BEHAVIORAL STUDY OF LIFE INSURANCE POLICY SELECTION IN NORTH-EAST INDIA

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

ASHLEY LALREMRUATI

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BY

ASHLEY LALREMRUATI

DEPARTMENT OF ECONOMICS

SUPERVISOR

Prof. JAMES L.T. THANGA

Submitted

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MIZORAM UNIVERSITY

DEPARTMENT OF ECONOMICS

James L.T. Thanga
Professor
Department of Economics
Email:jametea@yahoo.com

Mizoram University
Tanhril, Aizawl
Mizoram – 796001
Ph-9436366060/ 2317504

Dated ____ JULY, 2024

CERTIFICATE

This is to certify that the thesis entitled "**Behavioral Study of Life Insurance Policy Selection in North-East India"** by Ashley Lalremruati has been written under my supervision. The thesis is the result of her investigation into the subject. Neither the thesis as a whole nor any part of it was ever submitted to any other University for any research degree.

(Prof. JAMES L.T. THANGA)

Supervisor

DECLARATION

MIZORAM UNIVERSITY

DECEMBER, 2024

I **ASHLEY LALREMRUATI**, hereby declare that the subject matter of this thesis is the record of work done by me, that the contents of this thesis did not form basis of the award of any previous degree to me or to the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/ Institute.

This is being submitted to the Mizoram University for the **Degree of Doctor of Philosophy in Economics.**

(ASHLEY LALREMRUATI)

Candidate

(PROF. GIRIBABU. M)

Head of Department

(Prof. JAMES L.T. THANGA)

Supervisor

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Date: **(ASHLEY LALREMRUATI)**

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LIST OF ABBREVIATIONS

ADF	Augmented Dickey-Fuller
AIC	Akaike Information Criterion
ATM	Automated Telling Machine
BIC	Bayesian Information Criterion
CAGR	Compound Annual Growth Rate
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CPI	Consumer Price Index
CSEE	Central and South-Eastern Europe
ECS	Electronic Clearance System
EFA	Exploratory Factor Analysis
E-KYC	Electronic- Know Your Customer
GDP	Gross Domestic Product
GDS	Gross Domestic Saving
GNI	Gross National Income
GSDP	Gross State Domestic Product
GSVA	Gross State Value Added
GVA	Gross Value Added
HDI	Human Development Index
IRDAI	Insurance Regulatory and Development Authority of India
ISE	Islamabad Stock Exchange

IQR	Inter-Quartile Range
KMO	Kaiser-Meyer-Olkin
LIC	Life Insurance Corporation of India (LIC)
MENA	Middle East and North Africa
NA	Not Applicable
NCAER	National Council of Applied Economic Research
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary Least Squares
OR	Odd Ratio
PCA	Principal Component Analysis
PCI	Per Capita Income
PMJJBY	Pradhan Mantri Jeevan Jyoti Bima Yojana
RBI	Reserve Bank of India
RMSEA	Root Mean Square Error of Approximation
SIC	Schwarz criterion
SD	Standard Deviation
SDG	Sustainable Development Goals
SIC	Schwartz Information Criterion
TLI	Tucker–Lewis Index
ULIP	Unit Linked Insurance Policy
UNCTAD	United Nations Conference on Trade and Development
UT	Union Territories
VALS	Values, Attitudes, and Lifestyles

VAR	Vector autoregression
VIF	Variance Inflation Factor

CHAPTER 1

INTRODUCTION

1.1. Overview of the Study

Life insurance is a protection against the risk of premature death of an income earning member of a household. It is a contract between an insurer and policyholder for the insurer to pay the designated beneficiary a sum of money upon the insured individual's death (National Council of Applied Economic Research, 2011). In traditional societies like India, the joint family system itself could be considered an insurance umbrella for surviving family members. But in modern times, this safety net is increasingly made through the market mechanism by 'buying insurance'. Thus, individuals pay a price or premium to the insurance company for the contractual arrangement and the insurance company provides compensation if the specified event occurs. Individuals essentially pool their risks which gives insurance a social characteristic (Ranade & Ahuja, 1999).

The life insurance sector is of quantitative importance to the development of financial institutions (Outreville, 1996) and the development of a life insurance sector plays an important role in economic development for developing economies (Guérineau et al., 2018). Insurance contributes to the economy by promoting financial stability, facilitating trade and commerce, mobilizing savings, allowing efficient capital allocation, and enabling better risk management and loss mitigation (Skipper, 1997). India is one of the fastest growing economies and ranked 10th on global life insurance business. The insurance sector has seen steady and consistent growth and is one of the fastest growing insurance sectors in the world owing to strong economic growth, regulatory developments, a young population with increasing disposable incomes and digital penetration (IRDAI, 2022). Thus, the study is concerned with understanding consumer behaviour and purchase decisions in the life insurance sector.

According to traditional economic theory, it is assumed that consumers are rational and make decisions to maximise their expected utility. On the other hand, behavioral economics proposes that consumers do not perfectly optimize their decision and fail to maximise utility due to limited time, knowledge and cognitive ability (Simon, 1955; Kahnemann & Tversky, 1979). Then, purchase decisions are made under bounded rationality and insurance policies, being financial products, can be difficult to understand. Consumers need a certain level of financial aptitude and knowledge to make fully informed decisions, and it had been found that financial literacy is not high even among educated individuals (Hung et al., 2009; Huston, 2010). Taking all of this into consideration, the study attempts to present a holistic understanding of the life insurance market in North-East India and examine the purchase decisions, holding patterns and psychological factors that may be at play for policyholders making life insurance purchases.

1.2. Life Insurance in India: Institutions and Market Overview

The first statutory regulation regarding life insurance business in India was the Indian Life Assurance Companies Act, 1912. Although the number of insurance companies grew steadily, there were growing allegations of unfair trade practices, due to which the government nationalized 245 Indian and foreign insurance companies, and the Life Insurance Corporation of India (LIC) was formed under the Life Insurance Corporation Act, 1956. LIC was formed with the objective of developing it as a social security cover for all sections of the society and as an important mechanism for channelling the savings of people for national development programmes (Kumar, 1991). LIC maintained a monopoly until the late 1990s when India liberalised its economy and the Insurance Regulatory and Development Authority (IRDA) Act, 1999 was passed as an Act of Parliament to establish IRDA to regulate and develop India's insurance sector. The goals of IRDA are to safeguard the interests of insurance policyholders and initiate different policy measures to help sustain orderly growth in industry (Rao, 1999).

India has the tenth largest insurance market in the world with a 1.9 per cent share in global insurance premium. During 2022-23, the industry recorded a premium income of Rs.7.83 lakh crore with 12.98% growth, and there were 284 lakh new individual policies. Among the 24 life insurance companies registered in India, LIC is the only one in the public sector. Although private companies have created stirring competition and innovation, LIC is still the largest insurer in the country with about 64.02% of the market share of first year premium. Insurance intermediaries in the form of individual agents are the most effective way of distributing life insurance, as they create an awareness and a demand for the policies. Agents have been the major channel of distribution for insurance policies for the LIC since its inception in 1957. There are a total of 2628208 individual agents across the public and private sector, and they contributed to 52.76% of new individual business premium in 2023 (IRDAI Annual Report, 2023).

Even with consistent upward growth in the life insurance sector, the market is still underserved with insurance penetration at 3% in 2022-2023 (IRDAI Annual Report, 2023). This could be attributed to the fact that even though a majority of Indian households save responsibly, many do not prioritise financial planning. Awareness of life insurance is much lower in rural than urban households, and even if consumers are aware of life insurance, awareness does not necessarily translate to demand (National Council of Applied Economic Research, 2011). There exists a need to effectively promote life insurance ownership across the geographical and economic spaces in India through financial inclusion. Financial inclusion is as "the process of ensuring access to financial services, timely and adequate credit for vulnerable groups such as weaker sections and low-income groups at an affordable cost" (Reserve Bank of India, 2008). Financial inclusion is positioned prominently as an enabler of developmental goals in the 2030 Sustainable Development Goals (SDGs) and the government has taken initiatives on banking, insurance, pension, market development, strengthening infrastructure, increasing financial and literacy awareness and consumer protection. The Government of India introduced 'Pradhan Mantri Jeevan Jyoti Bima Yojana' (PMJJBY) in 2015 to provide low-cost life insurance, i.e., a life cover of Rs.2 lakh for a one-year period which is auto-

renewable every year at a premium of Rs.330 per annum. With a view of having uniformity across all insurers and to make a simple product that would broadly meet the needs of the average customer, IRDAI also introduced “Saral Jeeva Bima” in 2021. It is a term life insurance policy which is relatively simple to understand, meets the key needs of a large number of customers and enhances ease of purchase with its uniform terms and conditions across insurers. Other key initiatives include efforts to increase awareness among citizens on the advantages of insurance, fostering greater supply of insurance and micro-insurance policies, enabling the issue of insurance policies in electronic form, and creating the Insurance Ombudsman for quickly addressing grievances and mitigate problems of the insured customers (Reserve Bank of India, 2022).

1.3. Conceptual Framework

The study includes various concepts which can be broadly divided into concepts from life insurance and concepts from psychological factors included in the study.

1.3.1. Life insurance concepts

Since the study is mainly concerned with the purchase and selection of life insurance policies, it is important to define the terminologies and concepts used in life insurance policies. The policyholders were asked to give information regarding how many policies they owned, what kind of policy they chose, who it was bought for, premium amount, sum assured, policy duration, etc. These concepts and terminologies are explained below:

- Premium- The amount of money paid for an insurance policy. The premium can be paid in different intervals, e.g. monthly, quarterly, annually.
- Sum assured- Sum assured is chosen by the policyholder at the time of purchase, it is a fixed amount paid to the nominee of the plan in the event of the policyholder's demise.

- Policy duration- It is the duration of the life insurance policy which is chosen at the time of purchase. Policyholders choose different durations based on their needs and expected outcome.
- Term policy- It is the most basic policy which offers life coverage, i.e., the sum assured is paid to the beneficiary if the policyholder dies during a specified period. Term policies have lower premiums and there is no maturity benefit.
- Whole Life policy- It provides insurance coverage to the insured for their entire life, up to 100 years of age. The sum assured is paid to the beneficiary in the event of the policyholder's demise. Unlike term policy, there is an addition of maturity benefit, which is paid to the policyholder if they cross 100 years of age.
- Endowment policy- It provides a combined benefit of life insurance and savings. They provide life coverage and help in saving money regularly over a period to get a lump sum at maturity. It is used to help fulfil long-term goals as the sum assured/ maturity is paid to the policyholder at the end of the policy duration/tenure.
- Moneyback policy- It combines life coverage and investment by paying a percentage of the sum assured throughout the duration of the policy and provides a way to plan life with an expected sum of money at regular intervals. It is more expensive as beneficiaries also receive the remaining portion of the sum assured and accrued bonus if the policyholder does not survive the tenure.
- Unit Linked Insurance Plan (ULIP)- It provides the dual advantage of life coverage and investment. A portion of the premium is invested in market-linked funds and investment assets chosen by the policyholder, while the rest provides life insurance coverage. It is considered a long-term investment instrument that comes with risk protection.
- Group policy- It covers a group of people under one master policy. The premiums are lower, and they are generally provided as part of an employment benefit.

- Pension policy- It is designed to provide a regular income scheme to policyholders after retirement. Policyholders accumulate a sum during their working years, which is then used to provide a steady income after pension. It provides financial security and helps with wealth creation after retirement.

1.3.2. Psychological concepts

The study is concerned with purchase decisions from the perspective of behavioral economics, i.e., how life insurance purchase decisions and selections are made under bounded rationality. Bounded rationality makes the assumption that individuals do not optimise their decisions because of limitations in cognition and price of gathering information. Under bounded rationality, i.e., rationality bounded by human abilities, individuals rely on certain cognitive functions for decision-making. The theory of bounded rationality is concerned with the concept of decision-making called 'satisficing', which combines the words 'satisfy' and 'suffice' (Simon, 1955). Contrary to classical economists, Herbert Simon argued that consumers do not necessarily attempt to maximise utility when they make economic decisions. Due to constraints with cognitive ability and informational costs, people make decisions to find something that is good enough or satisfactory (Channa, 2016).

Expanding on this theory, Tversky and Kahneman (1974) posited two systems of reasoning- System 1 and System 2. The operation of System 1 is quick and automatic, and there is no use of voluntary control and very little effort. On the other hand, the operation of System 2 is slow, requires more effort and demands deliberate mental activities (Ogaki & Tanaka, 2017). Essentially, System 1 responds to intuition and System 2 responds to reasoning. Tversky and Kahneman (1974) introduced three types of heuristics, or intuitive judgement used by System 1, viz., representativeness, availability, and anchoring, when they examined decision making under uncertainty. The use of System 1 in decision-making can also result in the influence of behavioral biases. Behavioral biases refer to systematic patterns of deviation from rationality in decision-making. They often lead individuals to make irrational choices or judgmental errors, as they base their decisions on cognitive factors such as emotions, beliefs, or social influences, rather than purely objective analysis (Chira et al., 2008).

Since it is the theoretical basis of the study that consumers act under bounded rationality, it is important to study the different heuristics and behavioral biases that influence decision-making. These concepts are explained below:

- Psychographics- It is the study of consumer personality traits in an attempt to understand and predict patterns in consumer behaviour. It includes the traits, values, attitudes and lifestyle of the consumer (Niosi, 2021)
- Risk-taking behaviour- It is the likelihood of consumers to take risks in general and financial domains. Individuals may be risk averse, risk neutral or risk lovers depending on the situation (Ding et al., 2010).
- Assertiveness- Assertiveness is a quality in individuals who more likely to voice both positive and negative opinions. Assertiveness includes admitting personal shortcomings, giving and receiving compliments, initiating and maintaining interactions, and expressing feelings (Zeigler-Hill & Shackelford, 2016).
- Fatalism- Fatalism is the notion that individuals believe they lack the ability to determine their own outcome. They believe that their life is determined not by themselves but by God, fate or other external divinities (Burnett & Palmer, 1984).
- Information seeking behaviour- Information seeking behavior involves a set of actions including seeking information, evaluating and selecting relevant information and finally using this information (Kumar, 2021). It is the behaviour of individuals to actively pursue these steps before making decisions.
- Community involvement- It is the involvement of individuals in various community activities (Burnett & Palmer, 1984).
- Socialization preference- It is the tendency of individuals to prefer either socialising with other people or spending time alone (Burnett & Palmer, 1984).
- Past experience- It is the tendency of consumers to make decisions based on past experience. Past experience includes previous experience of product, service quality, branding and other marketing dimensions (Gronroos, 2000).

- Price consciousness- Price consciousness is the degree to which the price of a product affects consumers purchasing behaviours. The product's price is the main determinant of their purchase intentions and behaviour for these individuals (Rihn et al., 2018).
- Health-conscious behaviour- Health consciousness refers to the extent to which an individual tends to undertake health actions. They strive to improve and / or maintain their welfare by engaging in healthy behaviours, such as eating healthy food, physical activity, caring for prevention, etc. (Gould, 1988).
- Heuristic- Heuristics are simple rules enabling smart choices to be made using minimal information and exploiting the structure of information given the environmental context. They are essentially common-sense rules of thumb derived from experience, and they may be procedurally rational because they are used by people to make relatively quick decisions in uncertain situations when a full assessment of available information is difficult and/or time-consuming (Tversky & Kahneman, 1974; Gigerenzer & Goldstein, 1996).
- Availability heuristic- It is a mental short-cut in which events that can be easily recalled are deemed to occur with higher probability and more attention is given to the most easily recalled information (Tversky & Kahneman, 1974). Individuals make the mistake of assuming the probability of an event based on the number of times they have seen it.
- Representativeness heuristic- The representativeness heuristic involves the estimation of probability of an event by comparing it to an existing prototype that already exists in our minds. This prototype is what individuals think is the most relevant or typical example of the event in question. It can make people see pattern that is not there (Tversky & Kahneman, 1974).
- Anchoring and adjustment- It is a heuristic that involves making an initial estimate of a probability called an anchor, and then revising or adjusting it up or down in the light of new information. This typically results in assessments

that are determined by an anchor value or reference point (Tversky & Kahneman, 1974).

- Affect- Affect is the instinctual reaction to a stimulus when people let their likes and dislikes determine their beliefs or preferences and refer to affective feelings when judging the risks and benefits of an activity (Channa, 2016).
- Halo effect- Halo effect is when favourable first impressions influence judgements. It causes people to look at a single quality to produce a positive or negative impression and obstructs people's view of true characteristics of a person, product or an organisation (Sum & Nordin, 2018).
- Confirmation bias- It is the tendency of people to overlook information that is contrary to their views in favour of information that confirms their views. When an individual supports or opposes a particular issue, he will not only seek information that confirms his beliefs, but also interpret news stories in a manner that upholds his existing ideas and recall things in a way that it reinforces these ideas (Channa, 2016).
- Herding effect- It is a form of cognitive bias that is defined as a person's obvious intention to copy the behaviour or action of other people. Individuals decide to follow others and imitate group behaviours rather than decide independently on the basis of their own private information (Baddeley, 2009; Kurniawan & Murhadi, 2018).
- Social pressure- It is the tendency of people to conform to social pressure, real or imaginary (Channa, 2016).
- Overconfidence- It is a biased aspect that arises when a person exaggerates his ability. Most people display unrealistically rosy views of their abilities and prospects (Weinstein & Klein, 1996).
- Framing effect- If decisions are rationally made, how the same contents are communicated should not affect the decisions. But when the frame of communication changes, the perception of the same contents can change. For this reason, decisions can change depending on the frame of communication for the same contents. This is called the framing effect (Tversky & Kahneman, 1974).

- Asymmetric information- In an economic transaction, one party may possess more information than the other party, which is called asymmetric information. The party with more knowledge and information is typically the seller of a good or service, even though the reverse is also possible (Akerlof, 1970). The concept of asymmetric information is especially relevant in the case of insurance because the role of information is more important in insurance than other markets. The asymmetric information problem may manifest in two ways, adverse selection and moral hazard. The term "adverse selection" itself originated in the context of insurance, and the insurance market has been the focus for some of the earliest economic theories about it. Adverse selection exists in an insurance market when buyers of insurance have information about their risk that the insurers who underwrite their policies lack and use this information in making their insurance purchases. The policyholder may be better informed about either the probability of a loss, the distribution of the size of the loss in the event that a loss occurs, or both (Pauly, 1974). Moral hazard is a change in behaviour after the purchase of insurance due to a sense of safety, wherein the insured may indulge in more reckless or careless behaviours due to the insurance coverage (Rothschild & Stiglitz, 1976).

