.

Yadav and Tiwari (2012) examined the factors which influence customers' policy buying decision and also analyse the preferences of customers while life policy investment decision-making. They found that LIC is the most accepted and popular brand in life insurance, and that the market share of private insurers are gradually increasing with people trust and better services offered by them. They suggested that insurance companies should spread more awareness about life insurance, reduce premium amounts, and focus on need-based innovative products. Also, they found that demographic factors play a major role in deciding the purchase of life insurance policies.

Anuradha (2012) studied the factors influencing the customers to purchase the insurance products, including the type of insurance company and media as source of information. She also studied the age group which was more interested with life and health insurance policies, and whether the customer prefer public or private insurers.

Mathur and Tripathi (2014) identified nine factors affecting customers' choice of insurance company, of which the most important factors were computerization and online transactions, connectivity with bank, speed and efficiency in transactions, and clear communication.

Rajkumar and Kannan (2014) examined the factors influencing the selection of service provider for purchasing a life insurance policy. They found that product features, accessibility, low premium, advertising, proper redressal of complaints, and better claims settlement were some of the factors that significantly influence the choice of a service provider.

Kothari et al (2014) found that service benefits, awareness, risk and returns, and tax benefits were some of the factors influencing purchase of life insurance policies. The most important factor was found to be service benefits, which include prompt services, security and safety, and additional benefits.

Jothi and Sitaram (2014) identified five factors affecting the purchase of life insurance policies, viz. the core product factor, the promotional factor, customer expectation factor, risk–return factor, and service factor.

There are several potential factors affecting the choice of life insurance policies and service providers suggested in the literature. The current study considers some of these factors as the basis for comparison of life insurance service providers, using the Analytic Hierarchy Process.

2. Methodology

The study analyses the performance of life insurance service providers using the Analytic Hierarchy Process (AHP) methodology. AHP is a structured technique for organizing and analyzing complex decisions with multiple objectives, based on pairwise comparison and weighted averaging (Saaty, 2008). It is particularly applied in group decision making, and a wide variety of decision situations, including choice, i.e. the selection of one alternative from a given set of alternatives, usually where there are multiple decision criteria involved; ranking, i.e. putting a set of alternatives in order from most to least desirable; prioritization, i.e. determining the relative merit of members of a set of alternatives, as opposed to selecting a single one or merely ranking them; resource allocation, i.e. apportioning resources among a set of alternatives; benchmarking, i.e. comparing the processes in one's own organization with those of other best-of-breed organizations; quality management, i.e. dealing with the multidimensional aspects of quality and quality improvement; and conflict resolution, i.e. settling disputes between parties with apparently incompatible goals or positions.

AHP has four basic steps. The first step is to define the problem and state the goal or objective, define the criteria or factors that influence the goal, and identify the alternatives to be evaluated with respect to the criteria. The second step is to construct the paired comparison matrix between the criteria, using which the weights for each of the criteria are calculated. The third step is to construct the paired comparison matrices for the alternatives for each criterion, using which the ratings for each alternative under each criterion are calculated. The fourth step is to synthesise the ratings of each alternative by taking weighted averages, and to select the alternative with highest composite rating.

The scale used for the paired comparison matrix for criteria is an importance scale, ranging from 1 to 9, where "1" represents equal importance, "2" represents equal to moderately more important, "3" represents moderately more important, "4" represents moderately to strongly more important, '5" represents strongly more important, "6" represents strongly to very strongly more important, "7" represents very strongly more important, "8" represents very strongly to extremely more important, and "9" represents extremely more important. The scale used for the paired comparison matrix for alternatives under each criterion is a preference scale, ranging from 1 to 9, where "1" represents equally preferred, "2" represents equally to moderately more preferred, "3" represents moderately more preferred, "4" represents moderately to strongly more preferred, '5" represents strongly more preferred, "6" represents strongly to very strongly more preferred, "7" represents very strongly more preferred, "8" represents very strongly to extremely more preferred, and "9" represents extremely more preferred.

Several studies have applied AHP models in a related field, viz. to measure banking performance. Hunjak and Jakovcevic (2001) suggested the use of multi-criteria AHP, using both quantitative factors (viz. financial ratios) and qualitative factors (internal and external) in the evaluation process. Seçme et al (2009) proposed a fuzzy AHP model for the banking system using both financial and non-financial performance criteria. Stankeviciene and Mencaite (2012) used the AHP model to evaluate the performance of Lithuanian commercial banks.

