Attrition of agents in Indian life insurance companies

Neha Chhabra Roy and Samik Shome*

The insurance industry in India is primarily human-intensive, and the business is managed by a large number of agents or advisors. This article identifies the factors responsible for attrition of individual agents of life insurance companies in India and explores its implications for these companies. The study draws and builds on findings from the primary survey of individual agents and senior officials of public and private life insurance companies in the country. The article posits fuzzy logic theory to estimate the attrition index. Some of the mitigation measures of agent attrition are proposed, which provide an initial assessment of the extent to which these can be applied in the Indian context.

Keywords: Agents, attrition index, fuzzy logic approach, innovative conceptual framework, life insurance companies.

THE insurance industry of any country acts as the backbone of its financial risk management system. The life insurance companies help in providing risk cover, investment and tax planning for individuals. The history of insurance as a method of transferring or distributing the risk in an economy was practised by Chinese and Babylonian traders in the 3rd and 2nd millennia BC. At present, it is 198 years old and in the fourth phase of its existence. Starting with initial two phases of the Indian insurance industry, there were more than 200 life insurance companies before the two nationalizations happened in 1956 and 1971. In 1956, The Government of India, brought together over 240 private life insurers and provident societies under one nationalized monopoly corporation and thus the Life Insurance Corporation (LIC) was born.

Over the next few decades in India, LIC was the only agency providing life cover, with consumers having no other choice. Similarly, the individual agents of LIC had no competition other than competing among themselves (note 1). The entire scenario has changed in the post-liberalization era, when more number of agencies entered into the life insurance industry; also, there was the inclusion of new channels for sale. This has resulted in not only a significant increase in the availability of choices for the consumer, but also competition among the agents.

Neha Chhabra Roy is in the Department of Finance, Narsee Monjee Institute of Management Studies, Bengaluru 560 083, India and Samik Shome is in the Department of Economics, Nirma University, Ahmedabad 382 470, India.
*For correspondence. (e-mail: nehang201112@gmail.com)

Traditionally, insurance companies in India are human-intensive, and the business is managed by a large number of insurance agents or advisors. All insurance companies have an agency building distribution strategy under which they recruit, train, finance and supervise their agents or advisors. For decades, this agency system was the only distribution channel for insurance in the country. The Indian insurance sector has experienced the development of multiple distribution channels over the last two decades. Intensified competition, rising agent costs, and product transformation have driven insurers to seek for more efficient approaches to operate in the market[1].

Insurance companies no longer rely solely on traditional channels such as agents and brokers, but have also developed alternate channels such as bancassurance, teleassurance, shopaasurance, and e-commerce marketing, among others. Despite the multiple alternatives available in insurance business, individual agents still dominate the premium contribution in India at 64% of the total premium contribution in 2015. Although this figure has substantially decreased from 82% in last the 10 years, one of the main reasons for this domination of individual agents is the low levels of financial literacy in the country (note 2). Conventionally, in India, it is believed that through an individual agent, personal contact, bonding and relationship can be established with the customers. The direct channel has a major impact on the distribution landscape, as customers become the focal point for every transaction and sale. Due to personal contact, individual agents can also provide valuable information and feedback about the need and expectation of consumers. It is assumed that it is always beneficial to the customers that explanation by an experienced agent goes a long way in understanding the features of the insurance product. The

needs of customers keep changing over a period of years and majority of Indians feel the necessity of an agent for various service requirements[2].

As of March 2016, there are 20.17 lakh agents in the insurance industry working for various companies[3]. Now, chronological trends in India for the last one decade indicate that these individual insurance agents frequently shift between companies. In fact, a study conducted by Ernst & Young (E&Y) reveals that on an average every year around 10–12% of the individual agents shift between companies within the industry. This is not only a major concern for the company but also involves a significant cost associated with it, which includes the cost of recruitment and training among others[4–6].

The background reveals that Insurance Industry is witnessing an era of increased competition with the introduction of multiple insurance companies, with their products and so as increased number of insurance agents. simultaneously, agents attrition rate statistical figures show that there is a significant correlation between insurance industry business and agents attrition rate. This article links these two gaps by identifying the determinants responsible for attrition of individual agents of life insurance companies in India and explores its implications for insurance companies. The central argument in this article revolves around three specific objectives: first, to identify the
factors that influence individual agents to shift from one company to other; secondly, to access the exact attrition index for individual agents in Indian life insurances companies, and lastly, to suggest measures to mitigate the issue of rising attrition.