1.4. Significance of the Study

Life insurance is an instrument for financial security, saving, investment and loss reduction. It enables economic activities and contributes to the economy in terms of its size, employment and managed assets. In fact, economic growth of a country is characterised by the soundness of a national insurance market (UNCTAD, 1964; Outreville, 1996; Skipper, 1997). Life insurance can increase productivity and reduce the demand for liquidity by shifting from unproductive use to more productive use of resources (Webb et al., 2002). As it is, insurance penetration in India is still low despite its crucial role in improving financial well-being. Given its place in a developing economy striving towards financially inclusive economic growth, it is important to study the life insurance market and the understand its dimensions.

The decision to purchase a life insurance policy is a difficult one as insurance policies are often complex (Schwarcz, 2010). Buying a life insurance policy is not one decision alone; consumers have to select what type of policy to buy, how much premium to pay, how long they want the policy for, etc. Fully informed decisions require a good knowledge and aptitude for financial products. This is why consumers often make mistakes in their financial choices which result in substantial financial losses (Agarwal et al., 2009). Consumers are bound by only time, information and knowledge limitations when they make these decisions. Further, since they make decisions under bounded rationality, they are also bound by that can be in the form of heuristics and behavioral biases. Many studies have confirmed the impact of psychological biases and heuristics on life insurance purchase decisions (Bhatia et al., 2020). A consumer's buying behaviour is also influenced by their psychographics, i.e., their personality, values, attitudes and lifestyle (Burnett & Palmer, 1984). Thus, it is important to examine the decisions to purchase and select life insurance policies to understand consumer behaviour and gain a more holistic view of the life insurance market.

1.5. Statement of the Problem

Asymmetric information is inherent to the subject of life insurance as the role of information is more important in insurance than most markets and there is a potential for market failure arising from the existence of asymmetric information in insurance markets (Einav & Finkelstein, 2011). This source of incompleteness in the insurance market is viewed as fundamental factor obstructing efficient operations of insurance market (Cawley and Philipson, 1999). Incomplete information can affect consumers in their purchase decision, preventing them from choosing the optimal policy which can further lead to policy lapsation, a crucial issue in the life insurance industry in India. Asymmetric information can also manifest in the form of adverse selection, which is when one party has asymmetric information before a transaction and uses it to their advantage. If policyholders withhold information, the insurer cannot accurately rate their risk of loss and if insurers withhold information, consumers

cannot make informed decisions. This can lead to mis-selling, the primary reason for lapsation of insurance policies in India (Subashini & Velmurugan, 2012; Halan et al., 2014; Nithiyalakshmi et al., 2016). Consumers rely on agents to find a suitable life insurance product (Crosby & Stephens, 1987) and if consumers are not well informed, the complexity of financial decisions coupled with the prevalent collectivistic culture may lead to deceptive sales practices by agents in order to gain higher commissions (Ericson & Doyle, 2006). Since insurance purchase involves a series of intricate decisions, it is paramount to examine how the policyholders in North-East India make purchase and selection decisions.

The available literature on the life insurance market in India is mainly descriptive and focussed on the life insurance providers. The studies on demand are largely limited to demographic patterns of life insurance demand. However, the nature of life insurance and the risk it insures makes the selection decisions susceptible to the limitations posed by behavioral finance. The existing literature on consumer behaviour in the life insurance market is scarce and there is little knowledge about the psychographic and behavioral elements of insurance purchase, even though such studies have become common in developed countries. The ongoing efforts to promote life insurance have resulted in numerous advertisements and promotions highlighting the benefits of insurance which could drive the choices of consumers. Although these initiatives are desirable, there is little information regarding the right policy selection for consumer needs and little is known about the possible cognitive biases which influence decision-making. Insurance agents may use the same sales tactics and pitches that paint a desirable outcome irrespective of the differences in consumer status and goals. Thus, the study aims to fill this gap in literature and provide a more holistic view of selection decisions involved in life insurance within the context of bounded rationality for policyholders in North-East India.

1.6. Objectives of the Study

The main objectives of the study are:

1. To analyse the growth of insurance sector in relation to Gross Domestic Product (GDP).
2. To study the socio-economic and psychographic profile of life insurance policy holders and effect on subscription.
3. To analyse the relation between policy selection and expected returns of consumers.
4. To study consumers' behavioral bias in life insurance purchase.
5. To study the dimension of asymmetric information in the purchase of insurance.
6. To analyse the determining factors of policy lapsation.

1.7. Hypotheses

1. The growth of life insurance increases with increase in economic growth.
2. There is a direct relationship between expected returns and policy selection of consumers.
3. Behavioral bias has a significant impact on life insurance policy selection.

1.8. Methodology

1.8.1. Scope of the study

The geographical scope of the study is North-East India, which includes eight states i.e., Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram, Nagaland, Tripura and Sikkim. With a weaker economy, the North-East region lags behind the rest of India and the status of financial inclusion is comparatively lower than the national average (Bhanot et al., 2012; Das & Guha, 2015; Maity & Sahu, 2021).

The landscape, the range of communities and geographical and ecological diversity make these states quite different from other parts of the country. The region covers an area of 2,62,179 sq. km. constituting 7.9% of the country's geographical area. According to the 2011 census, the North-East region has only 45 million people or about 3.8% of the total population in India. Assam is the most populous state and constitutes 68% of the entire North-Eastern population. The region has over 160 scheduled tribes and over 400 other tribal and sub-tribal communities and groups. The states all have long established traditions of community-based economic and social organization, and it is predominantly rural with over 84% of the population residing in the countryside.

The Life Insurance Corporation of India (LIC) is chosen for the study for several reasons. It was the only life insurance provider in India since the nationalisation of life insurance in 1956 to 1999 when IRDA was established. Till today, life insurance in India is coterminous with LIC as it is the oldest, largest and only public life insurance provider in India with about 64.02% of the market share of first year premium (IRDAI, 2022). It acts as a national insurance agency to pool and redistribute risks associated with death of policyholders in millions of households. It is also a dominant financial intermediary as a major savings institution to channel investible funds to productive sectors (Rao, 1999). LIC employs 1347325 individual agents, and these agents constitute the largest distribution channel of life insurance in India. While the individual agents sold an average 2 life insurance policies, LIC agents sold an average of 8 life insurance policies in 2022-2023. LIC covers 24.85 crore individual policies and 8.48 crore group policies, with a total income of Rs.8,53,661.86 crore. It had 204.65 lakh new business policies and accounts for 71.76% of the market share in policies in 2022-2023 (LIC Annual Report, 2023). Due to its market share and wide distribution across different states, there are no single private companies that can compete directly with LIC. Thus, LIC is chosen for the study and samples are collected from the policyholders and individual agents of LIC.

1.8.2. Sampling design

The study does not make attempts to have inter-state comparisons but is rather focussed on individual choices in life insurance purchase decisions. It was considered that state-wise classification is not required, and samples are selected in a staged manner. Three states out of the eight in North-east India are selected purposively, i.e., Assam, Meghalaya and Mizoram. Assam has by far the largest population, accounting for 68.25% of the North-East population. It has the largest economy and the highest number of banks and financial institutions in the region (Reserve Bank of India, 2022). Moreover, the life insurance market is significantly bigger in Assam than the rest of the states, accounting for 84.98% of the total number of LIC individual agents and 61.63% of offices in the region (Handbook on Indian Insurance Statistics, 2022). While Assam is predominantly a plain area, the other two are hilly states with relatively poorer economies. While Meghalaya falls in the middle when it comes to the insurance market (9 offices with 701 individual agents), Mizoram falls on the lower end (7 offices and 150 individual agents) among the North-East states.

The selection of policyholders is done in a systematic manner using simple random sampling methods in a staged process. Firstly, the Branch Managers in the main offices of each state were approached for permission to conduct the research, after which a list of individual agents in the state was obtained. Agents are selected randomly from the list, who were further approached for a list of their clients/policyholders. Secondly, policyholders are selected with equal allocation among the selected agents, and the selected agents helped to facilitate the list and contact information of sample policyholders. The identified sample policyholders were approached for data collection. Since participation is strictly voluntary and confidential, all the policyholders in the study were informed of the study and its parameters and they all signed consent forms before participating in the study.

The survey instrument used for policyholders is a questionnaire schedule to acquire relevant information regarding socio-economic and psychographic profiles, purchase behaviour, policy choices, expected returns and experiences of

policyholders regarding their life insurance policies. The questionnaire was facilitated in-person as far as possible and was continued online according to the convenience of the selected policyholders. The selected agents and Managers were also interviewed in person using a semi-structured interview schedule to obtain information pertaining to their experiences as life insurance agents, with clients and with the company LIC itself. The structure of the interview was to better capture their views and opinions with open-ended questions than close ended questions and rating scales.

The sample size was calculated using the Cochran method (1963), i.e., $n = \frac{Z^2\,pq}{e^2}$, where, Z^2 is the abscissa of the normal curve that cuts off an area α at the tails, e is the desired level of precision, p is the estimated proportion of an attribute that is present in the population, and q is 1-p. The selected parameters in the study are policy selection (percentage of policies taken for life coverage), socio-economic status (percentage of policyholders who are salaried and percentage of policyholders with education above matriculate), psychographic profile (average score of the total scale) and behavioral bias (average score of the total scale). Since the number of policyholders in the region is not available and there is no available secondary data for the psychological profiles, it was decided that the calculation of an efficient sample size would be undertaken after certain amount of data is collected. Then, after the first 110 samples were collected, the optimum sample size was calculated using the formula. The optimal sample size with 95% confidence with 5% precision was found to be 121. It was considered necessary to enhance the sample size considering the need to accommodate the classification effect. It is a theoretical fact that the variance of any estimate decreases with increasing sample size. So, estimates will be closer to the true value with the increase in sample size (Gumpili & Das, 2022). It was decided that 360 samples would be collected to be equally distributed across the three states.

However, the survey could only be conducted among a total of 347 policyholders in the region and the rest could not be collected due to difficulties in locating and contacting the selected policyholders. After data cleaning and

processing, another 12 cases had to be removed due to inconsistent responses such as selecting the same responses throughout the questionnaire and leaving too many questions blank. It should be noted that participation was strictly voluntary and there was no compulsion to the policyholders to answer the questionnaire in any particular way, or even at all. Then, the study had a final sample size of 335 policyholders. Since it is possible that one person holds more than one policy, the study covers 335 policyholders and 401 life insurance policies.

The study uses secondary data concerning life insurance and the economy in India from different sources. Economic data was obtained from Economic Survey and RBI Reports on Handbook of Statistics on Indian Economy and Handbook of Statistics on Indian States. Secondary data about the life insurance industry was obtained from IRDAI Annual Reports, IRDAI Handbook of Indian Insurance and LIC Annual Reports.

1.8.3. Analytical framework

The study uses different statistical methods to examine its objectives and test the hypotheses. These methods are listed below:

1. The growth of economic indicators and life insurance indicators was examined using Compound Annual Growth Rate (CAGR). To examine the relationship between economic development and life insurance sector, the study uses log-linear regression. The Granger Causality test is used to examine the cause-effect relationship between the factors, and Vector Autoregression is used to further observe the lagged relationship between the growth of economic development and life insurance. Multiple macroeconomic factors were taken to examine the demand for life insurance, but due to high multi-collinearity, the dimensions are reduced using Principal Component Analysis (PCA). The new constructs were used to study the demand for life insurance policies using linear regression. The details of these methods are presented in Chapter 3.

2. To examine the relationship between policy selection and purchase motivation, the study uses binary logistic regression. The relationship between policy selection and different indicators of socio-economic status was analysed using the Chi-Square test of independence. The details of these methods are presented in Chapter 4 with interpretation of results.
3. The data for consumer behaviour, psychographic profiles and behavioral biases of policyholders are collected using the Likert scale. Likert Scales are the gold standard of the psychographics industry and according to the Journal of Clinical Health Psychology, 9 out of 10 behavioral studies use a Likert-type scale (Hartley, 2014). The respondents were asked to respond to the statements regarding their attitude, opinions, behaviour and lifestyle on a five-point Likert scale from strongly disagree to strongly agree. The statements are designed to quantitatively capture qualitative details and recognize relevant aspects of the studied consumer traits (Demby, 1989). The given statements reflect the concept of each variable being studied, and these statements are formulated in consultation with a psychology expert.
4. The dimensional structure of psychological factors (psychographic profiles and behavioral biases) is examined using Exploratory Factor Analysis, and Principal Component Analysis (PCA) is used for factor extraction. The extracted components are further analysed using Confirmatory Factor Analysis. The new constructs are regrouped using mean and standard deviation based on relevance. 'Relevance' is an indication of how much of the trait the policyholder exhibits, i.e., if a given statement has low relevance, the policyholder gave a low score and hence does not display much of that particular characteristic. In other words, that factor is not very relevant to the policyholder.

   The relationship between the new extracted constructs for psychographics and biases and particulars of life insurance policies selection (choice of policy type, policy duration and annual premium) is examined using the Chi-Square Test of Independence. Further, the impact of psychological factors on policy selection is examined using binary logistic regression. The details of model formulation are given in Chapter 5 with the interpretation of results.

1.9. Limitations of the study

There are certain limitations in the study due to its nature and scope constraints, some of which are discussed below:

1. Some LIC branches approached for data collection were very hesitant to divulge information due to the sensitive nature of life insurance policies. There were many considerations on the part of the Managers and agents as they feared data leaks to their competitors. Although the purposes of the study and the confidential nature of information was clearly explained, and copies of the questionnaire and interview schedules were shown to them ahead of time, it was difficult to compile a client list from some agents. This led to some structural challenges as there were difficulties and constraints in constructing a sampling frame for the policyholders.
2. Some policyholders were very reluctant to respond to the survey, and many of the selected policyholders had to be replaced from the client list after the selection was completed. Many of the policyholders who were contacted were afraid of scams and did not want to provide any information. It should be noted that these policyholders were first briefed about the study and their option to voluntarily participate, and they were informed that there are no identifiers in the questionnaire such as name, phone number or address. Still, many policyholders chose not to participate not because of other limitations, but because of fear of scams. There were also difficulties in locating the sample policyholders due to challenges with geographical isolation. Since the policyholders were selected at random, canvassing proved to be a challenge for the facilitator,
3. A number of questionnaires were also returned with incomplete responses or non-responses and had to be eliminated from the study. Moreover, it was observed that many policyholders who participated in the study did not know the details of their policy. Many could not identify even what type of policy they held, and the facilitator often had to help them find this information.

4. Although the sample size is adequate, there are many classifications of different policy types. Due to this classification, the cell frequency of some policy types is compromised in the analysis.
5. Although the interviews with life insurance agents were exhaustive, the sample size is small as against size of the life insurance industry in North-East India. It was also observed that some agents were hesitant to answer questions that could have negative connotations such as challenges working as a life insurance agent, challenges with claims, etc. although they were briefed about the study and the confidential nature of any information obtained from the interviews.

In spite of the limitations discussed above, sincere efforts were given to produce the best results possible and complete the study, and the results obtained in the study are also deemed to be valid, reliable and credible findings.

1.10. Scheme of Chapterisation

Chapter 1: Introduction

Chapter 2: Review of Literature

Chapter 3: Growth Performance of Life Insurance and Economy in India

Chapter 4: Life Insurance Holding Patterns in North-East India

Chapter 5: Bounded Rationality and Life Insurance Policy Selection: An Empirical Analysis

Chapter 6: Summary of Findings and Recommendations

Bibliography

Chapter 2

Review of Literature

2.1. Introduction

There is a plethora of studies regarding the different dimensions of the life insurance market. The literature included in this chapter have been chosen given their relevance to the scope, objectives and design of the study. The chapter includes literature with different topics related to the life insurance market, such as its relationship with economic factors, growth and development, determinants of the demand for life insurance, behavioral biases evident in policy selection, lapsation of insurance products and the presence of asymmetric information in the life insurance sector. The chapter includes both international and national studies during the period ranging from 1955 to 2021.

2.2. Insurance and Economic Development

The Gross Domestic Product (GDP) of a country is an indication of its economic development and average income levels for a given period. Studies have found evidence that the development of the insurance sector is related to economic growth (Ward & Zurbruegg, 2000; Lee, 2019) and in almost all studies considering insurance demand at the country level, GDP shows up as by far the most important driver of growth (Outreville, 2012). Thus, the link between GDP and the insurance market is such that an economy with a high level of GDP has a well-developed insurance market, along with high levels of the household income. This results in a positive influence of GDP on life insurance demand (Emamgholipour et al., 2017; Mitra, 2017). Emamgholipour et al. (2017) examined the impact of GDP on life insurance penetration in the Middle East and North Africa (MENA) region. They found a positive relationship between GDP and life insurance penetration but with

low demand elasticity due to the dominance of mandatory life insurance products over voluntary life insurance.

Studies in literature have found that economies with higher Gross Domestic Product typically have better developed financial sectors (Li et al., 2007). Considering this explanation, studies also found that economies with high financial sector development have a high level of life insurance consumption (Li et al., 2007; Matthew & Sivaraman, 2017; Zerriaa et al., 2016). Aside from this, it was postulated that financial sector development includes the growth of the credit system, which requires businesses and consumers to purchase life insurance policies as securities for the credited amount. They examined a positive relationship between financial sector development and life insurance purchases. Moreover, with respect to financial variables, financial development was found to be the main driver of life insurance consumption in Africa. (Sliwinski et al., 2012; Alhassan & Biekpe, 2016). A positive effect of financial development on the penetration and density of life insurance was also observed by Sen and Madheswaran (2013) in Asian economies.

Emamgholipour et al. (2017) used Human Development Index (HDI) to assess the population's risk preference in the Middle East and North Africa (MENA) region and identified a significant positive effect of HDI on demand for life insurance. This explained that in order to increase and enhance the demand of life insurance, it was first necessary to improve the facets of HDI such as life expectancy, literacy rate and per capita income of the population. Using aggregated national data, Beenstock, Dickinson and Khajuria (1988), and Truett & Truett (1990) used aggregated national data to demonstrate the positive correlation between life insurance premium expenditures and national income. Browne and Kim (1993) further examined the drivers of life insurance penetration in 1987 using a sample of 45 countries. They found that life insurance was positively correlated with national income and wealth (as proxied by social security expenditures) and negatively correlated with inflationary expectations, suggesting that economic development and economic stability greatly increase life insurance consumption.

Beck and Webb (2003) used income per capita and determined that income per capita and life insurance consumption are positively correlated. Li et al. (2007) and Elango & Jones (2011) also found that disposable income measured using GDP per capita had a positive, statistically significant effect on life insurance demand in emerging economies. The authors found evidence suggesting that gross national income (GNI) per capita, interest rate and merchandise trade had a significant positive effect on life insurance density. Kjosevski (2012) employed fixed-effects panel regression for 14 Central and South-Eastern Europe (CSEE) countries from 1998 to 2010 to identify GDP per capita, inflation, health expenditure, level of education and rule of law as the significant determinants of life insurance.