For the AHP analysis of life insurance service providers, the attributes considered have substantial meaning in the buying decision of life insurance products from the wide range of products available, including: premium, benefits, product diversity, customer service, and distribution network.

Premium refers to the price of life insurance products that are offered by different service providers to differentiate their products on the bases of price prevailing among the rapid growing competition. The premium is usually a function of the type of life insurance policy, the benefits offered, and the demographic characteristics of the customer (i.e. gender, age, occupation, income, marital status, and so on). This criterion captures the pricing strategies of the life insurance service providers. In the present study, the analysis was performed for a term life policy with a coverage of Rs. 1 crore (US$ 153,850) considering a specific segment, viz. male, 25 year-old, salaried employees, with an income in the range Rs. 5.0 - 7.5 lakh (US$ 7,700 - 11,500) per annum. **Benefits** are the bundle of additional services that are provided along with the insurance instruments to provide greater overall coverage to the policy holder. These may include accident benefit, disability benefit, illness benefit, waiver of premium in certain circumstances, and so on. In the present study, the benefits provided by different service providers were compared for the term life policy detailed above. **Product diversity** refers to the range of products offered by the service provider. Service providers usually offer several policies of different types, including term life policies, whole life policies, endowment policies, money back policies, pension policies, and so on. In the present study, the number of policies in force of different types was used to compare the product diversity of different service providers.

Customer service refers to the responsiveness of service providers to customer service needs, including providing adequate and timely information about products, amicable and knowledgeable assistance in financial planning, appropriate and timely processing of claims, sensitive and timely handling of complaints/grievances, and so on. In fact, the IRDA has stipulated the maximum allowable service turnaround times (STAT) for various services that an insurance company has to render to the consumer. Many studies suggest that customer service is the most important parameter customers consider when selecting a life insurance service provider. In the present study, customer service was assessed by considering the claim settlement ratio (i.e. the percentage of claims paid in the stipulated period) and the grievance resolution ratio (i.e. the percentage of grievances addressed in the stipulated period).

Distribution network refers to the network of agents, branches, and insurance delivery system through which services are delivered to customers. This is perhaps as important as customer service in selecting a life insurance service provider, as it is the distribution network that provides the interface with customers and ensures delivery of the products and services to customers. In the present study, the distribution network was assessed by considering the number of agents for each service provider.

The analysis was performed for fifteen of the twenty-four registered life insurance service providers. The following nine service providers were eliminated from the analysis due to unavailability of data: Exide Life, Tata AIA Life, Kotak Mahindra Old Mutual Life, Sahara Life, Shriram Life, Canara HSBC OBC Life, DHFL Pramerica Life, Star Union Dai-Ichi Life, and IndiaFirst Life. The data for the service providers was obtained from the IRDA[2], Life Insurance Council of India (LICI)[3], and various insurance product comparison websites[45].

2.1 Analysis & Interpretation

The pairwise comparison matrix for the criteria is given in Table 3 below, with x1 referring to premium, x2 referring to benefits, x3 referring to product diversity, x4 to customer service, and x5 to distribution network.

Table 3: pairwise comparison matrix for criteria

	x_1	x_2	x_3	x_4	x_5	weightage
x_1	1	1/5	1/3	1/7	1/7	0.0358
x_2	5	1	3	1/5	1/5	0.1216
x_3	3	1/3	1	1/7	1	0.1141
x_4	7	5	7	1	1	0.3642
x_5	7	5	7	1	1	0.3642

The resulting weights in Table 3 indicate that customer service and distribution network are jointly assumed to be the most important criteria in ranking the life insurance service providers. Benefits was the next important criterion, followed by product diversity; and premium was the least important criterion.

The pairwise comparison matrices for the life insurance service providers under each of the criteria are given in Tables 4 - 8 below, with y1 referring to Bajaj Allianz Life, y2 referring to Reliance Life, y3 to SBI Life, y4 to HDFC Standard Life, y5 to ICICI Prudential Life, y6 to Birla Sun Life, y7 to Aviva Life, y8 to Max Life, y9 to PNB Met Life, y10 to Bharti Axa Life, y11 to Future Generali Life, y12 to IDBI Federal Life, y13 to Aegon Life, y14 to Edelweiss Tokio Life, and y15 to Life Insurance Corporation. The summary of the AHP scores is presented in Table 9.