Literature review

The phenomenon of agent attrition within the insurance sector is not only observed in emerging economies but also a matter of concern for developed nations. A large section of the literature related to the occupation of insurance seeks to identify the principle determining factors for attrition of individual agents. A key question is whether this attrition towards other insurance companies is a consequence of push or pull diversification because on one side the contribution of other channels in selling life insurance policies has increased which work as push factor in parallel because it is responding to demand so it also acts as pull force. Against this background, we have reviewed the literature to identify the driving factors responsible for attrition of individual agents.

Push phenomenon

Studies on Chinese insurance market[7–9] and in American insurance market[10] through its global consumer insurance survey in 2012 reveal that although the individual agent-based marketing system is still one of the driving forces in both the countries, other than commissions, most insurance agents do not have any minimum salary, social security or social status. The commission is also unappealing, with very high targets and work pressure. Evidence from India also shows that the high attrition of individual agents is largely due to poor commission structure and huge sales pressure. The enormous targets set by insurance companies to their agents often prompts them to mislead their customers and cheat them by rampant misselling (note 3). This leads to tremendous sales pressure and psychological pressure. Under this pressure, in order to increase the earnings an insurance agent always tries to look for an alternative source of income or frequently shifts to other companies for a better commission.

The agents recommend a product that provides them high commissions, though it is strictly dominated by alternative products[11]. Due to information asymmetry among insurers, insurance agents, and customers in the Indian insurance market, this type of moral hazard is inevitable and unavoidable; it eventually leads to a regular shift of agents from one company to another[12]. Lack of growth in career within the organization is also a reason for the frequent switch-over[13].

Several researchers in India have identified an adverse correlation between work atmosphere in the organization and agent retention. This study indicates that agent switch-over is associated with increased negativity of relationship between an agent and the reporting authority in a company[14,15]. Similarly, conflict among individual agents over customers and less flexibility in the achievement of sales targets are also considered to be the distress factors for agents to shift to other companies[4,16].

Pull phenomenon

In addition to the push factors described above, several studies have also identified few factors which motivate the insurance agents to shift from one company to another. The shift towards a globally interconnected insurance market has created ample opportunities through the inclusion of new companies in the Indian market for the agents to move/shift to companies with more compensation and benefits. Such globalization and interconnectivity of technology has increased transparency in the insurance business[15,17].

Again, many insurance companies nowadays are continuously focusing their efforts towards strengthening the relationship with their existing agents by optimizing training, compensation and retention, which acts as a motivation to improve their productivity levels consistently in order to sustain the business. These types of employee-friendly strategies not only create a healthy competition among agents, but also attract agents from other companies. Similarly, competitive pressure in the

industry results in heavy inter-firm 'poaching' of individual agents[12,14].

The simplicity of rules by the IRDA related to switching from one insurance company to another has also given an opportunity for insurance agents to move easily. Now, all they need to do is to surrender their agency license with the existing insurer. The insurance company will issue a cessation certificate within 15 days from the date of surrender of the license. Subsequently, the agents can apply for a license with an insurance company of their choice by submitting cessation certificate along with other supporting documents. However, the new license will be issued after 90 days of issuance of cessation certificate with the old insurer. The move has come after IRDA incorporated a few amendments in the guidelines on appointment of insurance agents pursuant to insurance law amendment bill[6].

In short, the reasons identified by the authors of this paper through their own experimental research may be distilled into two different phenomena: push and pull. Low and unattractive remuneration; stressful and highly target-oriented employment aggravated by 24×7-type work; misselling; lack of clearly defined career growth opportunities; mismatch of aptitudes and expectations between reporting authority of the insurance company and agents are identified as the major factors that push the individual agents to other insurance companies. Similarly, availability of more options, attractive benefits and poaching, and relaxation in government regulations are also the reasons for agents to shift to other companies.

Research methodology

This study can be categorized as exploratory research, which is executed to explore the likelihoods of undertaking a larger study[18]. In other words, the deductive research method is used here, where theory, data and findings are in sequence.

Identification of factors of agent attrition in life insurance sector

In addition to the push and pull factors identified during review of the literature, to get a first-hand experience and check whether more factors can be identified for the switch-over of agents in the Indian context, in-depth, focused, individual interviews of senior management and employees of all 24 life insurance companies present in India (1 public and 23 private companies) were conducted. This expert opinion method has revealed that although the factors identified from the literature review are comprehensive for the Indian context, additional factors can also be taken into account. Some of the prominent factors are a minimum business guarantee, peer-pressure pull and lucrative benefits.

Every company prescribes minimum business guarantee (MBG) and failure to reach these minimum levels forces the agents to resign before being thrown out by the company. Although IRDA has defined MBG for agents (note 4), all the insurance companies intentionally keep this target several folds higher than that required[19]. Another factor emerging from the expert interviews is peer-pressure pull. If the peers are performing better and being rewarded by the insurance company, the non-performing and less performing agents tend to switch to other companies to avoid humiliation[16].