Gandolfi & Miners (1996) determined that household income has a positive impact on the life insurance ownership amount. Households with high-income levels are more risk-averse and thus increase their demand for life insurance policy. Also, as household income increases, it increases the household's overall financial capability to purchase life insurance (Kakar & Shukla, 2010; Lee et al., 2012). Moreover, a study by Shi et al. (2015) considered the non-linear relationship between income and money spent on life insurance and found that income factor has a hump-shaped effect (the demand increases in a curvilinear fashion up to a particular income and then starts decreasing) on demand for life insurance products. In contrast, a study also observed a negative effect of income on life insurance purchases. It explained that life insurance is an inferior product compared to other financial products in the market with complementarities (Alhassan & Biekpe, 2016).

Income distribution represented by the Gini coefficient negatively affects life insurance demand as mostly the middle-class people in the economy purchase life insurance, as poor people often cannot afford to purchase insurance products and rich people have a lesser need for life insurance protection. (Dragos, 2014). However, Pliska and Ye (2007) and Zhu (2007) explained that the consumer's future income has a positive impact on the life insurance ownership, as high future income incentivizes consumers to buy life insurance products. In addition, Mathew and Sivaraman (2017) associated higher income with the educational level of the

consumer and thus explained that consumers with higher educational levels are better at managing their risk by investing in low-cost, high-yield financial products.

In providing evidence for the varying relationship between income and insurance consumption between emerging and development countries, Enz (2000) finds evidence for the S-curve relationship between per-capita income and insurance penetration where the income elasticity of demand for insurance for emerging countries is greater than that of the developed countries. Ward and Zurbruegg (2000) also found evidence to corroborate the existence of the "S" curve with respect to the income elasticity of demand for life insurance in a comparative study on a sample of 37 Asian and OECD countries from 1987 to 1998. Beck and Webb (2003) also undertake a comprehensive study on economic, demographic and institutional determinants of life insurance consumption on 68 countries between 1961 and 2000. While inflation, banking sector development and income are found to have robust relationship with life insurance consumption, education, life expectancy, dependency ratio and social security expenditure had marginal significant effect on life insurance consumption.

According to Millo (2014), the relationship between insurance and income misses the point, as all other characteristics of the economic environment are likely to move together with income. Without going into the details of the relationship between insurance growth and economic growth, graphical analysis in several papers has suggested that national income is not the only determinant for cross-country variation in life insurance consumption (Chui & Kwok, 2007; Lee & Chiu, 2012; Outreville, 2012), and some authors have argued that other determinant factors are linked to the culture of the country (Hofstede, 1983; Park & Lemaire, 2011). The consumer's subjective apprehension and risk behaviour is related to many factors that could be regrouped under demographic or geographic (family, location), institutional (political and legal), and social and cultural variables (education, religion, cultural distance). In other words, the level of national income can explain people's ability to afford insurance while cultural traits and the socio- political environment not only affect the amount of perceived risk and uncertainty but also influence people's attitudes and ways of handling perceived risks.

The demand for life insurance is significantly affected by the level of inflation in a country. When inflation rises, or the price of a product increases, consumers are affected by money illusion wherein people think of money in nominal instead of real terms, which can lead to a rise in the purchase of life insurance (Zerriaa et al., 2016). An increased inflation rate can lead to a decline in the value of money, which prompts consumers to recoup the loss by buying life insurance policies (Mathew & Sivaraman, 2017). On the other hand, the decline in purchasing power that comes with inflation can also reduce the demand for life insurance (Emamgholipour et al., 2017) due to the consumer's perception of high real costs (Celik & Kayali, 2009; Mitra, 2017).

Elango and Jones (2011) investigated the factors impacting the demand of insurance in emerging economies from 1998 to 2008. The authors concluded that demographic factors were better indicators to explain the variations in demand for life insurance compared to economic and institutional factors. In a similar vein, Alhassan and Biekpe (2016) also found that demographic variables play very important roles in driving the consumption of life insurance in Africa.

2.3. Factors Affecting Life Insurance Demand

The first model of life insurance demand was devised by Hammond et al. (1967), which focussed on the influence of demographic and social factors such as order of age, education and dependants on the consumption of life insurance. Studies have examined the socio-economic, demographic and psychographic factors affecting the demand for life insurance. Zietz (2003), Outreville (2012) and Bhatia et al. (2021) have each presented a detailed compilation of the available empirical literature concerning demographic, economic, social, cultural, and institutional factors. In the reviewed works, the most significant demographic factors are age, education, income, marital status and occupation of the policyholders.

In general, the consumer's demand for life insurance increases as they age, get married and have dependents, and again decreases after a certain point. This implies that age and life insurance demand are related non-linearly (Chen et al.,

2001; Frees & Sun, 2010; Brighetti et al., 2014; Sauter, 2014; Luciano et al., 2016; Buric et al., 2017). Education is also found to be a significant determining factor of life insurance demand, as educated consumers have a better understanding of financial planning and risk management. Educated consumers are also more probable to demand life insurance policies as they are financially stable and can afford to buy them (Eisenhauer & Halek, 1999; Li et al., 2007; Kakar & Shukla, 2010; Frees & Sun, 2010; Mahdzan & Victorian, 2013; Yuan & Jiang, 2015; Buric et al., 2017). On the other hand, education may also have a negative impact on life insurance demand as they want a more diverse portfolio (Mitra, 2017) or are more critical about their consumption (Celik & Kayali, 2009). Consumers with higher education may also have lower risk aversion, leading to a decline in insurance demand (Outreville, 2013). This has led to the question of whether the level of education does not interfere at earlier stages but does so later as education may lengthen the period of dependency (Park & Lemaire, 2011).

The demand for life insurance may also be affected by the sex or gender of the consumer. Countries with a high femininity index have a higher demand for insurance as women are more sensitive than men when it comes to the needs of their dependents (Chui & Kwok, 2008). On the other hand, a study by Luciano et al. (2016) found that men purchase more insurance than women as they are usually the breadwinners in the family. Moreover, they found that the role of women in the family leans more towards emotional than financial support. Then, the marital status of the head of the household also plays a significant role in the demand for insurance as they have to mitigate the risks involved with premature death and protect their families with security measures (Eisenhauer & Halek, 1999; Sauter, 2014; Nagy et al.,2019).

The occupational status of the consumer has a significant effect on life insurance ownership. Studies have found that among different occupations, salaried and self-employed consumers have a relatively higher demand for life insurance policies than consumers with casual employment (Kakar & Shukla, 2010; Buric et al., 2017; Ampaw et al., 2018). Moreover, among salaried employees, those with a

career in management are more likely to own life insurance policies compared to other industries (Brighetti et al., 2014)

Studies have found mixed results on the effect of number of children on life insurance demand. Since the primary use of life insurance is for bequest motive, i.e., to leave wealth for surviving family members, consumers with children are more likely to purchase life insurance policies (Chang, 2004; Arun et al., 2012; Mahdzan & Victorian, 2013; Wang, 2019). However, culture also plays a significant role in this intention, as it was found that household with many children in Malaysia do not opt for life insurance as people believe that their children will look after them when they grow older (Tan et al., 2009). The negative relation between number of children and demand for insurance may also come as a result of children becoming more independent as they age (Eisenhauer & Halek, 1999; Chang, 2004).

The dependency ratio is also a substantial determinant of life insurance demand, as one of the main purposes of life insurance is to protect dependants against financial uncertainties in the event of the policyholder's premature death (Hammond et al.,1967). Since the ages between 15 and 64 are considered the working age population, the population below 15 and above 64 is the dependent population. A high dependency ratio increases the demand for life insurance (Beenstock et al., 1988, Li et al., 2007; Brighetti et al., 2014). However, the inverse relationship may also be true. An increase in dependents increases the cost of household expenses in education and healthcare, and this increase in current expenditure results in less disposable income for life insurance purchase (Yuan & Jiang, 2015; Alhassan & Biekpe, 2016).

A consumer's wealth significantly impacts the demand for life insurance, as a wealthier consumer is more inclined to be risk-averse and cover the risk of their death (Eisenhauer, 1997; Shi et al., 2015; Ampaw et al., 2018). However, wealthier consumers may also be relatively less inclined to purchase insurance as they are less incentivised to do so (Matteo & Emery, 2002; Chen et al., 2006; Pliska & Ye, 2007). The wealth of a consumer may also affect their selection decisions as policyholders in different income groups may prefer different policies (Inkmann & Michaelides,

2012). In a study of life insurance policyholders in India, it was found that insured households are more optimistic, financially well off, more educated and had a salaried breadwinner (Kakar & Shukla, 2010).

Since religion is an integral component of a country's culture, it impacts consumer's behaviour. Throughout history, religion has been perceived as an opposition to life insurance as it exemplifies a disbelief or distruct in God (Zelizer, 1979). In this vein, the demand for life insurance is comparatively lower for Islamic countries than non-Islamic countries. The Malays also purchase more insurance than the Chinese in Malaysia as the majority of them are Muslim. They have a strong belief that their life is in the hands of God and as such, are against the purchase of life insurance (Lim & Tan, 2029). Thus, a consumer's stance on fatalism, or belief in God, is a significant indicator of demand for life insurance.

In addition to the factors discussed above, the demand for life insurance is also affected by the specific culture of a country (Kingston et al.,1983). Countries with a more individualistic culture have a higher demand for life insurance than countries with a more collectivistic culture as collectivistic cultures have a tendency to rely on their familial network for support during financial insecurities (Chui & Kwok, 2008; Mitra, 2017). The culture of a country also affects the risk-aversion tendencies of its population, and a consumer population with high risk aversion levels increases the demand for life insurance (Chang, 2004; Chen et al., 2006; Han & Hung, 2017; Wang, 2019). The level of urbanization of a country or region also has a positive relationship with life insurance demand. The increase in life insurance penetration can be attributed to reduced operation costs such as collection of premium, cost of marketing, costs of handling claims, etc. and increased need for retirement plans (Hwang & Gao, 2003; Dragos, 2014; Zerriaa et al., 2016; Mare et al., 2019).

2.4. Behavioral Biases

In traditional economics, it is assumed that consumers trying to maximise their utility under constraints make rational decisions in their buying behaviour. It is assumed that consumers are rational, i.e., they understand and process all relevant information and make fully informed choices. These rational choices are made with the motives of minimizing financial risk. Behavioral finance made the departure from this line of thinking by presuming behavioral and information biases that would skew the concept of 'rational' decisions. It emphasized that financial choices could be affected by behavioral, psychological and emotional biases of an individual. Behavioral biases are judgemental errors that deviate a consumer's choice from rationality and objectivity (Tversky & Kahneman, 1974). These biases may be the result of psychological factors such as cognitive limitations, processing strategies, perceptual organizing principles, an egocentric perspective, specific motivations, affects, and cognitive styles.

There are two fundamental models of decision making in the behavioral finance literature; the first is a rational model and the second is a bounded rationality model. Mintzberg et al. (1976) provided a three-stage model for strategic decision-making, which comprised the identification of a problem, gathering alternative ways to solve that problem and eventually selecting the best alternative in order to have an optimal solution. It is very difficult for an individual to make what can be considered rational choices, due to limited accessibility of information, time and psychological constraints. Consequently, the term rationality was substituted with the notion of bounded rationality (Simon, 1955). The concept of bounded rationality is not synonymous to irrationality, nor are the individuals considered irrational; they are bounded rational. Normally, it is due to the absence of comprehensive information and facts, that people find shortcuts more convenient and follow the track of simple models resulting in trivial outcomes (Wilcox, 1999).

In the real world, the decision-making process of consumers is not always rational or objective, and it is almost impossible to very all possible alternatives of a decision. Consumer are influenced by their desires and opportunities, whether their

beliefs are correct or not. They may be misinformed about the opportunities they have, or unaware of them altogether. Thus, consumer make decisions under bounded rationality and are limited by information asymmetry (Elster, 1990).

Consumers often make mistakes when making decisions about life insurance purchase; they continue to renew policies even when their circumstances have changed over time, and they discontinue their policies if a risk does not occur even when the circumstances have not changed. Kunreuther and Pauly (2016) stated that an individual regrets paying premiums if the risk events do not materialise. The person regrets wasting money and may avoid future insurance purchases in order to avoid feeling disappointed. This finding ties in closely with the Regret theory (Loomes & Sugden, 1982). They believe that insurance is an investment and feel that the risk they took is not paying off (Michel-Kerjan et al., 2011). However, if a consumer does not buy insurance and the risk event occurs, then the person regrets not having an insurance policy. Consumers who are not insured regret not having a policy when they suffer a loss and decide to buy insurance, even though the loss does not change any future probabilities.

Behavioral economics suggest that insurance purchase decisions are informed and affected by factors such as personality, values, affection, culture, lifestyle and societal norms. Americans rejected life insurance because of social norms and beliefs about the sanctity and sacredness of death, and they believed that life insurance was commodifying a sacred event (Zelizer, 1979). Although emotions play a significant role in decision-making, there is limited knowledge and attention given to exploring this avenue. The personal differences in consumers lead to variations in demand and insurance purchase decisions, and these subjective features are referred to as psychographics. The most cited literature is this field is by Burnett & Palmer (1984), who found that the psychographic profile of policyholders is a significant determinant of life insurance demand. Life insurance policyholders are stable, opinionated and take more risks. They are not price conscious, assertive, fatalistic or brand loyal.

Hsee & Kunreuther (2000) posited that an individual with strong affection for an object are more willing to buy insurance for that object because of their emotional attachment. Experimental studies conducted by Rottenstreich and Hsee (2001) and Sunstein (2002) also found that people focus more on the negative parts of the outcome of an event than the likelihood of its occurrence when they have a strong emotional involvement. Emotional involvement may be caused by past events or attachments. This is indicative of the role of emotion as well as Regret theory in the attitude towards loss aversion. Buzatu (2013) posited that emotions, personal biases, social norms and financial culture have a strong influence on insurance purchase decisions.

Zimmer et al. (2009) states, people buy insurance for to achieve “a peace of mind" and to reduce concerns about the occurrence of potential loss. In the case of terrorism risk, a national field survey conducted in November 2001 reveals that Americans living within 100 miles of the World Trade Centre feel a greater personal risk from terror than if they live further away (Fischhoff et al., 2003). According to Kunreuther et al. (2013), past experience and emotions attached to the experience generates the concerns. The experience and emotion attached to the attack explain the large demand for terrorism insurance coverage immediately after September 11 even at extremely high premiums.

Veeraraghavan & Anbalagan (2011) conducted a study on the bias aspect of various types of capital market investors, i.e., information bias, overconfidence, disposition effect, mindset bias, over-enthusiasm bias, situational reaction bias, peripheral and pre-judged decision bias, and gambler's fallacy bias. They found that these eight aspects of bias are the most effective in explaining investor behaviour. Based on this study, more research needs to be done to understand more clearly how big the impact of these eight aspects of bias on decision making, and how it could translate to the insurance market as well. Bashir et al. (2013) conducted a study to determine the aspect of any bias that gives a direct influence on financial decision making. They studied overconfidence, confirmation bias, an illusion of control, loss aversion, mental accounting, status quo, and excessive optimism using linear regression method and correlation method. The results obtained from this study

found that confirmation bias, illusion of control, excessive optimism, and overconfidence have a direct impact on decision making, while other aspects of bias do not have a direct impact on decision making.

The influence of overconfidence and illusion of control on investor decision making is also examined by Qadri and Shabbir (2014) using a sample of investors in Islamabad Stock Exchange (ISE). The results of the study found that these two aspects of bias have a major effect on investors' decisions at ISE. In addition, the study also found that men tend to have greater overconfidence than women. Research conducted by Onsomu (2014) and Mallick (2015) analysed the heuristics of representativeness, availability, and anchoring and found that these three aspects of bias are the main factors that can determine individual decisions clearly show that individual decision-making is strongly influenced by representativeness, availability, and anchoring.

In studying consumer behaviour and selection decisions among employees with a life insurance policy, it was found that loss aversion, money illusion and anchoring had significant effects on consumer decisions. These biases lead to deviations from rational choices for the consumers, and even among employees who had a good awareness of life insurance, deciding on the adequate and optimal amount of life insurance was still difficult (Coe et al., 2016). The perception of life insurance itself is critical to making purchase decisions for consumers under bounded rationality, and the level of transparency and protection as perceived by the consumer had a positive impact on demand (Huber & Schlager, 2018).

Some evidence from neuroscience suggests that sound and rational decision making also depends on prior accurate emotional processing. A widely cited study by Bechara et al. (1997) illustrates such collaboration between affective and cognitive systems: persons who are lowest in emotional activity (or even those who have a disconnection between affective and cognitive processing) are also less effective (or even unsuccessful) at learning to avoid disadvantageous choices. Loewenstein et al. (2001) argue that decision making is influenced by “hot/cold” states. Decisions are driven by affect in the hot state and by cognition in the cold state. In this vein,

Loewenstein and O'Donoghue (2004) and Benhabib and Bisin (2005) developed theoretical models in which a person's behaviour is the outcome of an interaction between two systems: a deliberative system that assesses options with a broad, goal-based perspective, and an affective system that encompasses emotions and motivational drives. Empirical instruments have also been developed to investigate how these affective features impact choices (Camerer et al., 2004).

Herding behaviour is considered to be one of the most common behavioral biases that influences financial markets and investors. It is defined as the propensity of investors to mimic the reaction of others. There are various studies which examined the possible cause of herding among money managers while taking investment decisions (Chopra et al., 1992; Scharfstein & Stein, 2000). Few researchers have also provided a base to estimate the herd behaviour in financial markets (Christie & Huang, 1995; Hwang & Salmon, 2002). Previous literature supports the existence of herd bias in developing and developed nations. Chang et al. (1999) found significant evidence of herding in South Korea and Taiwan. Caparrelli et al. (2004) examined consumer behaviour and investment and found three variables which influenced investment performance- choice of stock, over confidence and anchoring. Al-Shboul (2012) used daily and monthly data and detected herding in the Australian stock market. Pece (2014) assessed the industry herding behaviour in Romanian stock markets and presents evidence for the same. In China, herding behaviour was assessed in Shanghai and Shenzen stock exchanges and conclusive evidence supports the presence of herd behaviour (Demirer & Kutan, 2006). Chen (2006) found evidence of herding in the Italian stock exchange in extreme market conditions, and before and during the 1999 crisis.

In India, Sehgal and Tripathi (2009) found the presence of herding behaviour among mutual fund investors and foreign institutional investors. Lakshman et al. (2011) corroborates the results and present conclusive evidence to ascertain that herding behaviour does exist among mutual fund investors. Saxena and Ahuja (2018) also found that herding behaviour has a significant effect on investor decisions in India. Although herd behaviour has been studied in the stock market and is found to

be present in financial markets, the insurance market is still lacking such research. This is especially important for collectivistic societies such as those in North-East India where decisions are highly impacted by word-of-mouth praise and close-knit relations. It was also observed that herd mentality is often present in the financial behaviour of individuals in nations with a culture of collectivistic tendencies (Zhan, 2013; Eun et al., 2015).