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2 https://www.irdai.gov.in/
3 http://www.lifeinscouncil.org/
4 http://www.policybazaar.com/
5 https://buy.insuranzone.com/

Table 4: pairwise comparison matrix for premium price

	y1	y2	y3	y4	y5	y6	y7	y8	y9	y10	y11	y12	y13	y14	y15
y1	1	1/7	1/2	1/5	2/9	1/6	1/3	1/5	1/6	1/6	2/5	1/6	1/3	1/6	7
y2	7	1	6	3.5	3.5	3	4	3.5	3	2	4.4	2	4	3	9
y3	2	1/6	1	1/3	2/5	1/4	1/2	1/3	2/9	1/5	2/3	1/5	1/2	2/7	8
y4	5	2/7	3	1	1.5	1/2	3	1	2/5	1/3	2.5	1/3	2	2/3	8.5
y5	4.5	2/7	2.5	2/3	1	1/2	2.5	2/3	1/3	2/7	2	2/7	1	1/2	8.5
y6	6	1/3	4	2	2	1	3.5	1.5	2/3	2/3	4	2/3	3.5	1	9
y7	3	1/4	2	1/3	2/5	2/7	1	1/3	1/4	2/9	1	2/9	1	1/3	8
y8	5.5	2/7	3	1	1.5	2/3	3	1	2/5	1/3	2.5	1/3	2	2/3	8.5
y9	6	1/3	4.5	2.5	3	1.5	4	2.5	1	1/2	4.5	2/3	4	1.5	9
y10	6.5	1/2	5	3	3.5	1.5	4.5	3	2	1	4.5	1	4	2	9
y11	2.5	2/9	1.5	2/5	1/2	1/4	1	2/5	2/9	2/9	1	2/9	1/2	1/2	7.5
y12	6.5	1/2	5	3	3.5	1.5	4.5	3	1.5	1	4.5	1	4	1.5	9
y13	3	1/4	2	1/2	1	2/7	1	1/2	1/4	1/4	2	1/4	1	1/3	7.5
y14	6	1/3	3.5	1.5	2	1	3	1.5	2/3	1/2	2	2/3	3	1	8.5
y15	1/7	1/9	1/8	1/8	1/8	1/9	1/8	1/8	1/9	1/9	1/7	1/9	1/7	1/8	1

Table 5: pairwise comparison matrix for benefits

	y1	y2	y3	y4	y5	y6	y7	y8	y9	y10	y11	y12	y13	y14	y15
y1	1	2/3	1	1/4	1/6	1	2/3	2/5	1/5	2/5	2/7	1	1/8	1/7	2.5
y2	1.5	1	2/3	2/5	1/4	1.5	1	2/5	1/5	2/3	2/5	1.5	1/7	1/6	3
y3	1	1.5	1	2/5	1/5	2	1.5	1/2	2/9	2/3	1/2	2	1/6	1/6	3
y4	4	2.5	2.5	1	1/2	4	2.5	2	2/3	1.5	1.5	3	1/3	2/5	5
y5	6	4	5	2	1	6	4	2.5	1.5	3	2.5	3	2/3	2/3	6
y6	1	2/3	1/2	1/4	1/6	1	2/3	2/5	1/5	2/5	2/7	1	1/8	1/7	2.5
y7	1.5	1	2/3	2/5	1/4	1.5	1	2/5	1/5	2/3	2/5	1.5	1/7	1/6	3
y8	2.5	2.5	2	1/2	2/5	2.5	2.5	1	2/9	1.5	2/3	3	1/4	2/7	3.5
y9	5	5	4.5	1.5	2/3	5	5	4.5	1	2	1.5	2.5	1/3	2/5	5
y10	2.5	1.5	1.5	2/3	1/3	2.5	1.5	2/3	1/2	1	2/3	1.5	1/6	1/6	3.5
y11	3.5	2.5	2	2/3	2/5	3.5	2.5	1.5	2/3	1.5	1	2	1/4	2/7	4
y12	1	2/3	1/2	1/3	1/3	1	2/3	1/3	2/5	2/3	1/2	1	1/3	2/5	2.5
y13	8	7	6.5	3	1.5	8	7	4	3	6.5	4	3	1	1.5	7
y14	7	6.5	6	2.5	1.5	7	6.5	3.5	2.5	6	3.5	2.5	2/3	1	6.5
y15	2/5	1/3	1/3	1/5	1/6	2/5	1/3	2/7	1/5	2/7	1/4	2/5	1/7	1/6	1