Interestingly, discussion with experts from the insurance industry reveals that lucrative benefits act as both a push and pull influence on the agents. It actually has a twofold impact. It actually has two-fold impact. Although it can be a way to poach good agents from another company who helps to grow business, also for the host company, who sets better standards for revenue seeing agents capabilities. For example, one way of maintaining good and healthy agent relations in the insurance companies is by attaching lucrative benefits on achieving business beyond targets. These include performance bonuses, christmas bonuses, study allowances and foreign trips, among others[20].

Hence the reasons that individuals pursue diversification as an employment strategy in the insurance sector are often divided into two overarching considerations: (a) shift undertaken for accumulation objectives, driven mainly by 'pull factors' and (b) diversification undertaken to manage risk, cope with stress, or escape from tremendous work and psychological pressure, hence driven by 'push factors'. While diversification driven by pull factors is usually associated with an upward spiral of income for the agents thus engaged, diversification by push factors sometimes extracts an agent from low income. In other words, 'pull' reasons correspond to the emergence of improving labour market opportunities, while 'push' reasons refer to deteriorating conditions within the company itself. Table 1 lists the factors identified as pull and push phenomena for the shifting of individual agents from one company to another.

Primary survey and use of fuzzy logic theory for attrition index quantification

After identifying the agent attrition driving factors, insurance index quantification is then estimated. Since the identified attrition challenges were mostly subjective in nature, exact impact quantification is another significant challenge for insurance business. We have applied an optimum method which deals with mostly subjective challenges. A proven methodology for addressing subjective factors in various areas is advance fuzzy logic theory (FLT, note 5), executed to convert the qualitative attrition

Table 1. Identification of factors for shifting by individual agents to different companies

Push factors	Pull factors
Very low and unappealing commission structure	Increase in opportunity due to globalization
High and unachievable targets (Minimum Business Guarantee)	Growth opportunities in other companies
Tremendous work pressure	Flexibility of getting NOC
Psychological pressure	Poaching through lucrative benefits
Misselling of products	
Lack of growth within the organization	
Poor relation with the reporting authority	
Conflict among agents over customers	
Less flexibility in the achievement of sales target	
Peer pressure within the organization	

factors into the quantitative index[21–24]. The advantage of FLT theory is that it first converts all subjective challenges into the scale of numbers using fuzzification process; further quantitative numbers are processed and again through defuzzification process, these derived numbers are converted into subjective results.

A well-designed primary survey was conducted by preparing a structured questionnaire. The questionnaire was circulated through e-mail among 286 individual agents across 10 major insurance companies of India, with a target of 200 responses from insurance companies. The response rate was almost 70%, with 196 agents responding to the questionnaire. After thorough data mining of these questionnaires, 122 responses were finally considered for the study. The analysis was performed on collected 122 responses and further attrition index was derived. Severity class was obtained using normality plot of selected ten insurance companies attrition index. The period of survey was between January and August 2017. To get a perspective beyond the opinion of individual agents, five senior officials (in the category of senior management and branch managers, among others) from each of these ten companies were also interviewed. These interviews were conducted in the corporate office or over the phone, and the authors individually took their feedback. A severity scale distribution on the scale of 1 to 5 for each factor was constructed after consultation with these experts. The Likert scale of 1 to 5 was used, with 1 implying 'very low impact' and 5 as 'very high impact'.

To determine the weights of parameters, the number of responses against each parameter attribute in the questionnaire was counted and weighted average (WA) estimated for all factors. Then the weights of factors were obtained by multiplying overall weighted averages with significance rating (SR_i) and further normalized. These normalized final weights (W_r) were used in the fuzzy logic application to obtain the attrition index. In order to derive insurance index, the assessment fuzzy matrix (AF) was obtained by multiplying the input matrix (I) and rating fuzzy matrix (RF) of the parameter:

$$AF_j = I_j * RF_j \ (j = 1, 2, \ldots, 10) \quad (1)$$

where the input matrix was prepared based on the scores assigned by experts. Rating fuzzy matrix nullifies the biasness of expert responses, which arises from input fuzzy matrix. The membership degree matrix (MD) was obtained by multiplying the relative weight assessed with the assessment fuzzy matrix, and summing the columns resulting in a one-row matrix:

$$MD = W_r * AF. \quad (2)$$

The membership degree matrix decides the distribution of overall attrition factors over attrition index estimation. A quantified attrition impact computed using decision parameter computation was chosen from several scenarios considering membership degree versus attribute curves and attrition index (AI) was calculated as

