ABSTRACT
Managing risk is core business of life insurance industry and hence it becomes the first priority of life insurance company to manage its own risk. It includes identification, classification and analysis of risk involved in a business. The current study focuses on the application of risk management in life insurance industry. The current study describes the risk management tools and techniques used in life insurance industry in India. The study has used both primary and secondary data to find if there is any relation between risk management and financial performance of insurance companies.

Keywords- risk management, life insurance industry, financial performance, India

Introduction
Insurance industry deals in the job of dealing with risk by making various policies definite to a risk. Hence, insurance companies should be able to deal with their own business exposed to risk. Risk management is a process involving identification, classification and analysis of risk involved in a business. It helps to identify potential risk and making decision to reduce, mitigate or transfer risk. Risk management is an essential element for any business. It is not a new practice in life insurance industry also. Major life insurance companies have their own process of risk management. But over period of time, studies have been done to improve the process of risk management in life insurance companies.

Literature review
Life insurance industry in India has gone through stages of development in last decade. The performance of life insurance industry has improved over period of time which can be seen in increased number of insured people and increase volume of premium.

There are various studies which shows the relationship between risk management and performance of company. Risk management also improves the volatility of financial performance of company such as market value, earnings, income, return on equity and share (Clifford & Smith 1995).

INSURANCE INDUSTRY IN INDIA
RISK MANAGEMENT PROCESS
The process of risk management can be described as follows-
RISK MANAGEMENT TOOLS
Risk Appetite
It is the level of risk which a company can bear at a point of time. It is necessary to evaluate risk appetite as it helps in decision making and monitoring risk.
Tokio Marine Group has adopted risk appetite framework with the objective to improve profits, capital efficiency and maintain financial stability (Ramly & Osman).
Risk Self-assessment
It is the process of identification of risk by risk management team specialized in their
fields. It helps in identifying risks which may emerge and are not yet covered (Coleman, 2010). It helps company to assess those emerging risks which were missed by management. It is the job of team to suggest control measures for those risks.

Risk registers
It is a register which contains information related to description of risk, category of risk, owner of risk, measure of risk, control measures, likelihood, impact and action plan (Jørgensen, 2001). This record can be used for quantitative risk analysis.

Common Risk Language
A common risk language is significant for bringing common understanding of risk among risk owner, management and other stakeholders (Ewold, 1991). It is done by keeping a standard and common category of risk, identification, prioritization and scoring of risk.

Risk Dashboard
It will help all the stakeholders to understand the types of risk and their status in a single view. It includes all risks such as internal, external, quantitative and qualitative.

Figure 5 shows a risk log dashboard which helps to communicate and track risk. It provides a summarize report on probability of risk and its impact (Dexter et al., 2007). There are various ERP solutions available which provide risk dashboard as shown in figure 6. This software performs the function of self-assessment, compliance, key risk indicators, internal audit, action management and risk register.

Economic capital
It is necessary to maintain the solvency of company after managing all the risks exposed. Economic capital defines the capital required to maintain the solvency of the company (Merton & Perold, 1993). It can be calculated from past records balance sheet and risk probability.

RISK MANAGEMENT TECHNIQUES
Every life insurance company practice risk management technique for managing the risk exposure (Meredith, 2004). There are various approaches for managing risk such as –

Loss prevention and control -
Every insurance company advises to have some preventive measures to minimize or prevent probability of loss (Kiochos, 1997). Prevention of loss means reducing the frequency of occurrence of loss (Rejda, 2011). Thus, insurance company’s advice their clients to strictly follow road safety rules are to reduce the chances of accidents, warning them regarding drinking and smoking habits, fire safety measures, etc.

Loss Financing -
Loss financing is a broad term which includes risk transfer, risk diversification and risk retention. The major concept behind loss financing is to have enough funds for contingency.

Risk retention – when the risk is too small and its impact is also little or the risk is unavoidable and nothing can be done to minimize its impact, then insurance companies decides to bear the risk (Rejda, 2011).