Facilitating payments is crucial to the business of insurance as it is in other business models. Prahalad and Ramaswamy (2004) describe the success of selling shampoo in India in single serve sachets rather than just in large bottles. Purchasing sachets allowed customers to break purchases into amounts consistent with their week-to-week cash flows, although at higher unit costs. The argument is that liquidity constraints make buying in small pieces more attractive. Even in the case of insurance, they found that 62 percent of customers purchase the policy at the given price when they have the option to pay in small weekly instalments. Bauchet and Morduch (2019) exploit a large-scale natural experiment of 207,000 females to show that demand increases by 38 to 88 percent when customers are allowed to pay in weekly instalments instead of in a lump sum, even though doing so is more costly for customers. But the demand falls markedly when, holding all else constant, customers are required to pay the premium as a one-time lump-sum payments. Demand then rises back to previous levels when customers regain the option to pay in instalments. Then, the demand response is consistent with three behavioral explanations: framing effects, present bias, and difficulties constituting lump sums. First, consistent with recent experimental evidence (Hershfield et al., 2018), customers may reframe the cost of the insurance; the upfront cost of 57 pesos may seem much larger than the cost of four pesos per weekly instalment, leading to the demand response. Second, if customers are saving-constrained, having lump sums may be especially valuable to them (Rutherford, 2000; Afzal et al., 2017). Third, present-biased customers may be reluctant to purchase the insurance upfront yet still see the value of insurance; pre-committing to the payment in instalments can be a way to reconcile their present impatience with their longer-term desire to purchase insurance, along the lines of Laibson (1997).

Tversky & Kahneman (1981) stated that rational choices should not change by changing the framing of the problem. However, the above study itself shows that a different framing of a problem may impair rational judgement. The information of a particular problem is the same. However, the structure and presentation of elements of the problem can influence people's perspective and their decisions. Different people interpret the problem differently and made different choices based on their perspectives. Tversky & Kahneman (1981) conducted an extensive investigation into the effects of framing on decision making. Respondents were given a problem that the United States would be hit by a disease that can kill 600 people. Two kinds of surveys were produced that had the same pair of statements A and B delivered differently (framing). In the survey, the information was delivered in favourable conditions in which program A surely saved 200 people. Therefore, people tend not to take risks or become risk averse so that more people choose program A (72% of respondents) than program B (28% of respondents) where B program there are risks. In the second survey, information was delivered in an unfavourable condition where program A caused 400 deaths. Therefore, people tend to take risks or become risk-taking so that people prefer B program (78% of respondents) compared to program A (22%) where B program there is a chance to save 600 people.

Consumer behaviour and decisions can differ in different context, and such behaviours need to be studied in the context of life insurance as it differs from other decisions involving risk. It has been found that risks are perceived differently in different domains, and as such, risk management also differs with change in context (Slovic et al., 1984). Subjects under study tend to be more risk averse than in real life situations with insurance decisions due to the change in context (Schoemaker & Kunreuther, 1979; Kusev et al., 2009). This change in context can even be among different insurance policies (Barseghyan et al., 2011).

2.5. Policy Lapsation and Mis-selling

The purchase of insurance policies is a cause of concern because the purchase of insurance involves complicated decisions regarding risk assessment and optimal solutions. The rise in investment-oriented products had complicated these decisions

even further for consumers as risk assessment is even more difficult as there are concerns with speculation and uncertainties (Droms & Baldwin, 1989; Ericson & Doyle, 2006; Schwarcz, 2010). Consumers need a certain level for financial aptitude and information to comprehend and assess the different options available to them. Such properties of insurance products make the consumer wary of purchase and may result in wrong choices, which can further result in financial losses and burdens for the consumers (Agarwal et al., 2009) as even simpler concepts involving investment and saving are difficult to the average consumer (Lusardi, 2008; Hung et al., 2009).

Although consumers usually make decisions independently in individualistic societies, consumers in collectivistic societies have a tendency towards conformity. Social norms dictate social acceptance, and consumers dismiss their own interests to conform to these norms. As such, the opinions of family, friends, acquaintances, community leaders, etc. are part and parcel of the decision-making process. In these societies, agents are the primary source of information and consumers rely on the advice and recommendations of agents to find the best policy (Crosby & Stephens, 1987). This relationship is based on a foundation of trust and consumers are highly dependent on insurance agents because they also take on the role of financial planners for their customers (Crosby & Cowles, 1986).

The low level of financial awareness and literacy leaves the consumers in a collectivistic society highly susceptible to unethical sales practices of agents who may be motivated by commissions (Ericson & Doyle, 2006). The motivations f insurance agents may not align with the best interests of the consumers as there is no efficient accountability mechanism (Kurland, 1996). Moreover, agents may be driven to unethical sales practices when they are pressured to meet sales targets (Haron et al., 2011). It has been found that agents will offer misleading and poor advice to sell policies to consumers with less financial knowledge, which is termed mis-selling, and is the leading cause of policy lapsation (Ericson & Doyle, 2006; Halan et al., 2014; Anagol et al., 2017).

In the studies examining policy lapsation, it has been found that large income shocks lead to voluntary or active lapsation (Fier & Liebenberg, 2013). In a study

based on two major life insurers in USA, it was found that these cases of lapsation occur because consumers do not correctly anticipate their future liquidity requirements (Gottlieb & Smetters, 2021). It has also been proposed by the 'Interest Rate Hypothesis' that consumers actively let their policies lapse when market returns are higher than returns on insurance (Schott, 1971; Kuo et al., 2003). Both these theories are explained in such a way that early policy lapsation may be due to changes in income rather than fluctuations in the interest rate (Outreville, 1990). Active lapsation also occurs when consumers find a better policy to suit their needs, as proposed by the 'Policy Replacement Hypothesis' (Carson & Forster, 2000; Russell et al., 2013)

The selection of policy, i.e., the type of life insurance policy a consumer chooses, can also be related to the policy lapsation, and the effect of policy selection is stronger on lapsation than income shocks (Fang & Kung, 2012). Policy lapsation can also be connected to the economic status of policyholders, as individuals with better economic standing are less likely to have lapsed policies (Mulholland & Finke, 2014). Consumers with low risk aversion or higher risk-taking tendencies are also more likely to have lapsed policies (Mahdavi & Abed, 2015). In India, it was found that policy details such as policy type, duration, amount of sum assured, etc., as well as demographics such as age, marital status and occupation, are related to lapsation of policies. The life insurance policies with high premiums and longer durations, especially term policies, are more probable to lapse. Policyholders who are young and less educated were also more likely to have lapsed policies (Mall & Sahoo, 2015).

The life insurance companies in India are not always transparent and may present their policies falsely in their marketing campaigns to attract customers (Vijay & Tamilselvan, 2011). Insurance agents motivated by commissions make recommendations that are not in the best interest of the customer and promote endowment policies even when they are not suitable (Halan et al.., 2014). This kind of mis-selling by the agents us the primary case of insurance policy lapsation in India (Subashini & Velmurugan, 2012; Halan et al., 2014; Nithiyalakshmi et al., 2016), to

the extent that the loss to Indian consumers due to mis-selling is estimated to be around Rs.1.5 trillion (Halan et al., 2014). Even with the seriousness of the issue, there are limited studies that examine the underlying causes of lapsation on the part of the consumers.

The commission structure of agents may also be a cause of mis-selling, as the existing structure incentivises agents to acquire new customers but does not incentivise them to actively pursue existing customers to pay the premiums on their current policies (Padmavathi, 2014). This practise can lead to high lapsation rates if the policyholders do not inherently need or want the policies. Ankitha and Basri (2019) studied the effects of relational selling, a sales technique that focuses on the interaction between buyer and seller to increase customer loyalty, on life insurance decisions. They conducted a cross-sectional survey of 813 policyholders of life insurance companies operating in Karnataka, South India and found that customers' life insurance buying decision is directly influenced by interaction intensity, co-operative intentions of agents, sharing of overt and covert policy information, and indirectly through the partial mediation of trust. Also, trust fully mediates the effect of agent disclosure and personal rapport on decision making by investors. They also implied that financial mis-selling in India can be curtailed significantly if the insurance companies insist on responsible and relational selling by their sales agents.

2.6. Asymmetric Information in the Life Insurance Market

Asymmetric information theory in the insurance market relates to the relationship between insurance coverage and risk. With any combination of adverse selection and moral hazard, a positive correlation between risk and coverage is implied. In one of the most popular studies of asymmetric information by Cawley and Philipson (1999), direct evidence on the mortality risk of individuals, as well as the price and quantity of their life insurance, showed that unit prices fall with quantities, indicative of the presence of bulk discounts. More surprisingly, quantities purchased appeared to be negatively correlated with risk, even when controlling for

wealth. They argued that this was an indication that the market for life insurance may not be affected by adverse selection. This conclusion is however challenged in a paper by He (2009), who noted a serious sample selection problem in the Cawley-Philipson approach that could question the reliability of the findings.

Adverse selection is also found in the insurance market in the positive relationship between life insurance premium rate and amount of life insurance purchased (Beliveau, 1984). It was observed that consumers who let their life insurance policies lapse are less likely to use a nursing home in the US, and this discontinuation of their coverage is indicative of the policyholder's health condition. This is indicative of asymmetric information in the form of adverse selection (Finkelstein et al., 2004). Moreover, when a regulation prevented life insurance providers from accessing consumers' genetic test results, it created adverse selection in the life insurance market (Polborn et al., 2006).

There exists a positive relationship between life insurance density and suicide rates between 1980 and 2002 in OECD countries. As death benefits are paid even in cases of suicide, this positive relation suggests the presence of adverse selection and moral hazard (Chen et al., 2008). The positive relationship between a policyholder's reduced life expectancy and likelihood of life insurance purchase in the US also suggests the presence of asymmetric information (Gatzert et al., 2009). He (2009) studied mortality and life insurance purchase decisions and found that policyholders who died within 12 years of the base year were 19% more likely to have purchased a policy in that base year. It was observed that the individuals who died earlier were more likely to have bought an insurance policy.

2.7. Role of Agents in Life Insurance Distribution

Although the life insurance sector has seen steady growth after the economic reforms in both insurance penetration and insurance density, it still has a long road ahead to catch up with the developed nations. Among continuous efforts to increase life insurance consumption, the individual agents are the main distribution channel of

the life insurance market in India and are considered the backbone of the industry. Insurance agents are the most influential factor for selecting life insurance policy (Kumar, 2012) and policyholders are so reliant on agents that in a 2015 study, it was found that 87% of respondents came to know about life insurance policies through agents (Balaji, 2015). Anagol et al. (2017) also found that sales agents are the primary contact persons and consumers rely on them to find a suitable life insurance policy. The foundation of this relationship is trust, as trust in insurance companies has a positive relation with insurance ownership (Guiso, 2012).

An insurance exchange requires trust on both sides as customers trust the agent enough to purchase a policy and the agent also trusts the customer to underwrite a policy and form a sustained relationship (Gennaioli et al., 2021). Given the huge turnover in agent employment in the life insurance industry, it is also important to explore the factors that may affect agent retention. An agent's persistency or loyalty to a company and their success as an agent may depend on benefits or incentives offered by the insurance company (Mitra & Ghosh, 2012; Roy & Roy, 2020). Agents also need constant feedback form sales managers about business generation, product information and day to day issues (Roy & Roy, 2020). Because of this, mentorship by managers can have a positive impact on an agent's loyalty and success (Mannar, 2015; Ghosh et al., 2019, Siddiqui et al., 2023). It is also easier for an agent to sell an insurance policy if their company has a good reputation with the public. It has been found that a company's image and reputation have a positive relation with agent retention and loyalty (Mutlu & Tas, 2012; Tanwar & Prasad, 2016; Siddiqui at al., 2023). The insurance industry and by extension, the insurance agents, have ethical obligations to mind when selling an insurance policy.

Jindal (2014) found instances of misrepresentations of terms and services at the time of sale, unethical remarks about competitors and lack of expertise to perform one's duties. Many studies have also found mis-selling (Subashini & Velmurugan, 2012; Halan et al., 2014; Nithiyalakshmi et al., 2016), poor services (Mishra, 2012; Surana & Gaur, 2013) and financial burden of customers (Surana & Gaur, 2013) to be the primary reason for lapsation of insurance policies in India. The

mis-selling of policies may be attributed to the focus on commission rather than the requirements of the customer (NIA, 2021). Evidently, an insurance agent's failure to maintain a code of ethics may result in consequences such as policy lapse, breach of trust with the customer and a negative public image of the agent and the company (Surana & Gaur, 2013).

LIC holds a majority share of the life insurance market in India, and the private sector has seen a slow but steady growth in the past two decades. This had led to growing competition between the public and private sector (IRDAI Annual Report, 2023). In a study comparing the grievance redressal systems of between the two sectors, Ibrahim and Rehman (2012) found that LIC was more successful in resolving consumer's grievances when compared to the private insurers. Deka (2015) studied the awareness and satisfaction of policyholders across the two sectors and found that 68.2% of respondents of LIC were aware of all the details of their policy. Comparatively, only 44.3% of policyholders from private insurers were aware of all their policy details. Further, while 57% of policyholders were fully satisfied with LIC's services, only 34% of policyholders were fully satisfied with the private insurer's services.

2.8. Conclusion

In summary, although these studies provide a good start to understanding the life insurance market, there is little information about the nuanced dimensions of the market in India. As seen above, the determinants of insurance demand may vary across geographical and cultural landscapes. Moreover, psychographic antecedents have been found to have more statistically significant impact than demographic factors (Anderson & Nevin, 1975; Burnett & Palmer, 1984). Furthermore, behavioral factors such as emotions (Buzatu, 2013), affection (Hsee & Kunreuther, 2000), regret (Loomes & Sugden, 1982), past experience (Kunreuther et al., 2013), perception of product (Coe et al., 2016), risk behaviour (Han & Hung, 2017; Wang, 2019), etc. have been found to have a significant influence on insurance decisions in other

countries. The role of behavioral biases and heuristics have also been explored to a large extent by scholars such as Veeraraghavan and Anbalagan (2011), Bashir et al. (2013), Qadir and Shabbi (2014), Onsomu (2014) and Mallick (2015). However, such psychographic factors have not been studied as an important antecedent in the context of India. The available national data from Insurance Regulatory and Development Authority (IRDAI) and other national studies lay focus on demographic and geographic factors, and fail to capture and include the possible impact of psychography and biases in the life insurance market.

Even in the Indian context, a study by Halan et al. (2014) found that endowment policies were much more commonly purchased than other policies, but the reasons for this trend of consumer choices in policy selection is unexplored. Mis-selling was identified as the primary cause of policy lapsation by Shubashini and Velmurugan (2012) and Nithiyalakshmi et al. (2016), but the subject lacks studies that actually try to understand the underlying causes and motives of insurance consumers that enable such mis-selling. This is especially significant in a country like India with low financial literacy and collectivistic culture where sales agents are the primary contact persons and consumers rely on them to find suitable life insurance products (Anagol et al., 2017). Although the presence and extent of asymmetric information was studied in other countries (Cawley & Phillipson, 1999; He, 2009) such studies with a comprehensive cover of Indian states are relatively hard to find. In addition to the limited studies in the Indian context, there is little information about the insurance market in North-Eastern states, where the culture is more collectivistic, the financial system is considerably weak and financial inclusion in still low (Bhanot et al., 2012). This study addresses these gaps in literature and attempts to contribute to the existing knowledge by presenting a holistic picture of the different dimensions of the life insurance market in North-East India.

CHAPTER 3

GROWTH PERFORMANCE OF

LIFE INSURANCE AND ECONOMY IN INDIA

3.1. Introduction

The insurance sector is an important component in the trade and development matrix of any country. At its first session in 1964, the United Nations Conference on Trade and Development (UNCTAD) formally acknowledged that "a sound national insurance and reinsurance market is an essential characteristic of economic growth". A strong life insurance industry promotes a developed savings sector which contributes to a more resilient economy, one that would be less vulnerable to interest rate and demand shocks, while creating a more stable business environment, including macroeconomic stability (Catalan et al., 2000).

The insurance sector in India has come full circle from being an open competitive market to nationalized market, and back to a liberalized market. The Indian Life Assurance Companies Act 1912, was the first statutory measure to regulate life business. In 1928, the Indian Insurance Company Act was passed which enabled the government to collect statistical information about both life and non-life business transactions in India. By 1938, there were a large number of insurance companies and increasing allegations of unfair trade practices and so, the earlier legislation was consolidated and amended by the Insurance Act of 1938 to protect the interests of the insured public. The government decided to nationalize 245 Indian and Foreign Insurance Companies and Life Insurance Corporation (LIC) was formed by an Act of Parliament i.e., The Life Insurance Corporation Act, 1956. The LIC operated under monopoly till the late 1990s. With the passing of IRDA Act in 1999, reforms in the insurance sector were initiated in India. IRDA opened up the market in August 2000, wherein foreign companies were allowed ownership up to 26%.

The new Indian strategy of liberalization, privatization and globalisation marked a major change in all industries, and its impact can be observed not only in

the growth of the sector, but in the aspect of innovation as well. The significant role of the private sector can be witnessed from their growing market share statistics, with 35.86% per cent of the market share in 2020-2021 (IRDAI, 2020). India recorded a robust growth in the life insurance market in the post-reform period both at the level of life insurance penetration and density (two globally accepted measures of insurance development), which shows that the post-reform life insurance development is much higher than that of the pre-insurance reform era in India. During the pre-reform period, the level of penetration was 1.39 per cent in 1999, which has since improved to 4.4 per cent in 2010, and is 3.2 per cent in 2020-2021. The growth of insurance can be seen in terms of growth of life-funds, assets, number of policyholders and premium income.

Although life insurance started as an urban phenomenon, an important aspect of the growth of insurance is their rise in acceptability and popularity. The Indian life insurance market witnessed the most important development in the rural market, which is a huge market for insurers, as nearly more than 70 per cent of the population live in rural areas. Penetration in rural areas was made by both LIC (70%) and the private sector (30%) through the introduction of new customised products especially designed for the rural market and the introduction of micro-insurance products (Sinha, 2007). LIC specifically targeted the rural insurance market and followed a segmented approach to promote rural insurance. It targeted the rural wealthy with regular individual policies, promoted group policies to people who could not afford individual policies and offered government-subsidized policies to the very poor (Ghosh, 2013).

The insurance sector is intrinsically linked to economic variables and studies have consistently shown that major macroeconomic factors impact the demand for life insurance, and the life insurance sector in turn impacts these factors. There is a positive relation between insurance development and economic development (Li et al., 2007; Outreville, 2013; Mitra, 2017; Emamgholipour et al., 2017) and insurance activity promotes economic development (Arena, 2008). A study by Han et al. (2010) also found that insurance development (both life and general) plays a much more important role in economic development in a developing economy than in a

developed economy. High growth of GDP induces an economic effect through higher per capita, disposable income and savings, which in turn creates a favourable market life insurance. Life insurance also provides support to the capital market, and savings data pertaining to Indian life insurance and macroeconomic variables broadly indicate a close relationship and interdependence between macroeconomic variables and life insurance demand (Sadhak, 2006). In almost all studies considering insurance demand at the country level, GDP shows up as by far the most important driver of growth (Outreville, 2012).