$$AI = \frac{1 * A_{12} + 2 * A_{23} + 3 * A_{34} + 4 * A_{45}}{A_T}, \quad (3)$$

where the area under the curve between the attributes i and j is represented as A_{ij} with $i = 1, 2, 3, 4, 5$ and $j = 2, 3, 4, 5$. The total area under the curve is A_T. This enabled the AI value to be calculated, establishing a five grade evaluation system: (a) low attrition having AI values less than 0–1.8; (b) natural average impact between 1.8 and 2.5; (c) moderate impact between 2.5 and 3.0; (d) high attrition impact between 3.0 and 3.4 and (e) extreme impact of 3.4 and above. The attrition scale index represents the minimum and maximum values calculated using eq. (3).

Data analysis

Since there are two major approaches for the classification of factors, the latter were segregated into the pull and push phenomena. In Table 2, all 14 driving factors are scaled with reference to their severity of impact on business and described based on their quantitative measure. The responses of all respondents were assessed. Further, for impact assessment, each factor was allocated with a

Table 2. Response of respondents to various attrition factors

Factors	Assessments parameters	No. of 1s	No. of 2s	No. of 3s	No. of 4s	No. of 5s	Sum	Weighted average	Significant rating	Weight* significant rating	Normalized weight (%)
Pull factors	Very low and unappealing commission structure	2	30	48	19	23	122	3.254	0.050	0.163	5.22
	High and unachievable targets (MBG)	20	45	29	20	8	122	2.598	0.050	0.130	4.17
	Tremendous work pressure	2	21	18	72	9	122	3.533	0.050	0.177	5.66
	Psychological pressure	2	17	18	76	9	122	3.598	0.050	0.180	5.77
	Misselling of products	12	24	34	42	10	122	3.115	0.050	0.156	4.99
	Lack of growth within the organization	2	27	48	22	23	122	3.303	0.050	0.165	5.30
	Poor relation with the reporting authority	25	73	18	5	1	122	2.049	0.050	0.102	3.28
	Conflict among agents over customers	12	24	34	42	10	122	3.115	0.050	0.156	4.99
	Less flexibility in achievement of sales target	5	15	23	61	18	122	3.590	0.050	0.180	5.76
	Peer pressure within the organization	5	25	30	47	15	122	3.344	0.050	0.167	5.36
Push factors	Flexibility of getting NOC	13	51	21	22	15	122	2.795	0.125	0.349	11.20
	Increase in opportunity due to globalization	5	36	24	31	26	122	3.303	0.125	0.413	13.24
	Growth opportunities in other companies	13	47	28	30	4	122	2.713	0.125	0.339	10.87
	Poaching through lucrative benefits	3	25	15	61	18	122	3.541	0.125	0.443	14.19
									3.11906		

significant rating of 1/2, assuming initially that the weight of push and pull factors is the same. In the pull phenomenon 10 factors have been listed and so significant rating was (1/2)*(1/10) = 1/20. Similarly, for the push phenomenon the significant rating was (1/2)*(1/4) = 1/8 = 0.125. The relative weight for each factor was estimated after normalization of each attrition factor. These relative weights were further used for fuzzy logic assessment. The index quantification was routed through risk fuzzy matrix (note 6), assessment fuzzy matrix, and membership degree matrix (note 7) as discussed above. As shown in Table 3, the area under the curve for each factor was used to evaluate the attrition index (note 8). The attrition index was estimated to be 2.930, which shows the high impact of attrition factors (note 9).

Results and discussion

In the Indian context, individual agents are the fulcrum for the success of life insurance industry. The constant expansion, efficient techniques to approach customers and decent policy knowledge facilitate the agents to bring many new clients under insurance coverage. Hence, attrition of agents damages the insurance business. Although innovative policies and attractive offers from the companies also encourage common people to purchase life insurance, advisors play an important role in widening the insurance market among the masses. Next, we analyse the impact of attrition factors. In Figure 1, the normalized weights are plotted for all the factors.

Among the 14 factors that act as the driving force, lucrative benefits; increased opportunity due to globalization; flexibility of getting NOC; failure to achieve targets and peer pressure within the organization are identified as the most significant factors. During the quantification of insurance index using fuzzy logic, the membership degree of attributes for all insurance parameters is portrayed. Figure 2 is a plot of the attributes versus membership degree and weighted average.