Risk transfer – in this technique, the exposure of loss is transferred to third party through insurance and reinsurance (Alijoyo, 2004). Reinsurance is helpful as the insurance company has to bear half of the loss and rest is bore by the company which can bear it. Thus, it reduces the loss of original insurer
and improves its financial health (Ayali, 2000).  

*Diversification* – this is a technique of diffusing or spreading the risk exposure (Meredith, 2004). It is generally done by keeping the uncorrelated risk together. It is optimal technique to manage return and risk

Risk avoidance –  
When a risk or loss is abandoned, it is termed as risk avoidance (Rejda, 2011). Thus, it makes the probability of loss as zero since the loss was never attained. For instance, life insurance companies avoid the risk of bankruptcy. The disadvantage of this technique is that it is not practically possible to avoid all risk. Thus, risk avoidance is not an answer to all risk exposure but it is definitely a good risk management practice.

**Methodology**

On the basis of above understanding, the study is based on the hypothesis that,  
H0 – there is a significant relationship between risk management techniques and the insurer performance  
H1 – there is no significant relationship between risk management techniques and the insurer performance

Data collection – the correlation between two is analyzed on the data collected from both primary and secondary sources. Primary data was collected by interviewing employees working in insurance companies and secondary data was gathered from selected life insurance companies’ financial statement.

Tools used – ROE, loss ratios and correlation

Time period of study – 2010 to 2019 (10 years)

**Findings**

In the current study, the financial performance of selected insurance companies is measured on the basis of ROE and loss ratio for 10 years from 2010 to 2019. It was found that the mean of ROE for 10 years is 0.033 (2010) to 0.281 (2019). The highest mean was in year 2013 i.e. 0.298. the company with highest ROE is HDFC life.

**Interpretations**

The finding on the analysis of financial statement of selected life insurance companies, it was found that there is a slow growth in ROE. It shows the poor performance of life insurance companies and low return to shareholder’s fund (Flemings, 2000). The loss ratios show that life insurance companies need better risk management technique to lower the loss. In life insurance industry, the best measure for financial performance of a company are ROE and loss ratios (Pandey, 2015). The present study shows that there is a very less positive relation between ROE and loss ratio and prevention technique. Additionally, it was found that there is a very low positive relation between ROE and loss ratio. There is very low negative relation between loss ratios and loss financing. The study also shows that there is strong positive relation between financial performance and risk avoidance technique. There is a strong positive relation between risk avoidance and ROE but the relation is week between risk avoidance and loss ratio. Thus, to improve financial performance and to reduce loss ratios, life insurance companies should adopt enterprise risk management.
Conclusion
Risk management is an essential element for any business. It is not a new practice in life insurance industry also. Major life insurance companies have their own process of risk management. The present study shows that life insurance companies need better risk management technique to lower their losses. Enterprise risk management is suggested for life insurance companies to reduce losses and improve financial position. This approach takes into account all the key activities of an insurer to check for dependencies and correlations of risk. It helps in identifying, measuring and controlling all risk exposures.

References
List of tables and figures

Figure 1 - overview of insurance industry in India
Source- ibef.org March 2019

TOP INSURANCE COMPANIES

Figure 2 - Top Life Insurance companies in India
Source- insurancefunda.in
There is a need for a separate risk management department in life insurance company (Gupta, 2011). This department will work in coordination with actuarial, underwriting, MIS, sales and marketing, finance etc. IRDA has also issued guidelines in 2010 to compulsory develop a risk management committee in organization.

The risk to which life insurer is exposed is interlinked and hence there is a requirement to look deeply into risk attached to life insurer. Each department should assess risk and consolidate to avoid double or missed counting.

According to RBI guidelines, there are three types of risks- credit, market and operational. Once risk is identified and categorized, it is to be assigned to specific personnel to manage and mitigate risk (Santomero & Babbel, 1997).

There are various models to analyse and quantify risk such as historical simulation for mortality levels, value at risk for market volatility, collective model for frequency of event occurring,
aggregate models for severity of event, stress analysis for pricing of life insurance policy.