Aside from GDP, other major macro-economic variables have also been found to have an impact on national life insurance demand. The most prominent of these are per capita GDP (Li et al., 2007; Kjosevski, 2012; Elango & Jones, 2011), national income and per capita income (Beenstock et al., 1986; Truett & Truett, 1990; Enz, 2000; Ward & Zurbruegg, 2002) and savings (Sen & Madheswaran, 2013; Mitra, 2017; Song et al., 2019).

This chapter focusses on the expansion of the life insurance sector, changes within the sector, the relation between life insurance sector and GDP, and the macroeconomic factors influencing life insurance demand. Secondary data is used for this analysis, and the major sources of data are Economic Survey, RBI Reports including Handbook of Statistics on Indian Economy and Handbook of Statistics on Indian States, IRDAI Annual reports, IRDAI Handbook of Indian Insurance and LIC Annual Reports.

3.2. Changes in Life Insurance Policy Dimensions in India

The insurance sector has evolved rapidly since privatization in the early 2000s and the biggest beneficiaries have been the Indian consumers. Over the last 20 years, the industry has witnessed several dramatic shifts including the emergence of bancassurance, de-tariffing regulatory activism, the explosion of health insurance, as well as the emergence of large government insurance schemes. The growth of the sector has prompted innovation in different aspects, with an increase in the number and variety of products, as well as service standards. The entry of private companies

has also willed LIC, the only public life insurance company, to compete with private players in product range, distribution channels, customer services and promotional activities to retain its market share. Insurers were challenged to bring in new strategies that deliver on the promise of experience and operational excellence, forcing a relook at existing processes, tools and resources. Often the answer seems to lie in emerging technologies and data.

The sheer geography of the country imposes a challenge, opportunity and incentive for empowering innovation. Within the last decade, India has moved from a nation of approximately 5,000,000 cellular phone users to one where more than 800 million people now carry a cell phone, most of which are Internet capable. The digital revolution and increasing Internet penetration in India have disrupted the business environment in all industries and the insurance industry is no exception. Being able to use this mobile platform to reach potential customers and to administer claims has enabled insurance companies to increase market size, and quickly and efficiently serve a vast range of consumers (IRDAI, 2022).

Insurers have introduced innovative channels for collection of premiums so that policyholders can pay their premium anytime and from anywhere. With increased competition from the private sector, LIC has made several steps towards innovation and adaption. It recently launched a ‘Customers Portal Payment Gateway’ in which the premium can be paid online with debit and credit cards, as well as net banking facilities. LIC has also launched a mobile application through which customer can pay premium online. In addition, premiums can be paid through Electronic Clearance System (ECS), Corporation Bank, Citi Bank, HDFC Bank, ICICI Bank, Federal Bank, Axis Bank, at any Branch or Extension Counter or ATM of Corporation Bank & Axis Bank (Mahesh, 2019).

Improved digital technology has slowly broken traditional barriers of the insurance sector like product awareness level, limited customer touchpoints, access to knowledge, service availability and payments, making the business environment more dynamic and competitive. Insurers are now compelled to ensure that their pricing is competitive and are able to show value for money in order to remain

significant. Digital channels have changed the playing field by maintaining transparency in product features, cost and services.

Moreover, new age insurance firms such as Digit Insurance, a two-year-old insurer that focuses on creating smaller value products, are changing the business model of insurers by using block chain-based systems at the backend to speed up claims processing. This has already brought down time taken to service mobile phone damage claims from about 25 days to a few hours. Many of these features, like automatically initiating and processing trip delay claims within a few hours, would not have been possible till a few years ago because the technology was simply not available.

'InsurTech', a combination of insurance and technology, is a prime example of innovation brought by digitization. This is seen as the future of insurance in many developed countries as it opens up possibilities of new methods of service provision as well as greater opportunities for data collection and fraud detection. This can lead to better risk identification and mitigation measures. According to a study published by the OECD in 2016, 59% of InsurTech deals went to US-based start-ups, followed by Germany (6%), UK (5%), China (5%) and India (3%). Life and annuity start-ups have attracted the largest investments, with health insurance start-ups close behind (CB Insights, 2017).

Insurance intermediation or distribution channels of insurance providers have slowly evolved. Before LPG, the distribution of life insurance products was entirely via agencies. The introduction of bancassurance brought new technology, international experience, new channels of distribution and new products. LIC adapted to this change with new channels of bancassurance, direct marketing and restructuring along with traditional agents and development officers. LIC initially distributed its products mainly through agents, but it has introduced number of alternative channels to increase its penetration through the use of bancassurance. Presently LIC has tie-ups with 12 PSU Banks, 3 private banks, 10 regional rural banks, 34 co-operative banks and 1 foreign bank (LIC Annual Report, 2023). Beyond the agent/broker or bancassurance model used by most developed insurance markets,

many InsurTech start-ups are taking on this model and proposing new distribution models for insurance. These new modes of distribution are in particular interesting for less developed insurance markets, where insurance penetration is low, and the conventional intermediation model of agent/brokers may not be efficient or effective (OECD, 2017).

One of the biggest observed changes in the insurance market is in the form of product innovation. Before market liberalization, LIC sold mostly savings plans with premiums being tax-deductible in the hands of consumers. Protection and life coverage business was a relatively small proportion of its total business (LIC Annual Report, 2003). The entry of the private sector brought a wider range of products along with more need-based selling techniques. The increase in the number of players within the sector led to the expansion of the product portfolio offered, and greater focus began to be laid on not only meeting the customer's need but surpassing expectations in terms of product range and benefits offered in terms of return. They offered a choice of riders, covering benefits such as accidental death, critical illness, waiver of premium, total and permanent disability and guaranteed insurability (Mahesh, 2019).

Following this form of product innovation, LIC also introduced the unit-linked products to compete with private players. The product innovation in this industry is still increasing, so much so that even during the pandemic, IRDAI pushed for virtual onboarding and announced paperless signature policies which gave a massive push towards the digitisation of insurance. The customer can now complete processes such as E-KYC, policy comparison and premium calculation from home. New tailor-made insurance products have been introduced to cater to the need of Indian consumers, and there is no doubt that this form of innovation will continue in the future

The evolution of the insurance industry has impacted not only supplies but the customers as well. Consumers of insurance have been impacted in mainly two ways. Firstly, due to a change socio-economic scenario in awareness level and disintegration of joint families, customers demand increased flexibility of products

and services. Customers have evolved significantly and look for the most transparent and seamless experience. In a recent survey on how India is adopting emerging technologies by the Confederation of Indian Industry (2019), 61% of customers confirmed that they preferred to check their insurance applications and status online. Secondly, the consumers' perception of life insurance products has changed significantly. Life insurance products were initially perceived as tax saving instruments, but now with improved literacy and awareness level, the greatest demand is currently to build wealth, provide risk coverage, and provide health and old age security. This demand has, in turn, led to innovation of products and plans such as term, endowment, education, pension health and money back by both the public and private sector (Confederation of Indian Industry, 2019).

3.3. Growth of Life Insurance in India: An Overview

The life insurance sector has grown considerably in the last few decades, which is examined briefly in this section using the growth of total premium in India, as well as the changes in insurance penetration and insurance density.

3.3.1. Growth of life insurance in public and private sector

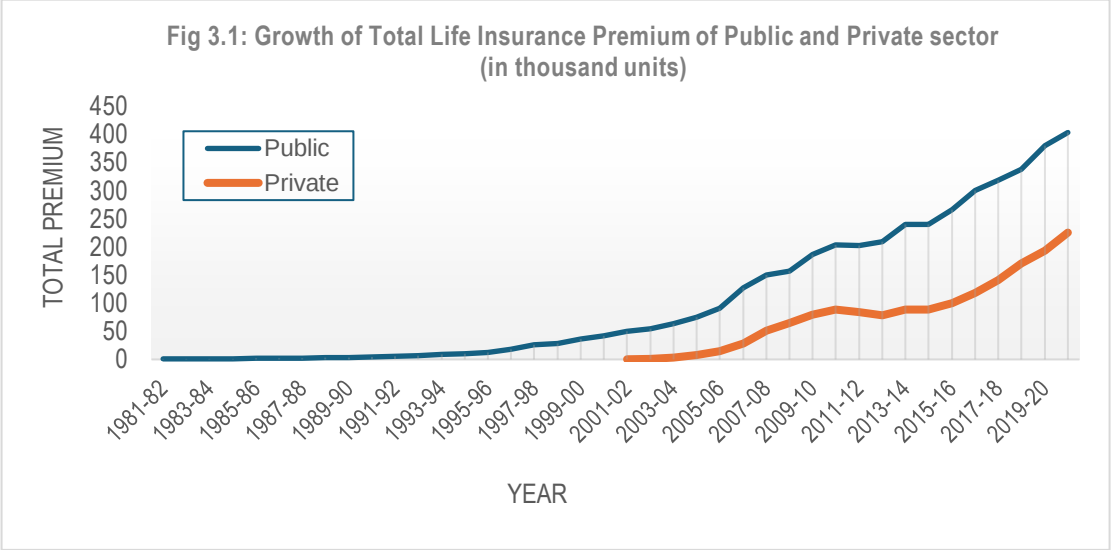
The growth of the public and private sectors in terms of total premium and market share over a period of 40 years (1981-2020) is shown in Table 3.1. Since the private sector only entered the market after the economic reform of 2001 as explained in section 3.1, there is no data for total premium or market share for the years 1981-2000 which has been marked as 'NA'. As such, the public sector retained 100% of the market share until 2000.

Table 3.1: Growth of insurance sector as shown by Compound Annual Growth (%)

Year	Total Premium			Market share	
	Public sector	Private sector	Total	Public sector	Private sector
1981-1990	19	NA	19	NA	NA
1991-2000	25.76	NA	25.76	NA	NA
2001-2010	4.24	98.19	26.38	-4.82	56.89
2011-2020	8.23	12.91	9.66	-1.31	2.96
Total CAGR (%)	**18.34**	**29.17**	**19.86**	**-1.92**	**14.17**

Source: LIC Annual Report, 1981-2000

IRDAI Annual Report, 2001-2020



The life insurance sector has witnessed a high rate of growth in the last four decades, with the total premium rising from Rs.1007 crore in 1981 to Rs.403286.55 crore in 2020, as given in Fig.3.1. Table 3.1 shows that the compound growth rate within this period is 19.86%, with a growth rate of 19% from 1981-1990 and 9.66% from 2011-2020. Although the sector showed a growth from Rs.1007 crore in 1981 to Rs.4777 crore in 1990 (IRDAI Annual Report, 2003), the total premium growth during this period is comparitively much lower than the next decades, as indicated by Fig.3.1.

The growth rate was highest during the period of 2001-2010 (26.38%), which may be attributed to the establishment of Insurance Regulatory and Development Authority of India (IRDAI) in 1999, and the new economic policy of liberalisation, privitization and globalization which opened the market to the private sector in 2000 (Ray et al., 2020). As seen above, the private sector growth is at a remarkable 98.19%, increasing from Rs.272.55 crore in 2001 to Rs.88165.24 crore in 2010. As the private sector did not participate in the previous decade, the base effect should be noted for the high growth rate during this period. Although the public sector recored a positive growth rate of 4.24%, it is evident that the participation of private players

had an impact on the growth of the public sector. The following decade of 2011-2020 recorded moderate growth of both sectors, with the base effect no longer in play.

The growth of the private sector during the last two decades is very high at 29.17%, implying a high contribution of the sector to the total market. This is also substantiated by the 14.17% growth in market share. The public sector had 100% of the market share before economic reforms in 2001, and have slowly receded this share from 99.46% in 2001 to 64.14% in 2020. On the other hand, the private sector only occupied 0.54% of the market in 2001, which has steadily risen to 35.86% in 2020. Thus, table 3.1 shows the growth of the market as a whole, as well as the increasing significance of the private sector in this growth.

3.3.2. Growth of insurance penetration and density

Insurance penetration and density are two international metrics used to assess the level of development of the insurance sector in a country. The insurance penetration is measured as the percentage of insurance premium to GDP, and insurance density is calculated as the ratio of premium to population (per capita premium) (IRDAI Annual report, 2001). This section examines the growth of life and non-life insurance of insurance penetration and insurance density over the period of 1981-2020 using data from the IRDAI Annual Reports and IRDAI Handbook of Indian Insurance. However, data for insurance penetration of life and non-life insurance during the period 1981-2000 was not available separately. The data for insurance density was also unavailable for the period of 1981-2000. These have been marked as 'NA' in Table 3.2.

Table 3.2: Growth of Insurance Penetration and Insurance Density (CAGR %)

	Insurance Penetration			Insurance Density		
Year	Life	Non-life	Total	Life	Non-Life	Total
1981-1990	NA	NA	2.73	NA	NA	NA
1991-2000	NA	NA	5.48	NA	NA	NA
2001-2010	9.16	0.34	10.59	22.81	13.7	24.44
2011-2020	-3.89	3.45	-2.46	1.71	9.39	3.26

Total (CAGR %)	**1.13**	**2.55**	**6.6**	**10.34**	**11.74**	**12.11**

Source: IRDAI Annual Report, 2001-2020
IRDAI Handbook of Indian Insurance 2001-2020

Insurance penetration grew from 0.6% in 1981 to 4.20% in 2020 with a growth rate of 6.6%. During the first decade of insurance sector liberalization, the sector reported increase in insurance penetration from 2.71% in 2001-02 to 5.20% in 2009-10. This decade showed the highest growth rate at 10.59%. After this, the level of insurance penetration declined till 2014-15 and started increasing again from 2015-16 and reached 4.20% in 2020. As such, the decade showed a negative growth rate of 2.46%. During this period, the non-life sector showed a positive growth rate of 3.45%, while the life sector showed a negative growth rate of -3.89%. However, during the last two decades, life insurance penetration grew by 1.13% from 2.15% in 2001 to 3.2% in 2020. The non-life insurance penetration also grew by 2.55% from 0.56% in 2001 to 1% in 2020. Thus, as of 2020, the life insurance penetration (3.2%) was higher than the non-life insurance penetration (1%) with a total insurance penetration of 4.2%.

The data for insurance density was only available from 2001 onwards and is expressed in dollars (USD), the unit for international comparison. Insurance density increased from USD 7.6 in 2001 to USD 78 in 2020 with a growth rate of 12.11%. The period of 2001-2010 showed a high growth rate for both life (22.81%) and non-life (13.70%) with a total growth rate of 24.44%. During this decade, the total insurance density increased from USD 7.6 in 2001 to USD 64.40 in 2010. In the period of 2011-2020, the insurance density had some ups and downs, but increased consistantly from 2016-17. Life insurance density increased by 1.71% from USD 49 in 2011 to USD 59 in 2020, and non-life insurance density increased by 9.39% from USD 10 to USD 19 in 2020.

3.4. Change in Demography of India: An Overview

Several studies have found that along with economic parameters, demographic and socio-economic variables played very important roles in driving

life insurance demand (Elango & Jones, 2011; Alhassan & Biekpe, 2015). The most prominent demographic factors include education, age and dependency ratio, marital status, occupation, etc. (Zietz, 2003; Outreville, 2011; Bhatia et al., 2021) as explained in detail in Chapter 2. The dependency ratio of a country is the ratio of dependents, people younger than 15 or older than 64, to the working-age population aged 15-64. This is considered as an important determinant of life insurance as one of the main purposes of life insurance is to protect dependants against financial problems in the case of a wage-earner's premature death (Hammond et al., 1967). The changes in major demographic factors in India over the last forty years (1981-2020) are examined in this section. Since the 2011 Census of India was used as the source of data for population and literacy rate, there is no new data for the time period 2011-2020, which has been marked as 'NA'.

Table 3.3: Change in Major Demographic Factors (CAGR %)

Year	Population	Literacy Rate	Life Expectancy	Dependency ratio
1981-1990	23.87	19.83	0.89	-0.59
1991-2000	21.54	24.19	0.66	-1.06
2001-2010	17.7	12.57	0.65	-1.51
2011-2020	NA	NA	0.55	-1.41
Total	**21.06**	**19.3**	**0.69**	**-1.21**

Source: 2011 Census of India
World Bank Databank

As shown in Table 3.3, the population of India has grown by 21.06% during the time period from 683329 thousand in 1981 to 1210855 thousand in 2011. The literacy rate has increased from 43.57% in 1981 to 72.99% in 2011, increasing by 19.3%. Although the growth in life expectancy appears low at 0.69%, it showed a growth from 54 in 1981 to 67 in 2020, which is a significant improvement of 13 years. The dependency ratio shows an increasing negative growth of 1.21%, from 77 dependents per 100 individuals in 1981 to 48 dependents per 100 individuals as of 2020. The negative growth rate in the dependency ratio is indicative of an increase in the ratio of working population to the dependent population.

The change in major demographic indicators for the period 1981-2020 have also been further examined by state using data from the 2011 Census of India and RBI Handbook of Statistics on Indian States. However, the life expectancy data is not available for smaller states during this specified time period and have been marked as 'NA'.

Table 3.4: State-wise Change in Major Demographic Factors (CAGR %)

State/ UT	Population	Literacy Rate	Life Expectancy	Dependency ratio
Andhra Pradesh	16.27	24.72	0.58	-9.3
Arunachal Pradesh	29.56	36.16	0.8	-4.1
Assam	19.93	16.82	0.73	-7.14
Bihar	26.07	24.24	0.11	-2.92
Chattisgarh	21.77	31.15	NA	-13.74
Goa	13.33	10.32	NA	-9.42
Gujarat	21.2	19.45	0.54	-8.61
Haryana	25.51	26.2	0.42	-11.8
Himachal Pradesh	17.1	13.87	0.48	-12.56
Jharkhand	23.28	24.32	0.86	-5.91
Karnataka	18	17.82	0.44	-10.28
Kerala	9.48	5.54	0.21	-7.52
Madhya Pradesh	23.95	23.49	0.87	-6.71
Maharashtra	21.55	13.44	0.55	-8.3
Manipur	26.07	15.89	NA	-8.3
Meghalaya	30.49	21.6	NA	-2.29
Mizoram	30.3	14.37	NA	-8.58
Nagaland	39.24	15.67	NA	-5.54
Odisha	16.71	29.33	0.9	-7.98
Punjab	18.41	20.33	0.4	-8.95
Rajasthan	26.24	32.43	0.65	-8.95
Sikkim	25.42	32.38	NA	-8.73
Tamil Nadu	13.97	14.11	0.59	-7.44
Tripura	20.86	20.38	NA	-10.74
Uttrakhand	20.73	20.04	0.35	-6.46
Uttar Pradesh	24.06	28.54	0.6	-5.24
West Bengal	18.6	20.04	0.62	-8.49
Chandigarh	33.4	4.83	NA	-2.35
Delhi	39.99	6.44	0.71	-5.92
Puducherry	26.67	9.54	NA	-8.81
INDIA	**21.06**	**19.3**	**0.69**	**-1.21**

Source: 2011 Census of India
Handbook of Statistics on Indian States, 2010-2020

The growth rate of population ranged from 9.48% to 39.99% among the states, with the growth rate of India at 21.06%. Uttar Pradesh, Maharashtra, Bihar, West Bengal and Andhra Pradesh are the most populated states with 19.98 crore, 11.28 crore, 10.41 crore, 9.13 crore and 8.46 crore population respectively. The states with highest growth rates of population are Delhi (39.99%), Nagaland (39.24%), Chandigarh (33.40%), Puducherry (26.67%), Bihar (26.07%). As shown in Table 3.4, the other North-Eastern states, aside from Nagaland, also had very high growth rates, with Meghalaya being the highest (30.49%), followed by Mizoram (30.30%), Arunachal Pradesh (29.56%), Manipur (26.07%) and Sikkim (25.42%). On the other side of the spectrum, the states with the lowest growth rates of population were Kerala (9.48%), Tamil Nadu (13.97%), Odisha (16.71%), Karnataka (18%), Punjab (18.41%) and West Bengal (18.6%).