The attribute values ranging from 1 to 5 signify the rating value of the attrition index. As observed in weighted average versus attributes histogram, high weighted average on attributes (e.g. attribute 4) reflects a high attrition index (high rating) value. Conversely, a high weighted average value on attributes (e.g. attributes 1 or 2) reflects a low risk (low rating) value. The weighted average histogram for agent attrition index shows the highest value

Table 3. Attrition index estimation through fuzzy logic approach

				AF = I*RF										MD = AF*W_r				
		Relative importance		Input matrix (I)					Assessment fuzzy matrix (AF)					Membership degree matrix (MD)				
Factors	Assessment parameters	(%)	Score	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Pull factors	Very low and unappealing commission structure	5.22	4	0	0	0	1	0	0	0	0.8	1	0.2	0	0	0	0	0
	High and unachievable targets (MBG)	4.17	5	0	0	0	0	1	0	0	0.3	0.6	1	0.000	0.000	0.012	0.025	0.042
	Tremendous work pressure	5.66	3	0	0	1	0	0	0	0.5	1	0.4	0	0.000	0.028	0.057	0.023	0.000
	Psychological pressure	5.77	3	0	0	1	0	0	0	0	1	0.3	0	0.000	0.000	0.058	0.017	0.000
	Misselling of products	4.99	4	0	0	0	1	0	0	0	0.2	1	0.5	0.000	0.000	0.010	0.050	0.025
	Lack of growth within the organization	5.30	2	0	1	0	0	0	0.5	1	0.4	0	0	0.026	0.053	0.021	0.000	0.000
	Poor relation with the reporting authority	3.28	5	0	0	0	0	1	0	0	0	0.5	1	0.000	0.000	0.000	0.016	0.033
	Conflict among agents over customers	4.99	4	0	0	0	1	0	0	0	0.5	1	0.5	0.000	0.000	0.025	0.050	0.025
	Less flexibility in achievement of sales target	5.76	5	0	0	0	0	1	0	0	0.2	0.6	1	0.000	0.000	0.012	0.035	0.058
	Peer pressure within the organization	5.36	3	0	0	1	0	0	0	0.3	1	0.2	0	0.000	0.016	0.054	0.011	0.000
Push factors	Flexibility of getting NOC	11.20	3	0	0	1	0	0	0	0.2	1	0.3	0	0.000	0.022	0.112	0.034	0.000
	Increase in opportunity due to globalization	13.24	3	0	0	1	0	0	0.5	0.3	1	0.8	0	0.066	0.040	0.132	0.106	0.000
	Growth opportunities in other companies	10.87	4	0	0	0	1	0	0	0.3	1	0	0	0.000	0.033	0.109	0.000	0.000
	Poaching through lucrative benefits	14.19	4	0	0	0	1	0	0	0.2	0.3	1	0.5	0.000	0.028	0.043	0.142	0.071
														0.010	0.021	0.064	0.052	0.019
														0.015	0.015	0.085	0.036	0.151
														A12	A23	A34	A45	AT
																0.442		
											AI = 2.930							

RF, Risk fuzzy matrix.