5 Utilization of result

Risk management involves reducing risk, integration of risk, diversification of risk, hedging and transfer. The analysis of risk helps in identifying the fund needed for running the business and proper allocation of fund.

Figure 4- Risk Management at Tokyo Marine Holdings Inc.
Source – tokiomarinehd.com
Figure 5 – risk register
Source – stakeholdermap.com

<table>
<thead>
<tr>
<th>no</th>
<th>Date raised</th>
<th>Risk description</th>
<th>Likelihood</th>
<th>Impact</th>
<th>Severity</th>
<th>Owner</th>
<th>Mitigating action</th>
<th>Contingent action</th>
<th>Progress on actions</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22/12/15</td>
<td>There is a risk that assets may not be completed in time to meet production schedules.</td>
<td>Low</td>
<td>Amber</td>
<td></td>
<td>3 Scott</td>
<td>Agree writing days in advance, reallocate writer’s other work. Agree to stagger delivery of chapters so that editing can start earlier.</td>
<td>Increase duration of printing schedules &amp; move from 4 col to 2 col.</td>
<td>Update 18/12/2015 mitigation actions implemented</td>
<td>Open</td>
</tr>
</tbody>
</table>

Figure 6 - Risk Dashboard
Source – business.docs.co.uk

Figure 7- Reports through software
Source - inetsoft.com
Figure 8 – financial performance of 3 private companies for 2018-19

Source – medium.com

<table>
<thead>
<tr>
<th>Particulars</th>
<th>SBI Life</th>
<th>HDFC Life</th>
<th>ICICI Pru Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Written Premium (in Rs. Cr)</td>
<td>25350</td>
<td>23560</td>
<td>27069</td>
</tr>
<tr>
<td>Net premium earned (in Rs. Cr)</td>
<td>25160</td>
<td>23370</td>
<td>26811</td>
</tr>
<tr>
<td>Net benefits paid (in Rs. Cr)</td>
<td>11710</td>
<td>13110</td>
<td>17281</td>
</tr>
<tr>
<td>AUM (in Rs. Cr)</td>
<td>116260</td>
<td>106600</td>
<td>139532</td>
</tr>
<tr>
<td>Value of New Business (in Rs. Cr)</td>
<td>1390</td>
<td>1280</td>
<td>1286</td>
</tr>
<tr>
<td>Embedded Value (in Rs. Cr)</td>
<td>19070</td>
<td>15220</td>
<td>18788</td>
</tr>
<tr>
<td>Claim settlement ratio (%)</td>
<td>98.4</td>
<td>99.1</td>
<td>97.9</td>
</tr>
<tr>
<td>Net Profit (in Rs. Cr)</td>
<td>1150</td>
<td>1107</td>
<td>1619</td>
</tr>
<tr>
<td>ROE (%)</td>
<td>19</td>
<td>25.9</td>
<td>24.4</td>
</tr>
</tbody>
</table>

Figure 8 – financial performance of 3 private companies for 2018-19

Source – medium.com
Table 1 - Correlation matrix for risk management

<table>
<thead>
<tr>
<th>PARTICULARS</th>
<th>ROE</th>
<th>Loss prevention and control</th>
<th>Loss financing</th>
<th>Risk avoiding</th>
<th>Loss ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>Pearson correlation</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2 tailed)</td>
<td>0.282</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>11</td>
<td>7</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Loss prevention and control</td>
<td>Pearson correlation</td>
<td>0.729</td>
<td>0.235</td>
<td>-0.138</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sig. (2 tailed)</td>
<td>0.07</td>
<td>0.650</td>
<td>0.766</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>LOSS FINANCING</td>
<td>Pearson correlation</td>
<td>0.472</td>
<td>0.367</td>
<td>-0.602</td>
<td>0.101</td>
</tr>
<tr>
<td></td>
<td>Sig. (2 tailed)</td>
<td>0.132</td>
<td>0.375</td>
<td>0.075</td>
<td>0.0824</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>11</td>
<td>9</td>
<td>7</td>
<td>6</td>
</tr>
</tbody>
</table>