Table 3.4 shows that the states with the highest growth rates in literacy are Arunachal Pradesh (36.16%), Rajasthan (32.43), Sikkim (32.38%), Odisha (29.33%) and Uttar Pradesh. However, the states with the lowest growth are Chandigarh (4.83%), Kerala (5.54%), Delhi (6.44%), Puducherry (9.54%) and Goa (10.32%). As per the latest data, the states with the highest literacy rates were Kerala, Lakshadweep, Mizoram, Goa and Tripura with literacy rates of 94%, 91.85%, 91.33%, 88.7% and 87.22% respectively. The North-Eastern states all had double-digit growth rates for literacy rate, with Arunachal Pradesh and Sikkim having the some of the highest growth rates. As for the other states, the growth rates in order of high to low are Meghalaya, Tripura, Assam, Manipur, Nagaland and Mizoram with 21.6%, 20.38%, 16.82%, 15.89%, 15.67% and 14.37% respectively.

From the available data, Odisha had the highest growth in life expectancy among the states at 0.90%. This was followed by Madhya Pradesh (0.87%), Jharkhand (0.86%), Arunachal Pradesh (0.80%), Assam (0.73%) and Delhi (0.71%). On the other hand, the states with the lowest growth in life expectancy were Bihar (0.11%), Kerala (0.21%), Uttarakhand (0.35%), Punjab (0.40%), Haryana (0.42%), Karnataka (0.44%) and Himachal Pradesh (0.48%). As given in Table 3.4, the state data for life expectancy was only available for Arunachal Pradesh (0.80%) and

Assam (0.73%) among the North-Eastern states, both of which were among the states with the highest growth rates.

All the states had a negative growth rate of dependency ratio, implying the increasing ratio of working population for each state. Among the states, Chattisgarh had the highest growth rate at 13.74%, with the dependency ratio changing from 79.2 to 52.3. This was followed by Himachal Pradesh, Haryana, Tripura and Karnataka with negative growth rates of 12.54%, 11.80%, 10.74% and 10.28% respectively. The state with the lowest growth rates of dependency ratio was Meghalaya (2.29%), Chandigarh (2.35%), Bihar (2.92%), Arunachal Pradesh (4.10%) and Uttar Pradesh (5.24%). Among the North-Eastern states, Tripura has the highest growth (10.74%), with the dependency ratio changing from 86.6 to 55.2. Meghalaya had the lowest growth (2.29%), with the dependency ratio changing from 88.2 to 75.2. The other states in order of highest growth rates are Sikkim (8.73%) with a dependency ratio of 60.2, Mizoram (8.58%) with a ratio of 64.6, Manipur (8.30%) with a ratio of 56.2, Assam (7.14%) with a ratio of 62.9, Nagaland (5.54%) with a ratio of 63.2 and Arunachal Pradesh (4.10%) with a ratio of 68.7.

3.5. Economic Development and Life Insurance: An Analysis

The economic factor most linked or studied with the growth of insurance is Gross Domestic Product (GDP). It has been found that an economy with a high level of GDP has a well-developed insurance market and high-income levels of the households, resulting in a positive influence on the life insurance demand (Li et al., 2007; Outreville, 2013; Mitra, 2017; Emamgholipour et al., 2017). In almost all studies considering insurance demand at the country level, GDP shows up as by far the most important driver of growth (Outreville, 2012). The growth of GDP and life insurance are discussed in detail in this section.

3.5.1. Summary of trends and patterns

The national growth of the life insurance sector was discussed in section 3.3. This growth has been further analysed for the different states and UTs in India in this section. The data on new business premiums for individual and group policies during the period 2010-2020 from the IRDAI Handbook on Indian Insurance was used for this purpose. The growth rate of new business premium, defined as the premium acquired from new policies for a particular year, indicates the growth of the sector each year. As the data for some smaller states and union territories were not consistently avalaible during the specified time period, such states/union territories were omitted from the analysis. The Compound Annual Growth Rate (CAGR) of new business premiums for the states and UTs in India are given in Table 3.5.

The overall growth rate of new business premium during 2010-2020 is 9.65%, with a growth rate of 1.92% for individual policies and 15.47% for group policies. Among the states, Uttarakhand showed the highest growth rate of new business at 14.55%, followed by Tamil Nadu (14.26%), Telangana (14.03%), Haryana (11.57%) and Chattisgarh (11.54%). Interestingly, Andhra Pradesh was the only state which showed negative growth rate (-6.63%) for total new business during the time period. Although some states showed negative growth rates for individual premiums, all except Andhra Pradesh had a positive growth rate of total new premiums. Other states which showed low growth rates were Chandigarh (0.8%), Meghalaya (1%), Madhya Pradesh (1.61%) and Nagaland (2.37%).

Among the North-Eastern states, Assam shows the highest growth rate (11.48%), followed by Tripura (8.37%) and Arunachal Pradesh (7.91%). Meghalaya and Nagaland have CAGR 1% and 2.37% respectively, which is relatively lower growth rates than the other states which all surpassed 7% CAGR.

Table 3.5: State-wise Performance on New Business Premium

State/ UT	Individual Premium (CAGR %)	Group Premium (CAGR %)	Total Premium (CAGR %)	Per capita Average Premium (Rs/Year)
Andhra Pradesh	-5.33	-4.86	-6.63	655.42
Arunachal Pradesh	7.86	22.25	7.91	370.41
Assam	6.54	23.64	11.48	746.65
Bihar	3.28	43.61	8.87	296.83
Chattisgarh	3.28	13.28	11.54	624.26
Goa	3.14	7.92	4.48	3485.12
Gujarat	3.07	14.59	6.65	1204.69
Haryana	3.74	21.81	11.57	931.85
Himachal Pradesh	-2.53	22.63	4.57	1043.89
Jharkhand	2.86	7.5	6.67	739.35
Karnataka	1.89	15.76	11.28	2439.66
Kerala	-2.45	15.87	6.75	1496.66
Madhya Pradesh	0.32	6.47	1.61	436.97
Maharashtra	4.35	14.07	10.53	3445.99
Manipur	2.51	21.87	7.01	356.21
Meghalaya	3.42	1.34	1	460.5
Mizoram	-5.57	28.92	7.19	342.96
Nagaland	2.85	-9.77	2.37	328.01
Odisha	5.18	16.82	10.19	669.68
Punjab	-2.3	11.19	3.33	712.82
Rajasthan	-0.4	17.27	6.7	543.78
Sikkim	2.19	16.8	7.32	840.77
Tamil Nadu	-0.44	22.2	14.26	1830.9
Telangana	13.96	12.88	14.03	1101.31
Tripura	3.34	9.5	8.37	610.2
Uttrakhand	1.76	29.97	14.55	2492.11
Uttar Pradesh	1.76	16.49	5.91	395.3
West Bengal	4.17	16.5	10.03	1469.6
Chandigarh	-6.9	7.9	0.8	7719.77
Delhi	1.3	14.32	2.97	2912.94
Puducherry	5.09	2.09	7.49	1040.84
INDIA	**1.92**	**15.47**	**9.65**	**1304.71**

Source: Handbook of Indian Insurance, 2010-2020
Economic Survey, 2020

In addition to the total new business premium, the average premium was calculated for 2010-2020, from which the per capita average premium/ per capita life insurance density for new business was derived using population data from the 2011 census. This indicates the average cost/ premium of new life insurance policies for each state. The per capita average premium for the country was Rs.1304.71, as shown in Table 3.5. The highest per capita average premium was Chandigarh (Rs.7719.77/yr.), which is interesting considering that it also has the second lowest growth rate of new business. Other states/UTs with high per capita average premium are Goa (Rs.3485.12/yr.), Maharashtra (Rs.3445.99/yr.), Delhi (Rs.2912.94/yr.), Uttarakhand (Rs.2492.11/yr.) and Karnataka (Rs.2439.66/yr.). Of these, Goa and Delhi also among the places with the lowest new business premium growth rates as mentioned above, with 4.48% and 2.97% respectively. On the other hand, Uttarakhand has one of the highest per capita average premiums but also one of the highest growth rates of new business.

Bihar had the lowest per capita average premium at Rs.296.33/yr., followed by Nagaland (Rs.328.01/yr.), Mizoram (Rs.342.96/yr.), Manipur (Rs.356.21/yr.), Arunachal Pradesh (Rs.370.41/yr.) and Uttar Pradesh (Rs.395.30/yr.). Of these six states, it may be noted that four are from the North-Eastern area. States such as Nagaland, Meghalaya, Madhya Pradesh and Uttar Pradesh are states with low per capita average premium as well as some of the lowest growth rates of new business. This indicates that the life insurance sector grows slowly, and policyholders pay low premiums in these states. This issue has been a cause for concern since 2019, and IRDAI even provided research opportunities under the topic ‘Life insurance and the factors responsible for its deficiency in the state of Uttar Pradesh’.

In addition to the state-wise growth of new business premium, the compound annual growth rate of Gross State Domestic Product (GSDP), per capita GSDP and the Gross State Value Added (GSVA) for Banking and Insurance for the states have been calculated using the base year 2011-2012. These are presented in Table 3.6.

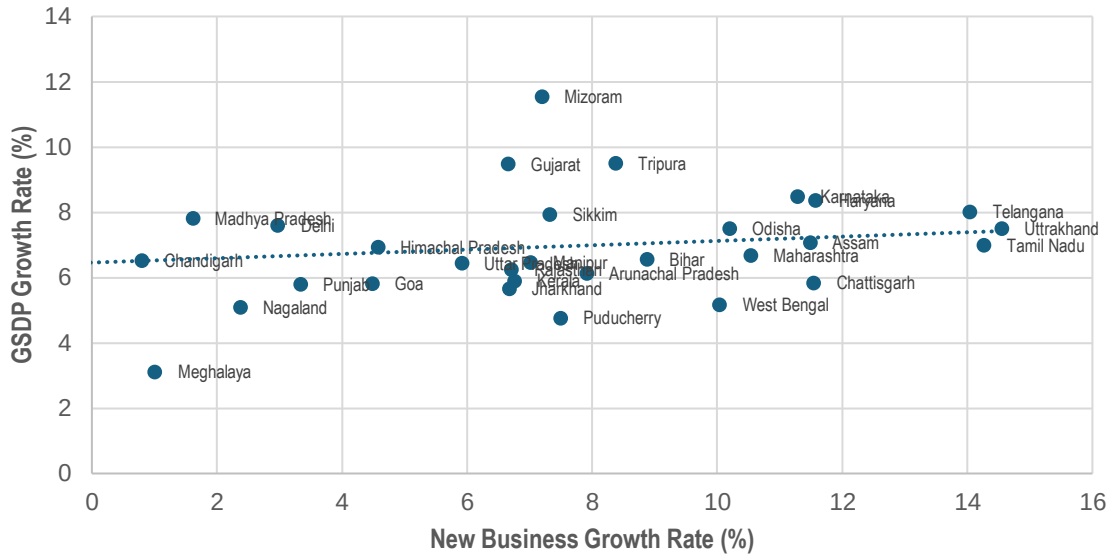
Further, Fig.3.2 shows the growth of both new business premium and GSDP for the states.

Table 3.6: State-wise Performance on Growth Indicators

State/ UT	GSDP (CAGR %)	Per capita GSDP (CAGR %)	GSVA-Banking & Insurance (CAGR %)
Andhra Pradesh	7.75	6.72	5.08
Arunachal Pradesh	6.14	4.46	4.17
Assam	7.07	5.48	8.18
Bihar	6.56	4.44	10.24
Chattisgarh	5.85	3.9	5.82
Goa	5.82	4.95	2.79
Gujarat	9.49	8.13	9.93
Haryana	8.37	6.74	11.26
Himachal Pradesh	6.95	6.44	2.43
Jharkhand	5.67	4.03	6.48
Karnataka	8.49	7.15	9.67
Kerala	5.91	5.65	6.63
Madhya Pradesh	7.82	6.18	5.02
Maharashtra	6.69	5.58	6.94
Manipur	6.48	4.29	6.94
Meghalaya	3.13	0.6	3.41
Mizoram	11.55	10.56	6.28
Nagaland	5.1	3.9	1.78
Odisha	7.5	6.73	6.46
Punjab	5.81	4.29	5.66
Rajasthan	6.26	4.4	7.79
Sikkim	7.94	6.62	7.43
Tamil Nadu	6.99	6.24	7.35
Telangana	8.03	6.97	10.32
Tripura	9.51	8.2	9.15
Uttrakhand	7.51	6.4	6.77
Uttar Pradesh	6.45	4.52	6.73
West Bengal	5.18	4.02	4.71
Chandigarh	6.53	4.57	2.81
Delhi	7.61	5.14	4.75
Puducherry	4.78	1.54	6.9
INDIA	**7.13**	**5.55**	**7.08**

Source: Handbook of Statistics on Indian States, 2010-2020 National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India.

Fig.3.2: Growth of Life Insurance Premium and GSDP



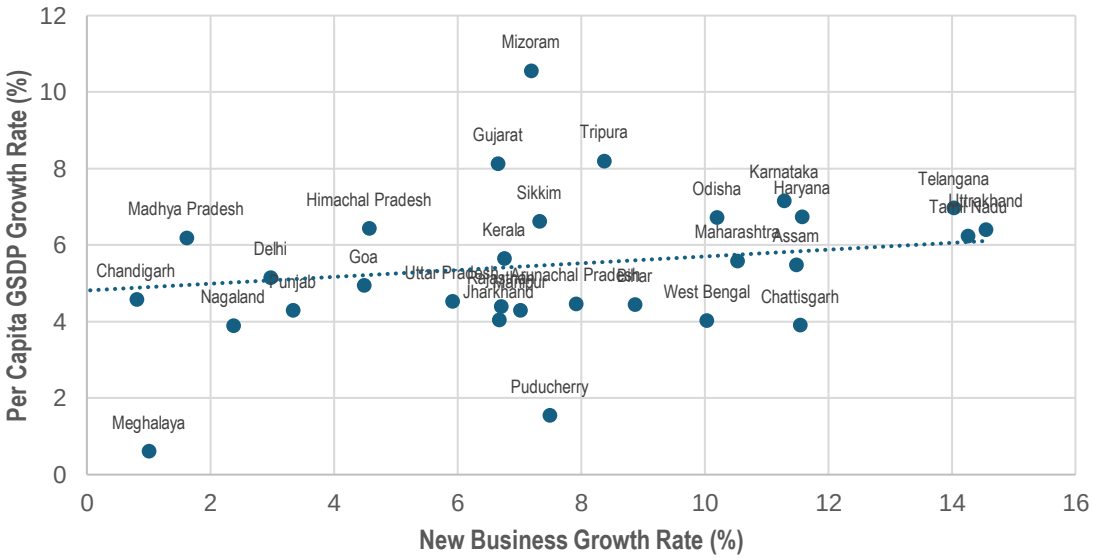
The total growth rate of GSDP for India is 9.65% and Gujarat showed the highest CAGR for GSDP at 0.495%. Gujarat is followed by Karnataka (8.49%), Haryana (8.37%), Telangana (8.03%), Madhya Pradesh (7.82%), Andhra Pradesh (7.75%), Uttarakhand (7.5%), Odisha (7.5%) and Assam (11.48%). Among the smaller states and UTs, Mizoram, Tripura, Sikkim and Delhi registered the highest growth rate of GSDP, at 11.55%, 9.51%, 7.94% and 7.61% respectively. A significant note is that many of these states, i.e., Haryana, Karnataka, Telangana, Uttarakhand, Assam and Odisha are amongst the states with the highest growth rate of new business premiums, as shown in Fig 3.2. On the other hand, Andhra Pradesh and Madhya Pradesh had some of the highest growth rates of GSDP and lowest growth rates of new business premiums.

Meghalaya recorded the lowest growth rate of GSDP at 3.13% and was also the state with the second lowest growth rate of new business premium at 1%. Other states with the lowest growth rate of GSDP were Puducherry (4.78%), Nagaland (5.10%), West Bengal (5.18%), Jharkhand (5.6%), Punjab (5.81%), Goa (5.82%), Chattisgarh (5.85%), Arunachal Pradesh (6.14%), Rajasthan (6.26%), Uttar Pradesh (6.4%) and Chandigarh (6.5%). A number of these states, i.e., Nagaland, Jharkhand,

Punjab, Goa, Arunachal Pradesh, Rajasthan, Uttar Pradesh and Chandigarh recorded some of the lowest growth rates of new business premium as well.

To supplement the findings in Table 3.5 and table 3.6, the state-wise growth of GSDP and new business premium are presented in Fig.3.3.