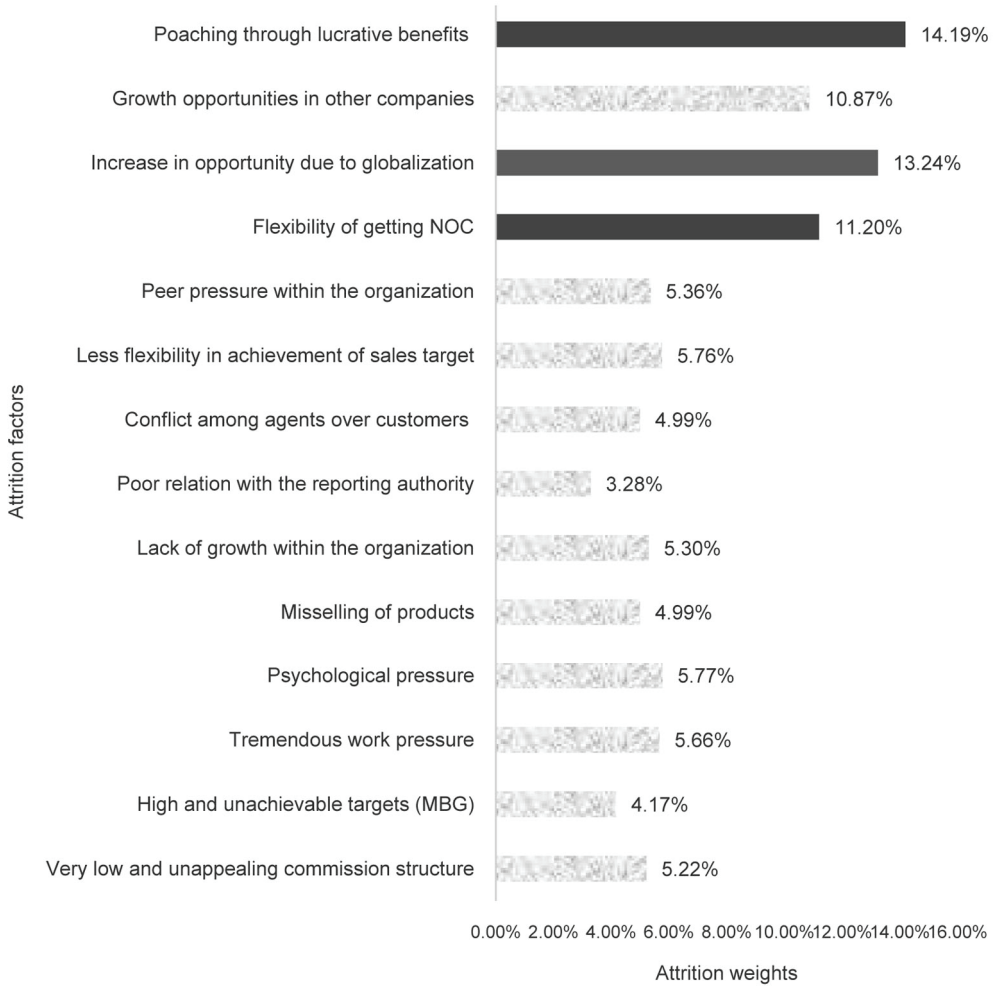

Figure 1. Attrition drivers of insurance agents and their impact.

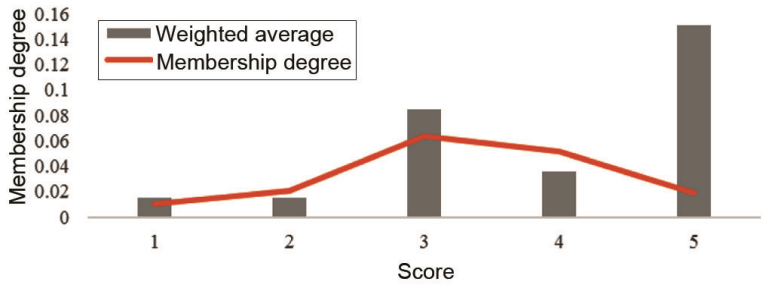

Figure 2. Membership degree versus weighted average versus attributes histogram.

for attribute 4. The graphs of membership degree portrays the overall results of attrition index over the attributes. An interpretation of these graphs is based on the skewness of the curve. If the curve is skewed towards the right-hand side, it reflects high attrition rate value, and vice versa[21]. In this case, as the curve is skewed to the right-hand side, it is tending towards high attrition index.

The attrition index was quantified and found to be 2.930 which falls under high impact zone (note 10). Initially fuzzification process was applied on qualitative attrition factors and index derived as 2.930. Further the same index value along with selected insurance companies index values was processed through defuzzification and five severity classes were obtained. The reliability of results assessed using fuzzy logic method was also validated using out-of-the-box analysis (note 11). The attrition index assessed fuzzy logic method has gone through out of box analysis which was used to check the sensitivity

of result. The results fall within 95% level of significance and attrition index falls under high impact zone. Hence the attrition index of individual insurance agents is very high in case of Indian life insurance companies, which implies a significant impact on the economic condition of the overall insurance sector.

Studies of the IRDA data on the profitability of insurance companies reveal that the companies also face various financial losses every year due to multiple reasons, viz. false claim settlement, issues with distribution channels, workforce challenges and insurance agents attrition, among others[15]. Data prove that the attrition of agents from and within the insurance industry attributes to approximately 12% of the total loss[6]. Therefore, it is important for these companies to come up with some policies to check this attrition. In this backdrop, we propose an innovative conceptual framework for mitigation of attrition of insurance agents.

Suggestions to mitigate the shift of insurance agents

The attrition index result predicts that Indian insurance business is highly impacted and also portrays few pertinent insurance attrition challenges which catalyse the impacts. In this section to reduce the impact of aforementioned factors, mitigation measures are suggested which can address one or more attrition challenges simultaneously. While there has been a perceptible change in the market dynamics in the Indian insurance industry during the last 10 years, there is very little customer pull towards the purchase of insurance. This will only come from increasing financial awareness along with increased savings and disposable income. The market today is primarily dependent on push, tax incentives and mandatory buying for sales. Hence, the individual agents still play a dominant role in this market. The switching over of individual agents has an adverse impact on the profits and repute of an organization. Therefore, it is essential for the insurance companies to retain the agents.