Table 6: pairwise comparison matrix for product diversity

	y1	y2	y3	y4	y5	y6	y7	y8	y9	y10	y11	y12	y13	y14	y15
y1	1	1/3	1/3	1/3	1	2/5	1/2	3	1.5	1.5	1.5	4	1	1	1
y2	3	1	1	1	2.5	1	1	5	4	5	5	6	3	2	1.5
y3	3	1	1	1	2.5	1	1	5	4	5	5	6	3	2	1.5
y4	3	1	1	1	2 1/2	1	1	5	4	5	5	6	3	2	1.5
y5	1	2/5	2/5	2/5	1	2/5	1/2	1.5	1.5	1.5	1	2	1	1	1/2
y6	2.5	1	1	1	2.5	1	1	3.5	3	3.5	3.5	4.5	2.5	2	1
y7	2	1	1	1	2	1	1	3	3	4	4	5	1.5	2	2/5
y8	1/3	1/5	1/5	1/5	2/3	2/7	1/3	1	1	1	1	1	1/2	2/5	1/3
y9	2/3	1/4	1/4	1/4	2/3	1/3	1/3	1	1	1	1	1	1/2	2/5	1/3
y10	2/3	1/5	1/5	1/5	2/3	2/7	1/4	1	1	1	1	1	1/2	2/5	1/3
y11	2/3	1/5	1/5	1/5	1	2/7	1/4	1	1	1	1	1	1/2	2/5	1/3
y12	¼	1/6	1/6	1/6	1/2	2/9	1/5	1	1	1	1	1	2/5	1/3	1/3
y13	1	1/3	1/3	1/3	1	2/5	2/3	2	2	2	2	2.5	1	1	2/3
y14	1	1/2	1/2	1/2	1	1/2	1/2	2.5	2.5	2.5	2.5	3	1	1	2/3
y15	1	2/3	2/3	2/3	2	1	2.5	3	3	3	3	3	1.5	1.5	1

Table 7: pairwise comparison matrix for customer service

	y_1	y_2	y_3	y_4	y_5	y_6	y_7	y_8	y_9	y_{10}	y_{11}	y_{12}	y_{13}	y_{14}	y_{15}
y_1	1	3	2/3	2/7	2/7	1.5	2.5	1/3	1	1.5	7	1	2	9	1/7
y_2	1/3	1	1/4	1/6	1/6	1/3	1/2	1/6	1/3	2/5	4	2/5	1	8	1/8
y_3	1.5	4	1	2/5	2/5	2	4	1/2	1	2.5	5	1.5	4	8	1/5
y_4	3.5	6	2.5	1	1	4	5	1	2.5	4.5	8	2	6	9	1/3
y_5	3.5	6	2.5	1	1	4	5	1	2.5	4.5	8	2	6	9	1/3
y_6	2/3	3	1/2	1/4	1/4	1	2	1/4	1/3	1	4	1/3	3.5	8	1/8
y_7	2/5	2	1/4	1/5	1/5	1/2	1	1/4	1/4	1/3	3	1/4	2	8	1/8
y_8	3	6	2	1	1	4	4	1	2.5	4.5	8	2	6	9	1/3
y_9	1	3	1	2/5	2/5	3	4	2/5	1	1.5	7	1	2	9	1/7
y_{10}	2/3	2.5	2/5	2/9	2/9	1	3	2/9	2/3	1	6	2/3	3	8	1/7
y_{11}	1/7	1/4	1/5	1/8	1/8	1/4	1/3	1/8	1/7	1/6	1	1/5	1/4	8	1/8
y_{12}	1	2.5	2/3	1/2	1/2	3	4	1/2	1	1.5	5	1	2	8	1/9
y_{13}	½	1	1/4	1/6	1/6	2/7	1/2	1/6	1/2	1/3	4	1/2	1	8	1/8
y_{14}	1/9	1/8	1/8	1/9	1/9	1/8	1/8	1/9	1/9	1/8	1/8	1/8	1/8	1	1/9
y_{15}	7	8	5	3	3	8	8	3	7	7	8	9	8	9	1