Fig.3.3: Growth of Life Insurance Premium and Per capita GSDP

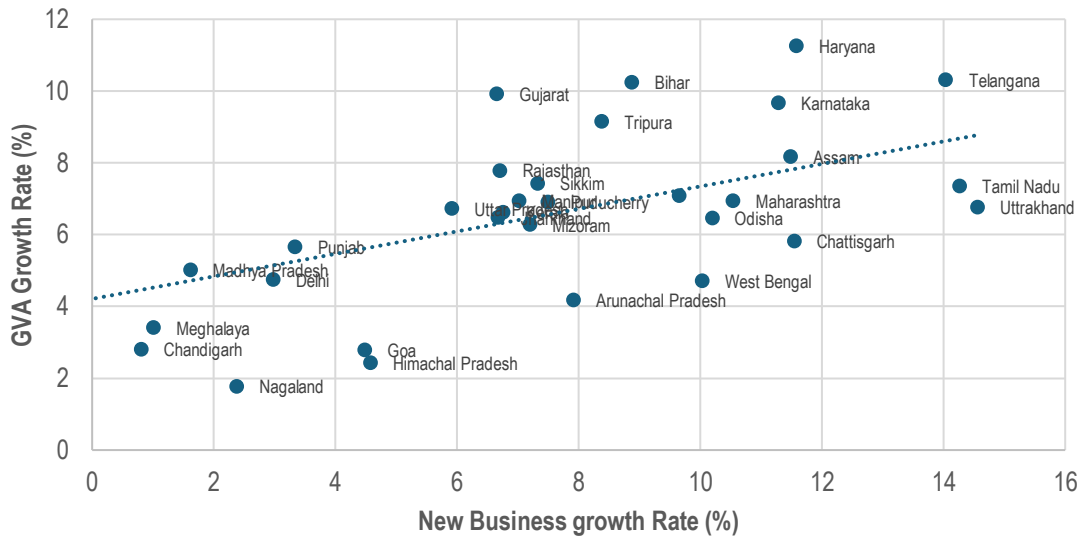


With reference to per capita GSDP, the total growth rate of the country was 5.55% and the states with highest growth rates are quite similar to the ones listed under GSDP. Gujarat had the highest CAGR of per capita GSDP at 8.13% as shown in Fig.3.3. The other states with high growth rate of per capita GSDP are Karnataka (7.15%), Telangana (6.9%), Haryana (6.74%), Andhra Pradesh (6.72%), Odisha (6.73%), Uttarakhand (6.4%), Himachal Pradesh (6.44%) and Tamil Nadu (6.24%). Among the smaller states, Mizoram, Tripura, and Sikkim recorded the highest rates of growth at 10.56%, 8.2% and 6.62% respectively. As presented in Fig.3.3, many of these states were amongst those which had the highest growth rates of new premium such as Karnataka, Telangana, Haryana, Odisha, Uttarakhand, and Tamil Nadu.

As noted above, Meghalaya showed one of the lowest growth rates for new business premium and as shown in Fig.3.3, it also recorded the lowest per capita growth rate at 0.60%. Puducherry (1.54%), Chattisgarh (3.90%), Nagaland (3.90%), West Bengal (4.02%), Jharkhand (4.03%), Manipur (4.29%), Bihar (4.44%), Arunachal Pradesh (4.46%), Uttar Pradesh (4.52%) and Chandigarh (4.57%) recorded the lowest growth rates of per capita GSDP during this time and among these states, Fig 3.3 shows that Nagaland, Punjab, Jharkhand, Arunachal Pradesh, Uttar Pradesh and Chandigarh also showed some of the lowest growth rates of new business premium. This indicates that these states have low growth in both the economy and life insurance sector.

The compound growth rate of Gross State Value Added for the sector of 'Banking and Insurance' for different states during the same period are also shown in Table 3.5. This sector has been included as it is specific to insurance and banking, apart from other activities that contribute to the gross domestic product/ gross domestic value of a state. The sector is implied to have a high positive correlation with the development of the life insurance sector (Beck & Webb, 2003; Li et al., 2007). To supplement the growth rates of state GVA (Banking and Insurance) in Table 3.5, the state-wise growth rates of new business premium and GVA (Banking and Insurance are presented in Fig.3.4.

Fig.3.4: Growth of Life Insurance Premium and GVA (Banking and Insurance)



The total growth rate for India was 7.08%, with a range of 1.78 to 11.26. Haryana recorded the highest compound growth rate of the banking and insurance sector at 11.26%. This was followed by Telangana (10.32%), Bihar (10.24%), Gujarat (9.93%), Karnataka (9.67%), Tripura (9.15%), Assam (8.18%) and Rajasthan (7.79%). Among these states, Haryana, Telangana, Kerala, and Assam also have some of the highest growth rates of new business premium as shown in Fig.3.4. Then, high growth in the Banking and Insurance sector also implies high growth of new business in life insurance sector.

Among the states, Nagaland recorded the lowest CAGR for the banking and insurance sector at 1.78%. The other states that showed low growth rates are Chandigarh (2.8%), Himachal Pradesh (2.43%), Goa (2.79%), Meghalaya (3.41%), Arunachal Pradesh (4.17%), Delhi (4.75%), Madhya Pradesh (5.02%) and Andhra Pradesh (5.08%). As noted in the cases of GSDP and per capita GSDP, many of the states with low growth rates also recorded some of the lower growth rates of new business premium. These states include Nagaland, Chandigarh, Goa, Meghalaya, Arunachal Pradesh, Delhi, Andhra Pradesh, and Madhya Pradesh.

3.5.2. Empirical analysis of the relationship

Based on the observations in previous section, the relationship between life insurance and economic development warrants further empirical study. For this purpose, GDP is used as the development indicator and annual total premium is used as the indicator for life insurance. The study uses log regression equation as presented:

$$\log Y = \alpha + \beta \log X + u_i \qquad (3.1)$$

where, Y= GDP and X= Total premium

The log-log regression method is selected as it possesses an advantage that the estimated slope coefficient is the constant elasticity of the dependent variable on the independent variable. Moreover, this model has also shown comparative advantage over linear regression model as it revealed better model fit over the linear

model by showing lower value of the Akaike information criterion (AIC) and Schwarz information criterion (SIC) criteria. The result of estimated log-linear (log-log) regression is presented in Table 3.7.

Table 3.7: Log-Linear Regression Result of Total Life Insurance Premium on GDP

Dependent Variable: Log (Total premium)

Independent Variables	Coefficient	Std. Error	t-Statistic	Prob.
LOG(GDP)	1.43***	0.03	48.17***	0
Constant	-10.39***	0.44	-23.88***	0
R-squared	0.98	Akaike info criterion		0.3
Adjusted R-squared	0.98	Schwarz criterion		0.39
Durbin-Watson stat	0.12			

***significant at 1% level. ** significant at 5% level

Source: Computed

Table 3.7 shows that R-squared value is 0.98 with adjusted R-squared being 0.98, implying that GDP and life insurance are highly related or 98% of the variation in life insurance premium depends on the changes in the GDP. The regression coefficient is 1.43 and since the method holds the regression coefficient at constant elasticity, a coefficient of 1.43 implies a more than proportional growth of life insurance premium to GDP. As such, the significant regression coefficient implies that the growth of life insurance, as indicated by total premium, is significantly related to economic development, as indicated by GDP. Moreover, since the coefficient is higher than 1, it can be interpreted that the growth of life insurance is highly sensitive/volatile to economic development. These finding supports Hypothesis No.1 of the study, i.e., the growth of life insurance in the economy is directly related to economic growth.

Having established direct relationship between the growth of life insurance sector and economic growth, it is of academic interest to further examine the directions of cause-effect relationship between the two, i.e., whether growth of insurance causes economic growth or vice versa. Studies have found evidence that the development of the insurance sector is related to economic growth (Ward & Zurbruegg, 2000; Lee, 2019) and in almost all studies considering insurance demand,

GDP shows up as, by far, the most important driver of growth in a country (Outreville, 2012). Moreover, economies with high levels of GDP have well-developed insurance markets and high-income levels of the households, resulting in a positive influence on the life insurance demand (Emamgholipour et al., 2017; Mitra, 2017). Beck and Webb (2003) and Li et al. (2007) also found that the higher the household income, the higher the affordability and probability of households purchasing life insurance products.

The existence of a relationship between the two variables, GDP and total premium, may not clearly capture the cause-effect relationship at current and lagged values of these variables. As such, there is a need to further examine the nature of relationship and if there is lagged cause-effect relationship between them, i.e., whether the events of a previous time period (in this case, the previous year) have an impact on the current time (current year). The existence of a possible two-way relationship or bilateral causality is tested using the Granger Causality test. The Granger Causality test is a test of predictive causality, or if "y_i causes y_j", which is shorthand for the more precise statement "y_i contains useful information for predicting y_j, over and above past histories of the other variables in the system" (Diebold, 1997). The test involves estimation of the following pairs of regression equations:

$$Y_t = \sum_{i=1}^{n} \propto_i X_{t-i} + \sum_{j=1}^{n} \beta_j Y_{t-j} + u_{1t} \quad (3.2)$$

$$X_t = \sum_{i=1}^{n} \gamma_i X_{t-i} + \sum_{j=1}^{n} \delta_j Y_{t-j} + u_{2t} \quad (3.3)$$

where, Y= GDP and X= Total premium

Equation (3.2) postulates that current Y (GDP) is related to past values of itself as well as that of X (total premium), and equation (3.3) postulates a similar behaviour for total premium. In other words, if any one of the $\propto_i$'s in Eq. (3.2) are significant it is said that X causes Y, and if any one of δ_j's in Eq. (3) is significant, it is considered as Y causes X. Meanwhile, there is a bilateral relationship if the coefficients are significant in both equations. However, the Granger causality test requires preconditions that both variables must be stationary, i.e., statistical

properties such as expectation, variance, autocorrelation, etc. of the time series are all constant over time (Dickey and Fuller, 1976). A popular test of stationarity is the Unit Root Test, a measurement to determine how much stationarity a time series model possesses.

$$\Delta Y_t = \delta Y_{t-1} + u_t \quad (3.4)$$

In equation (3.4), we test the null hypothesis that δ = 0, where δ= 1- ρ (ρ being unit root), and the alternative hypothesis being that δ < 0. If δ = 0, then ρ =1, there is a unit root, implying that the time series under consideration is non-stationary.

Statisticians David Dickey and Wayne Fuller developed the Augmented Dickey-Fuller (ADF) test in 1979. It is one of the most commonly used unit root tests, and is represented mathematically as:

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-1} + u_{1t} \quad (3.5)$$

$$\Delta X_t = \varpi_1 + \varpi_2 t + \varrho X_{t-1} + \sum_{i=1}^{m} \tau_i \Delta X_{t-1} + u_{2t} \quad (3.6)$$

where, Y= GDP and X= Total premium. Under the null hypothesis that δ and ϱ, both indicating $1 - \rho$ (ρ being unit root), are zero in equations (3.5) and (3.6) respectively; Y and X are said to be stationary series if the two coefficients are significant. The results of the tests are shown in Table 3.8.

Table 3.8: Unit Root Test and Granger Causality Test

1. Unit Root Test

Variable	*Difference*	*ADF Statistics*	*Status*	*Critical Value at 1% level*
GDP	Level	-6.18***	Stationary	3.64
Total Premium	Level	-3.78***	Stationary	3.64

2. Granger Causality Test

Lag	*Null Hypothesis*	*F-Stats.*	*Prob.*
1	GDP does not Granger Cause Total Premium	1.567	0.224
	Total Premium does not Granger Cause GDP	1.134	0.334
2	GDP does not Granger Cause Total Premium	1.383	0.267
	Total Premium does not Granger Cause GDP	0.684	0.569
3	GDP does not Granger Cause Total Premium	1.383	0.267
	Total Premium does not Granger Cause GDP	0.684	0.569
4	GDP does not Granger Cause Total Premium	7.782***	0.0003***
	Total Premium does not Granger Cause GDP	0.994	0.428
5	GDP does not Granger Cause Total Premium	11.062***	0.00001***
	Total Premium does not Granger Cause GDP	4.368***	0.0057***

***significant at 1% level

Source: Computed

Table 3.8 shows that both GDP and total premium are stationary and ADF values (-6.18 and -3.78) are both significant at level difference. The significant F-statistic in Granger-Causality Test at lag 4 and 5 for GDP, and lag 5 for total premium showed bilateral causal relationship between growth of GDP and total premium. To further examine this lag cause and effect relationship, the Vector autoregression (VAR) model, developed by Christopher Sims in 1980, is selected. The VAR model makes no priori distinction between endogenous and exogenous variables. The term autoregressive is due to the lagged value of the dependent

variable and the term vector is because the model deals with vectors of two or more variables. Before estimation of VAR, the maximum lag length is to be selected. To achieve parsimonious model in the selection of lag length, the estimated R-squares, AIC and SC values for different lag are presented in Table 3.9.

Table 3.9: VAR Model Selection based on R-square, AIC and SC

Lags	Premium			GDP		
	R-Square	AIC	SC	R-Square	AIC	SC
1	0.99	21.91	22.04	0.99	28.6	28.73
2	0.99	21.91	22.13	0.99	27.33	27.61
3	0.99	22.01	22.32	0.99	27.44	27.75
4	0.99	21.45	21.84	0.99	27.48	27.87
5	0.99	21.04	21.53	0.99	27.12	27.55
6	0.99	21.15	21.73	0.99	27.13	27.71

Source: Computed

Table 3.9 shows that R-squared, measuring goodness of fit, is similar for all the lag lengths under consideration. Since R-squared is high for all lag lengths (0.99), the Akaike's Information Criterion (AIC) and Schwarz Information Criterion (SIC) are considered for selection of lag length. In comparing two or more models, the model with the lowest values of AIC and SIC is preferred. Table 3.9 shows that for five lags, the total premium and GDP had the lowest values of AIC and SIC values at 21.04, 21.53, 27.12 and 27.55 respectively. Since the lower the values of Akaike and Schwarz statistics, the better the model, the most parsimonious model at five lags is preferred. After the selection of lag length, the results of the VAR estimation are presented in Table 3.10.

Table 3.10: Vector Autoregression Estimates

Lagged Variables	Total Premium	GDP
Total Premium (-1)	1.64	-1.41
	(-0.17)	-3.55
	*[9.69***]*	*[-0.39]*
Total Premium (-2)	-0.37	2.18
	-0.23	-4.76
	[-1.64]	*[0.46]*
Total Premium (-3)	-0.25	7.32
	-0.21	-4.32
	[-1.2]	*[1.69]*
Total Premium (-4)	-0.4	-17.98
	-0.2	-4.27
	[-1.98]	*[-4.20***]*
Total Premium (-5)	0.52	11.31
	-0.18	-3.84
	*[2.86***]*	*[2.94***]*
GDP (-1)	0	3.14
	-0.01	-0.23
	[0.33]	*[13.71***]*
GDP (-2)	-0.08	-3.43
	-0.03	-0.59
	*[-2.96***]*	*[-5.84***]*
GDP (-3)	0.23	1.49
	-0.04	-0.82
	*[5.80***]*	*[1.81]*
GDP (-4)	-0.26	0.36
	-0.04	-0.92
	*[-5.99***]*	*[0.39]*
GDP (-5)	0.12	-0.71
	-0.03	-0.61
	*[4.09***]*	*[-1.16]*
Constant	4503.39	53827.41
	-3498.72	-73392.7
	[1.29]	*[0.73]*
R-squared	1	1

*Standard errors in ( ) & t-statistics in [ ], ***, **&*significant at 1%, 5% & 10% levels.*
Negative number in parenthesis associated with the variables indicate lag lengths.
Source: Computed

VAR result presented in Table 3.10 shows that for regression equation of total premium, GDP at lags 4 and 5 are significant, i.e., the growth of GDP will have growth implication on the total premium in the fourth and fifth year. As for

regression equation of GDP, total premium at lags 2, 3, 4 and 5 are significant, implying that total premium will have growth implications on GDP in the second, third, fourth and fifth year. This result shows that economic development causes lagged impact on insurance sector growth, and in the same way, the growth of life insurance sector growth causes economic development. The effect of one variable on the other may not show in the first year, but the causation can be observed in the next years. This implies that there is an adjustment period for the causation from GDP to total premium, and from total premium to GDP. The results of VAR analysis further substantiate the results of log regression, and it is found that there is a significant relationship between total life insurance premium and GDP, i.e., life insurance sector and economic development.

The phenomenon of lagged growth is not new to economics, and econometricians have studied the critical dependence of economic systems on the lag between cause and effect. It has been shown that the very stability of a system may depend on the length of time taken for a stimulus to pass through the transient to full response as the effects of independent variables on dependent variables have a dynamic component. In concrete terms, these effects occur neither instantaneously nor solely in the long term but are spread, or distributed, over time. Coen et al. (1969) studied lagged relationships and argued that the method of lagged relationships should be more seriously considered for short-term economic forecasting. Studies on the relation between consumption and economic growth found that the consumption had a lag of four to five years in adjusting to changes in the level of per capita income (Martin, 1967) and consumption Granger-causes economic growth after three years but economic growth Granger-causes consumption after one year (Fouda, 2013) in Australia. Many studies used vector autoregression (VAR) to study the relation between monetary policy and macroeconomic variables and found significant lags in the transmission mechanism of monetary policies (Jorgenson & Stephenson, 1967; Friedman, 1972; Havranek & Rusnak, 2018).

3.6. Demand for Life Insurance Policies

The growth of the life insurance sector is undoubtedly determined by several factors, one of them being GDP, which was discussed in the previous section. Given the significance of life insurance for consumers as well as for a country's economic development, many studies have been conducted to analyse the determinants of life insurance purchase decisions, i.e., the demand for life insurance products. Theoretical models of the demand for life insurance have been derived by Yaari (1965), Fischer (1973), Lewis (1989) and Bernheim (1991). The models view life insurance as the means by which uncertainty in the household's income stream, related to the possible premature death of a household's primary wage earner, is reduced.

Studies have examined various factors, including socioeconomic, demographic, and psychographic factors that might affect life insurance demand. Zietz (2003), Outreville (2012) and Bhatia et al. (2021) have each presented a comprehensive and detailed survey of the available empirical literature concerning demographic, social and cultural, economic, and institutional and market structure factors. In the reviewed works, Lewis (1989), Fischer (1973) and Fortune (1973) found that the demand for life insurance is highly dependent on income. As income increases, life insurance becomes more affordable. In addition, the need for life insurance increases with income as it protects dependents against the loss of expected future income due to premature death of the wage earner. Using aggregated national data, Fortune (1973), Beenstock, Dickinson, and Khajuria (1986), and Truett and Truett (1990) have demonstrated that life insurance premium expenditures and national income are positively correlated. The studies mainly used per capita income and national income to represent the income factor, and as such, Gross National Income and Per Capita Income of India from the annual Economic Survey is utilised in the study.

The dependency ratio has also been found to substantially effect life insurance demand. The influence of the ratio was investigated in several studies. One of the main purposes of life insurance was to protect dependants against financial

problems in the case of a wage-earner's premature death (Hammond et al., 1967). Lewis (1989) and Beenstock et al. (1998) found that the rise in the dependency ratio stimulates the need to purchase life insurance to protect the dependents against the financial risk in case of breadwinner's premature death. The population and dependency ratio of India from the RBI's annual Handbook of Statistics of Indian Economy are included in the study.

The life expectancy of a population has also been found to have a positive relation with the demand for life insurance, as consumers purchase the policy to cover the longevity risk associated with the increase in life expectancy (Alhassan & Biekpe, 2016; Li et al., 2007). The real interest rate has a positive effect on the demand for life insurance as the increase in the interest rate increases the return of the investments by life insurance companies, which in turn increases the demand for life insurance (Sliwinski et al., 2012; Zerriaa et al., 2017). As such, life expectancy and real interest rate from World Bank data are included among the factors in the study.