To address this issue, five key areas are conceptualized. First is shortening the feedback loop for agents. This helps them to get feedback about their work within a short period. It also helps to keep their performance levels high and reinforce positive behaviour among peers[15]. A continuous feedback about business generation, product information and ethical practices can take care of two critical problems, viz. MBG and misselling. Similarly, the performance-based monetary incentives can address the issue of MBG and targets not achieved.

In many cases, favouritism by unqualified managers in the insurance companies towards a few agents results in a demotivating factor for their peers[25]. An unbiased manager not only motivates the insurance agents but can also tackle three important factors of attrition, viz. peer pressure, target achievement and assault from superiors. Again, several Indian insurance companies nowadays have started developing new modules of change management, holding meaningful career discussions, creating agent toolkits and motivating agents to bring people through references[12,26]. Hence, this change management can help motivate agents to achieve targets and reduce peer pressure. Another benefit of this innovative process is to encourage agents to get higher levels of qualification and certification in the insurance field. This type of learning and empowerment, and also peer-to-peer learning help in proper informative selling than misselling to customers, which ultimately reduces unethical practices of business.

Lucrative benefits have twofold impact since the commission structure is almost uniform in all companies. Such benefits and the promotional opportunities are a huge attraction for the migration of agents[26]. On the other hand, poaching of agents can also be reduced by giving them internal lucrative offers when targets are achieved.

Concluding remarks

The attrition of individual agents is a malady for any life insurance company. The problem is more pronounced in this sector because the life insurance contracts are longterm and the agents are the intermediaries between the insured and the insurer. When the intermediary switches loyalty from one company to another, it has an adverse impact on the brand loyalty which any insurance company does not want to mislay. In this article, major attrition factors are identified and quantified. A total of 14 attrition variables were analysed under push and pull phenomena. It is evident from the analysis that the pull factors play a significant role in agent attrition over the push factors. The most trivial attrition areas have been analysed as lucrative benefits, getting easy NOC, growth opportunities in other business. The aggregate weighted impact of these factors alone is near to 38% in the pool of all factors.

The quantification of all these qualitative risk factors was done using the advanced fuzzy logic method. The attrition index estimated for Indian life insurance companies using fuzzy logic approach was 2.930, which is on the borderline of very high attrition class. Attrition factors quantification result shows that targets and misselling to customers are the dominating factors which need to be tackled.

This article also discusses mitigation measures for attrition drivers in the Indian life insurance industry. Since this attrition is important for the policymakers, regulators and experts in the industry, it is important for them to intervene to correct this imperfection. To summarize, the mitigation measures presented here to capture key facets and dynamics of agent attrition, which needs to be checked. This study is significant to the Indian financial

system, especially the insurance sector to control tangible and intangible losses occurring due to agent attrition.

Notes

1. An agent, in insurance parlance, is called the first-line underwriter since she/he is the only person who has seen the customer before offering insurance. The moral hazard associated with the sale of insurance policy is sought to be reduced or minimized through the interphase of an agent. Relying on the agency channel helps life insurance industry in attracting insurable customers to the fold of life insurance[25].
2. Only 24% of adult Indians are financially literate compared to 28% of BRICS. The world average is 33% (ref. 27).
3. Rampant misselling of the products involves selling of insurance products by giving false or partial information by the agents to the consumers[28].
4. According to IRDA, each agent would have to sell a minimum of 20 policies and earn at least Rs 1.5 lakhs per annum. Periodical review of the agent's performance by the insurers is also mandatory.
5. Fuzzy logic theory deals with all qualitative and subjective factor quantifications using Boolean logic.
6. Risk fuzzy matrix, also known as attrition fuzzy matrix, is a 5*5 matrix whose aggregate comes out as a unity matrix basically prepared to avoid subjectivity of respondents.
7. Membership degree matrix is a product of relative weight and assessment fuzzy matrix, which shows the distribution of these factors across various score values.
8. Attrition index (AI) portrays the numerical value of Insurance agents' attrition from insurance business which is derived through fuzzy logic theory.
9. The impact distribution is based on trapezoid method of fuzzy logic.
10. A decision parameter computation has been undertaken from several scenarios considering membership degree versus attribute curves and AI value was computed using eq. (3). Five attrition classes were obtained by analysing the curve break points based on midpoint change of slope on AI values versus insurance company graph. Normality test were performed at 5% significance level confirming normality of the classes for AI values of 10 insurance companies. All AI values were checked together within asymptotic significant (two tailed) levels. Also, each attrition class observed separately and mean values in each attrition class was almost equal and was greater than 0.05; therefore, AI values within each challenge zone were normally distributed. Normal plotting is a graphical method for determining whether sample data conform to normal distribution based on a subjective visual examination of the data.
11. Out of box method checks the sensitivity of result with in significance level. The same was tested through random responses.