Table 8: pairwise comparison matrix for distribution network

	y_1	y_2	y_3	y_4	y_5	y_6	y_7	y_8	y_9	y_{10}	y_{11}	y_{12}	y_{13}	y_{14}	y_{15}
y_1	1	2/3	3	5	2/5	2.5	9	7	8	7.5	7.5	8	8	8	1/9
y_2	1.5	1	3.5	5.5	1/2	3	9	7.5	8.5	8	8	8	8	8	1/9
y_3	1/3	2/7	1	2	1/5	1/3	8 1/2	3	7	6.5	6.5	7	7	6.5	1/9
y_4	1/5	1/5	1/2	1	1/5	2/7	7	3	5	4.5	4.5	7	7	6	1/9
y_5	2.5	2	5	5.5	1	3	9	8	9	9	9	9	9	9	1/9
y_6	2/5	1/3	3	3.5	1/3	1	9	7	9	9	9	9	9	9	1/9
y_7	1/9	1/9	1/8	1/7	1/9	1/9	1	1/6	2/7	2/9	2/9	1	1	2/5	1/9
y_8	1/7	1/7	1/3	1/3	1/8	1/7	6	1	2.5	2	2	6	6	4.5	1/9
y_9	1/8	1/8	1/7	1/5	1/9	1/9	3.5	2/5	1	1/3	1/2	1.5	1.5	2/3	1/9
y_{10}	1/7	1/8	1/6	2/9	1/9	1/9	4.5	1/2	3	1	1.5	4	4	3	1/9
y_{11}	1/7	1/8	1/6	2/9	1/9	1/9	4.5	1/2	2	2/3	1	3.5	3.5	2	1/9
y_{12}	1/8	1/8	1/7	1/7	1/9	1/9	1	1/6	2/3	1/4	2/7	1	1	1/2	1/9
y_{13}	1/8	1/8	1/7	1/7	1/9	1/9	1	1/6	2/3	1/4	4/7	1	1	1/2	1/9
y_{14}	1/8	1/8	1/6	1/6	1/9	1/9	2.5	2/9	1.5	1/3	1/2	2	2	1	1/9
y_{15}	9	9	9	9	9	9	9	9	9	9	9	9	9	9	1

Table 9: summary of AHP scores

	Premium	Benefits	Product diversity	Customer service	Distribution network	AHP score
weightage	0.0358	0.1216	0.1141	0.3642	0.3642	
Bajaj Allianz Life	0.0169	0.0227	0.0523	0.0491	0.1017	0.0642
Reliance Life	0.1745	0.0293	0.1236	0.0233	0.1121	0.0732
SBI Life	0.0243	0.0335	0.1236	0.0647	0.0653	0.0664
HDFC Standard Life	0.0576	0.0750	0.1236	0.1162	0.0526	0.0868
ICICI Prudential Life	0.0467	0.1223	0.0447	0.1162	0.1335	0.1126
Birla Sun Life	0.0859	0.0217	0.1055	0.0381	0.0963	0.0667
Aviva Life	0.0316	0.0293	0.0973	0.0268	0.0094	0.0289
Max Life	0.0590	0.0538	0.0258	0.1114	0.0347	0.0648
PNB Met Life	0.1031	0.1039	0.0284	0.0579	0.0142	0.0458
Bharti Axa Life	0.1277	0.0427	0.0264	0.0413	0.0257	0.0372
Future Generali Life	0.0298	0.0610	0.0274	0.0148	0.0220	0.0250
IDBI Federal Life	0.1223	0.0316	0.0224	0.0553	0.0101	0.0346
Aegon Life	0.0364	0.1930	0.0503	0.0243	0.0104	0.0432
Edelweiss Tokio Life	0.0761	0.1657	0.0584	0.0079	0.0148	0.0378
Life Insurance Corporation	0.0080	0.0147	0.0903	0.2525	0.2973	0.2126

Reliance Life was found to be the most competitive with respect to premium, followed by Bharti Axa Life and IDBI Federal Life. However, Aegon Life, followed by Edelweiss Tokio Life and ICICI Prudential Life offered better benefits. In terms of product diversity, HDFC Standard Life, SBI Life, and Reliance Life had the best range of offerings. From the product point of view, LIC was last-ranked in terms of premium and benefits, followed by Bajaj Allianz Life and Aviva Life. On the other hand, LIC was found to dominate its competitors in terms of customer service and distribution network; HDFC Standard Life and ICICI Prudential Life were joint second-ranked with respect to customer service, and ICICI Prudential Life and Reliance Life were second- and third-ranked, respectively, with respect to distribution network. Overall, LIC was identified as the best performer, followed by ICICI Prudential Life and HDFC Standard Life, and followed Reliance Life and Birla Sun Life.

3. Discussion

The Indian insurance industry is still in a growing stage, as India's twin demographic dynamics of a growing working population and increasing disposable income are driving continued growth. Further, government initiatives continue to promote insurance penetration and reach. The Indian insurance industry is on a path of sustainable growth and momentum, by increasing penetration and exploring the latent segments, particularly the rural segment, through micro-insurance. This latter market may require more flexible policies and regulation. There is also a need to spread awareness and information about insurance for Indian consumers in general, requiring more careful advertising and promotional campaigns, particularly informing consumers about new products and their features. Distribution networks will play a vital role in this, so service providers must build a wider and deeper network, with a focus to improve awareness and customer service.

The results of the analysis of the life insurance service providers using AHP are relatively consistent with their market position. However, the analysis indicates good potential for Reliance Life to improve its market position. In fact, if the AHP analysis is carried out with equally-weighted criteria, Reliance Life displaces HDFC Standard Life and comes third among the life insurance providers considered. Aegon Life and Edelweiss Tokio Life also have attractive offerings in terms of benefits, but may need to reconsider their pricing if they are to make an impact on the market.

Several service providers were found to be lacking in terms of customer service and distribution network, including Edelweiss Tokio Life, Aviva Life, and Aegon Life. In fact, as the distribution network may be the driving force of the life insurance industry, it is necessary to examine its impact on performance more carefully, from the point of view of productivity and efficiency.

There are several limitations inherent in the present study. There were several difficulties with the operational definitions of the parameters considered. Firstly, not all insurance service providers had comparable policies catering to all customer segments, across different coverage ranges and maturities. For simplicity, in the present study, a fixed segment was selected, and insurance providers that offered comparable products for this segment were selected. Secondly, premium and benefits are generally interlinked: policies with more benefits tend to be priced higher. In the present study, the most basic policy for each service provider was considered. Thus, there could be some element of adverse overlapping between the definition of premium and benefits in the present study. As an extension of the present study, different segments need to be analyzed and collated to get a complete picture for the industry. This could also capture product diversity to some extent, in the sense of the different segments the service provider caters to. Also, it is necessary to separate the assessment of premium and benefits; i.e. to compare the prices of the most basic life insurance policies, without any additional benefits, and to compare the additional benefits offered at a fixed price. Alternatively, premium and benefits could be combined into a single criterion.

Another limitation arose from obtaining reliable data relating to the parameters considered. Customer service and satisfaction data was unavailable with both the IRDA and LIC, though there are prescribed service turnaround times for different services. Primary data from customers should be taken from panels of customers by a third party (preferably the regulator) and be made available for analysis, and used for improving customer service. The use of customer feedback on different product comparison websites may be insightful to some extent, but suffers from selection bias.

There are several avenues for further research suggested by the present study. As discussed above, the study can be extended to different segments. Further, the relationship between premium and benefits, as well as the relationship between distribution network and customer service, need to be further examined. Also, the critical determinants of productivity and efficiency of life insurance service providers need to be identified. Finally, the study can be extended by considering other criteria for comparison of life insurance service providers, e.g. equity, costs/expenses, investments, efficiency, solvency, returns/risk, valuation, and so on.

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Annexure

Table 10: data for the paired comparisons

	premium*	max. maturity	benefits	products in force	agents	claim settlement	grievance resolution
Bajaj Allianz Life	9824	50		29	115920	91.29%	98.60%
Reliance Life	4626	55		34	117359	81.97%	98.02%
SBI Life	7465	50	A	35	87866	91.06%	99.88%
HDFC Standard Life	6529	60	B	38	77970	94.01%	93.01%
ICICI Prudential Life	6775	60	A, C, D, E	26	131619	94.01%	99.50%
Birla Sun Life	6297	50		34	105859	87.76%	99.95%
Aviva Life	6958	55		31	9305	84.00%	100.00%
Max Life	6526	55	A	19	40351	93.86%	99.98%
PNB Met Life	5743	60	A, B, C	22	12150	90.24%	99.85%
Bharti Axa Life	5125	65		20	18311	88.13%	93.80%
Future Generali Life	7112	70		22	16573	74.88%	93.06%
IDBI Federal Life	5222	45	A	17	10069	90.34%	100.00%
Aegon Life	6840	70		25	10159	81.00%	94.68%
Edelweiss Tokio Life	6412	70	A, B, C, E	28	13828	60.00%	93.58%
Life Insurance Corporation	13396	50		31	1076835	98.14%	100.00%

*assuming a term life policy for a male, aged 25 years, salaried employee, in the income group Rs. 5.0-7.5 lakh, for a coverage of Rs. 1 crore.

A: accidental death
B: accidental disability
C: critical illness
D: terminal illness
E: waiver of premium