1. Ernst & Young, Insurance industry challenges, reforms and realignment. A report submitted to Confederation of Indian Industry, 2011.
2. Verma, S., Vij, P. and Gopal, R., Study of attrition of sales force in life insurance sector. *IOSR-J. Business Manage.*, 2010, **18**, 58–66.
3. Patnayak, N., Now, agents can shift from one insurer to another. *Cafe Mutual*, 2016.
4. Bashir, S. I., Madhavaiah, C. and Naik, J. R. K., Critical analysis of traditional and modern insurance distribution channels in India. *J. Insur. Inst. India*, 2013, **9**, 59–68.
5. Indian Regulatory Development Authority, Annual Report 2013–14, 2014.
6. Indian Regulatory Development Authority, Annual Report 2014–15, 2015.
7. Zhenhai, Z., Analysis of life insurance agent commission. *Insur. Stud.*, 2003, **1**, 58–59.
8. Qian, L., Empirical research on the importance of incentive factors to life insurance agents. In International Conference on Computer Design and Applications, 2010, vol. 5, pp. 38–41.
9. Luo, K., Optimal form and deadline for paying insurance agents their commission. In International Conference on Future Information Technology and Management Engineering, 2010, pp. 115–118.
10. Ernst & Young, Americans voice of the customer. Time for insurers to rethink their relationships. Global Consumer Insurance Survey, 2012.
11. Anagol, S., Cole, S. and Sarkar, S., Understanding the incentives of Commissions Motivated Agents: Theory and Evidence from Indian Life Insurance, A working paper in Harvard Business School, 2011, 12–055.
12. Pathak, S. and Tripathi, V., Sales force turnover: an exploratory study of the Indian insurance sector. *Management*, 2010, **5**, 3–19.
13. Guthrie, J. T., Wigfield, A. and VonSecker, C., Effects of Integrated instruction on motivation and strategy use in reading. *J. Educ. Psychol.*, 2000, **29**, 331–341.
14. Mitra, S. and Ghosh, A. K., A study on effect of attrition over financial performance of the companies in life insurance sector in India. In National Conference on Emerging Challenges for Sustainable Business, IIT Roorkee, 2012, pp. 731–749.
15. Das, V. T. and Vijayalakshmi, C., Employee attrition and retention in life insurance sector: an empirical study. *Indian J. Res.*, 2015, **4**, 79–85.
16. Sanjeev, G. M., Bankers' perceptions on causes of bad loans in banks. *J. Manage. Res.*, 1997, **7**, 40–46.
17. Mony, S. V., New initiatives in the insurance sector: opportunities and challenges. *Vikalpapa*, 2005, **30**, 102–105.
18. Kumar, R.. *Research Methodology – A Step by Step for Beginners*, Addison Wesley Longman Australia Pvt Ltd, 1999.
19. Reporters, B. S., IRDA sets minimum targets for agents. Business Standards, 2010.
20. Soni, B. K., A study on pre-merger and post merger/acquisition selected financial parameters for selected cement companies in India. *SIES J. Manage.*, 2014, **10**(2), 3–13.
21. Kumar, V. and Schuhmacher, M., Fuzzy uncertainty analysis in system modelling. *Comput. Aid. Chem. Eng.*, 2005, **20**, 391–396.
22. Cheung, W. M. and Kaymak, U., A fuzzy logic based trading system. *Econometr. J. Rotterdam*, 2008, **8**, 33–45.
23. Kucukali, S., Risk assessment of river-type hydropower plants using fuzzy logic approach. *Energ. Policy*, 2011, **39**, 6683–6688.
24. Roy, N. and Roy, N. G., Risk assessment and distribution in small hydro power projects: a fuzzy. *AIMS Int.*, 2015, **7**, 1409–1415.
25. Mannar, B. R., The Indian market scenario of insurance sector. *Asia Pac. J. Res.*, 2015, **I**, 88–98.
26. Chowdhury, M. K., Rise and growth of insurance sector in pre- and post-liberalised India. *Int. J. Emerg. Res. Manage. Technol.*, 2016, **5**, 23–33.
27. Klapper, L., Lusardi, A. and Oudheusden, P., Financial literacy around the world, A report by The Standard and Poor's Rating Service Global Financial Literacy Survey, 2014.
28. Onkareppa, R., Non-performing assets management in commercial banks: reasons, consequences and initiatives. *Int. J. Market. Technol.*, 2013, **3**, 62–77.

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