Many studies in the literature discuss the positive effect of inflation on life insurance demand. Mathew and Sivaraman (2017) found a significant positive effect of inflation and explained that with the rise in inflation, there is a drop in the future value of money and to cover this loss; consumers purchase life insurance products. Zerriaa and Noubbigh (2016) described this positive relationship between inflation and life insurance penetration, by the phenomenon of money illusion. Since inflation was mainly studied using Consumer Price Index (CPI) data in the studies above, the CPI data from the RBI's annual Handbook of Statistics of Indian Economy is also used to represent inflation in this study.

Along with GDP, other income estimates derived from GDP have also been studied. Sen and Madheswaran (2013) used Gross Domestic Savings (GDS) to estimate the household's gross savings and identified that GDS per capita impact life insurance density positively. Because of the increase in the savings level, the affordability of life insurance products increases. The growth of the financial sector and banking sector also have positive relations with life insurance growth (Beck &

Webb; 2003; Li et al., 2007; Alhassan & Biekpe, 2015; Matthew & Sivaraman, 2017; Zerriaa et al., 2017). Since the studies used the Gross Valued Added from the financial sectors for national income, the Gross Value Added from the Financial, Real Estate & Professional Services and Financial Assets of Household Sector in India from the annual Economic Survey have been included in the study.

Prior research on life insurance consumption have typically used premium expenditures as the measure of insurance consumption (Hammond et al., 1967; Anderson & Nevin, 1975; Ferber & Lee, 1980; Burnett & Palmer, 1984; Beenstock et al., 1986), and as such, the annual 'Total Premium' from life insurance taken from the IRDAI's annual Handbook on Indian Insurance and is used to represent life insurance in the study.

Over the years, researchers have used different techniques to assess the determinants of life insurance demand, the majority of which were based on time series data. In a review of seventy-six articles analysing the determinants of demand for life insurance, Bhatia et al. (2021) found that out of all the quantitative methods used for data analysis, the most used methods were logistic regression, probit regression, OLS regression, linear regression, and factor analysis methods. In one of the most cited works, Browne and Kim (1993) used the following log linear regression in their international analysis of demand for life insurance:

$$\log(Y) = \beta_0 + \beta_1 \log(DEP_i) + \beta_2 \log(MUS_i) + \beta_3 \log(INC_i) + \beta_4 \log(SSE_i) + \beta_5 \log(INF_i) + \beta_6 \log(EDUC_i) + \beta_7 \log(LE_i) + \beta_8 \log(P_i) + e_i \quad (3.7)$$

where, Y= life insurance per capita, DEP_i = dependency ratio, INC_i = income per capita, SSE_i = social security expenditures per capita, INF_i = expected inflation rate, P_i = insurance loading charge, $EDUC_i$ = rate of third-level education, LE_i = Life expectancy, MUS_i = Classification variable which takes the value of 1 if country i's population is predominantly Islamic and 0 otherwise, and e_i = the random error term for country i.

Das and Shrome (2016) also utilised the following multiple regression formula to derive a demand function for life insurance penetration:

$$\log(P_i) = \alpha_0 + \alpha_1(logI) + \alpha_3 \log(FDI) + \alpha_4(logPL) + \alpha_5 \log(E) + \alpha_6 \log(Op) + \alpha_7 \log(LE) + \alpha_8 \log(GTI) + \alpha_9 \log(DR) \quad (3.8)$$

where, P_i= Penetration of life insurance, I= Inflation rate, FDI= Foreign Direct Investment inflow, PL= Productivity of labour, E= Education, Op= Openness Ratio, LE= Life expectancy, GTI= Global Terrorism Index and DR= Dependency ratio.

Due to the established credibility of the log linear regression method in previous studies, the same will also be utilised for this study. In accordance with the studies mentioned above, the factors considered for the study are the ones which were found to have a positive impact on life insurance demand. The variables were Gross Domestic Product (GDP), Per Capita Income (PCI), Financial Assets of Household Sector, Gross National Income, Gross Domestic Saving, Financial, Real Estate & Professional Services, Consumer Price Index (CPI), real interest rate, population, dependency ratio and life expectancy, all of which have been found to have an impact on the demand for life insurance products. Among these factors, the Gross Domestic Product, Financial Assets of Household Sector, Gross National Income, Gross Domestic Saving, and Financial, Real Estate & Professional Services are calculated from the same base. Moreover, the Per Capita Income (PCI) is calculated using both GDP and population, and the dependency ratio is also calculated using the population data, implying an indirect relationship with PCI.

As such, it was found that the variables were highly correlated and all the variables showed a correlation higher than 0.9, posing a multi-collinearity problem. To avoid the multi-collinearity problem, the Per Capita Income was taken as a representative of the other measures of income and savings, because it is one of the most common measures of standard of living and the factor that has been shown to

be most significant in previous studies (Beck & Webb, 2003; Li et al., 2007; Elango & Jones, 2011; Bhatia et al., 2021). The dependency ratio has also been chosen as a representative of population, as it is a good indicator of the population structure and was found to be an important indicator of life insurance demand (Lewis, 1989; Beenstock et al., 1998; Sliwinski et al., 2012; Alhassan & Biekpe, 2016).

At the same time, the insurance decision of households has increasingly been motivated by endowments and investments. This implies that interest rates would serve as a comparable or substitute product for life insurance (Sliwinski et al., 2012; Zerriaa & Noubbigh, 2016). Thus, the real interest has also been taken as a determinant of demand for life insurance. The saving decisions and allocation of financial assets is also influenced by inflation as life insurance products have been increasingly utilised as investment tools. As such, the rate of inflation is also considered to be an important factor determining the demand for life insurance (Mathew & Sivaraman, 2017; Zerriaa & Noubbigh, 2016). Hence, the factors analysed were Per Capita Income, Consumer Price Index, real interest rate, dependency ratio and life expectancy.

The log linear regression technique was chosen to estimate demand; it has the advantages of being used for variables with different scales of measurement and the estimated slope coefficient is the constant elasticity of the dependent variable on the independent variable. It was also the most commonly used method to determine the demand for life insurance in previous studies (Bhatia et al., 2021). At the same time, the log linear regression cannot be used for negative identities. Since the real interest rate of India was negative for one year (2010) in the specified time period, its inclusion would cause an estimation problem. Consequently, it is decided to consider this year as missing case. The log linear regression is expressed in Equation (3.9):

$$\log(Y) = \alpha + \beta_i \log(X_i) + \beta_2 \log(X_2) + \beta_3 \log(X_3) + \beta_4 \log(X_4) + \beta_5 \log(X_5) \quad (3.9)$$

where, Y= Total premium, X_i=PCI, X_2=CPI, X_3= real interest rate, X_4=dependency ratio and X_5=life expectancy. Before the regression analysis, multi-collinearity of the variables is tested using Variance Inflection Factor (VIF). Multi-collinearity is not a condition that either exists or does not exist in economic functions, but rather a phenomenon inherent in most relationships due to the nature of economic magnitudes. When two explanatory variables are changing in nearly the same way, it becomes extremely difficult to establish the influence of each regressor on the dependent variable separately (Koutsoyiannis, 1973). The VIF is the speed with which variances and covariances increase, and is defined as:

$$VIF = \frac{1}{(1-r_{xixj}^2)} \qquad (3.10)$$

where r_{xixj} is the coefficient of pairwise correlation. VIF shows how the variance of an estimator is inflated by the presence of multi-collinearity, i.e., as the collinearity increases, the variance of an estimator increases. The larger the value of VIF, the more collinear the variables and if VIF value is 1, there is no collinearity between x_i and x_j. As a rule of thumb, if the VIF of a variable exceeds 10, which happens if the coefficient of pairwise correlation exceeds 0.90, the variable is said to be highly collinear (Gujarati et al., 1980). The results of the VIF and regression analysis are presented in Table 3.11.

The lower panel of Table 3.11 shows the results of VIF analysis and reveal that the impact of multi-collinearity is evident in all the factors except for interest rate, for which the centered VIF was low at 1.22. Since the centered VIF value exceeds 10 for the other four factors, it is evident that the PCI, CPI, dependency ratio and life expectancy are still highly collinear, and the accuracy and reliability of the results could be questioned. As the national income is calculated using the market value of all goods and services, it is further understood that the market prices and income, CPI and PCI, are related and not independent of each other. The PCI,

dependency ratio and life expectancy are also calculated from the same population data and are therefore related.

Table 3.11: Estimated Log Linear Regression of Demand for Life Insurance Policy

Dependent Variable: Log (Life Insurance Policy Premium)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Log (PCI)	-3.776	1.815	-2.08	0.045
Log (CPI)	0.785	0.495	1.586	0.122
Log (Interest)	-0.281	0.109	-2.576	0.015
Log (Life expectancy)	24.093	5.586	4.313	0
Log (Dependent ratio)	-9.615	6.202	-1.55	0.131
Constant	-12.287	51.692	-0.238	0.814
R-squared	0.988	Adjusted R-Squared		0.986

Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
Log (PCI)	3.295	223690.3	527.333
Log (CPI)	0.245	2442.333	107.564
Log (Interest)	0.012	23.323	1.221
Log (Life expectancy)	31.205	327894.8	122.272
Log (Dependent ratio)	38.463	407301.8	483.877
Constant	2672.072	1639138	NA

Source: Computed

As shown in Table 3.11, the values of R-squared and adjusted R-squared are both significant at 10%, and the adjusted R-squared value is highly significant at 98%. Among the factors, PCI, interest rate and life expectancy were all significant to the demand for insurance. Since income (PCI) has most often been found as a significant determinant of demand in previous studies, and since it is used as a parameter for standard of living (Beck & Webb, 2003; Li et al., 2007; Elango & Jones, 2011; Bhatia et al., 2021), the income factor is still retained from the above variables. However, the other variables that are highly related to income, but show high multicollinearity (i.e., high VIF), have been dropped. As such, the model is reduced to PCI and real interest rate, as shown in Equation (3.11).

$$\log(Y) = \alpha + \beta_i \log(X_i) + \beta_3 \log(X_3) \qquad (3.11)$$

where, Y= Total premium, X_i=PCI, X_3= real interest rate. The estimated result is shown in Table 3.12.

Table 3.12: Estimated Demand Function for Life Insurance Policy in India

Dependent Variable: Log (Life Insurance Policy Premium)

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Log (PCI)	3.91	0.2	20.04	0.00
Log (Interest)	-0.21	0.24	-0.85	0.4
Constant	-30.34	2.26	-13.41	0.00
R-squared	0.933	Adjusted R-Squared		0.929

Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
Log (PCI)	0.038	511.78	1.206
Log (Interest)	0.059	23.05	1.206
Constant	5.119	620.8	NA

Source: Computed. ***significant at 1% level, **significant at 5%

The VIF test was used again for the two chosen factors to check for multi-collinearity. The lower panel of Table 3.12 shows that the Centered VIF was 1.206 for both PCI and real interest, indicating that there is no problem of multi-collinearity amongst the factors. As mentioned, PCI is a good indicator of the standard of living, income distribution and quality of life. In the new regression estimation, table 3.12 shows that only PCI is highly significant at 1% level, with a positive coefficient of 3.91. This indicates that there is a positive relation between demand for life insurance and per capita income. However, contrary to the previous finding, the real interest rate was not found to be significant. Hence, it may be concluded that the income and demand for life insurance policies have a highly positive relationship.

However, dropping certain variables to minimise the problem of multi-collinearity in the regression analysis may not be justified as significant contributing factors can be dropped from the model. This can lead to specification error in the

model, which may result further estimation problems. To enhance and substantiate the findings of the log linear regression analysis, a demand function free of the problem of multi-collinearity was estimated using a method of factor analysis, i.e., Principal Component Analysis (PCA) which was developed by H. Hotelling in 1933. The aim of the method of principal components is the construction out of a set of variables, X_j's (j= 1, 2, 3, …, k) of new variables P_i called principal components, which are linear combinations of the X's:

$$P_1 = a_{11}X_1 + a_{12}X_2 + \cdots + a_{1k}X_k$$

$$P_2 = a_{21}X_1 + a_{22}X_2 + \cdots + a_{2k}X_k$$

$$\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots$$

$$P_k = a_{k1}X_1 + a_{k2}X_2 + \cdots + a_{kk}X_k \qquad (3.12)$$

The a's, called factor loadings, are chosen so that the constructed principal components satisfy two conditions: (a). the principal components are uncorrelated (orthogonal), and (b). the first principal component P_1 absorbs and accounts for the maximum possible proportion of the total variation in the set of all X's, the second principal component absorbs the maximum of the remaining variation in the X's and so on. (Koutsoyiannis, 1973, Kothari, 2004). The method of Principal Component Analysis has also been used to estimate the demand function of life insurance in previous studies (Sliwinski et al., 2012; Zimmer et al., 2009; Bhatia et al., 2021).

As explained earlier, the factors chosen for the study for those that occurred in most of the previously discussed studies. The enumerated set of eleven variables and the communalities are shown in Table 3.13 and 3.14.

Table 3.13: Variables chosen for investigation using PCA

Symbol	Chosen variables
X1	Consumer Price Index
X2	Dependency ratio
X3	Financial Assets of the Household Sector
X4	Financial, Real Estate & Professional Services
X5	Gross Domestic Product
X6	Gross Domestic Saving
X7	Gross National Income
X8	Real interest rate
X9	Per Capita Income
X10	Population
X11	Life Expectancy
Y	Total insurance premium

Table 3.14: Communalities estimated using PCA

Variables	Communalities
X1- Consumer Price Index	0.989
X2- Dependency ratio	0.998
X3- Financial Assets of the Household Sector	0.987
X4- Financial, Real Estate & Professional Services	0.997
X5- Gross Domestic Product	0.998
X6- Gross Domestic Saving	0.999
X7- Gross National Income	0.998
X8- Real interest rate	0.999
X9- Per Capita Income	0.999
X10- Population	0.999
X11- Life Expectancy	0.998

Source: Computed

The data was tested using both Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett Test of Sphericity, the results of which was 0.79 and 0.00 respectively, which confirmed the adequacy of the dataset for use in PCA. The communalities show how much of each variable is accounted for by the underlying factors taken together. A high value of communality indicates that not much of the variable is left over after whatever the other factors represent is taken into consideration. Table 3.14 shows that the variables have very high communalities and hence, much of one factor can be represented by another factor. With this information, the Eigen values and factor loadings can now be calculated. As

mentioned earlier, the factor loadings are orthogonal, the first principal component P_1 absorbs and accounts for the maximum possible proportion of the total variation in the set of all X's, the second principal component absorbs the maximum of the remaining variation in the X's and so on. The Eigen value or latent root indicates the relative importance of each factor in accounting for the set of variables. These values are shown in Table 3.15.

Table 3.15: Estimated Eigenvalues and Factor Loadings using PCA

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.732	88.47	88.47	9.73	88.47	88.47
2	0.883	8.03	96.5	0.88	8.03	96.5
3	0.347	3.16	99.65	0.35	3.16	99.65
4	0.019	0.17	99.82			
5	0.012	0.11	99.93			
6	0.005	0.04	99.97			
7	0.001	0.01	99.99			
8	0.001	0.01	99.99			
9	0.001	0.01	100			
10	1.26E-04	0	100			
11	2.26E-05	0	100			

Source: Computed

Table 3.15 shows that Component 1 (P_1) has an Eigen value higher than 1, at 9.732, and renders 88.47 per cent variation for the whole set. Therefore, many preliminary variables from Table 3.12 can be extracted in Component 1. The extraction sums of square loading show how the solution/ component accounts for what all the variables taken together represent. Then, Component 1 represents 88.47% of the variables considered. Further including Component 2 (P_2), the two components represent 96.5% of the variables under consideration. The variables associated with these components are derived using Table 3.16.

Based on the component matrix in Table 3.16, the variables closely associated with Component 1 are Gross Domestic Product, Gross National Income,

Gross Domestic Savings, Financial Assets of the Household Sector, Financial, Real Estate & Professional Services, Consumer Price Index, Per Capita Income, population and life expectancy i.e., nine of the eleven factors which were considered. Since the variables in Component 1 are closely related and can all be described as indicators of economic growth and development, Component 1 has been labelled as "Economic Growth" to represent these variables for the rest of the study. Meanwhile, real interest rate is closely associated with Component 2. The newly extracted variables are presented in Table 3.17.

Table 3.16: Component Matrix using PCA

Variables	Component	
	1	2
Consumer Price Index	0.9932	0.0527
Dependency ratio	-0.9732	0.0733
Financial Assets of the Household Sector	0.9784	0.0717
Financial, Real Estate & Professional Services	0.9906	0.0974
Gross Domestic Product	0.9789	0.1323
Gross Domestic Saving	0.9848	0.0844
Gross National Income	0.9781	0.1358
Real interest rate	-0.4185	0.8945
Per Capita Income	0.9982	0.044
Population	0.9472	-0.0978
Life Expectancy	0.9517	-0.0735

Source: Computed

Table 3.17: New extracted variables from Component Matrix

New extracted variable	Variables	Relationship
Component 1 (Economic growth)	Consumer Price Index	Positive
	Financial Assets of the Household Sector	Positive
	Financial, Real Estate & Professional Services	Positive
	Gross Domestic Product	Positive
	Gross Domestic Saving	Positive
	Gross National Income	Positive
	Per Capita Income	Positive
	Life expectancy	Positive
	Population	Positive
Component 2	Real interest rate	Positive

Source: Computed

Based on the sign of loading for each variable, the direction of relationship with the components are summarized in Table 3.17. It shows that each of the variables have a positive relationship with the components they are closely associated with. This indicates that an increase in one of the variables would lead to an increase in its principal component, for example, an increase in gross domestic product would also lead to an increase in Component 1 (Economic Growth). The newly extracted variables i.e., economic growth, real interest rate and dependency ratio, are now orthogonal. Then, the demand function of life insurance, which is free of multi-collinearity problem, can now be estimated using regression analysis. Since many of the new extracted data were negative values, the linear regression method is used instead of log linear regression. Linear regression was also commonly used in previous studies of demand for life insurance (Sliwinski et al., 2012). The estimated regression equation is presented as Equation (3.12):

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 \qquad (3.12)$$

where, Y= total premium, X_1= economic growth and X_2= real interest rate. The results of the regression analysis are presented in Table 3.18.

Table 3.18: Estimated Demand Function of Life Insurance Policy on Factors extracted from PCA

Dependent Variable: Life Insurance Policy Premium

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
Economic Growth	180580.1***	3052.151	59.165	0.000
Real Interest	6794.639	3052.152	2.226	0.215
C	147459.2***	3013.759	48.929	0.000
R-squared	0.984	Adjusted R-Squared		0.968

Source: Computed.

****significant at 1% level, **significant at 5%*

As seen in Table 3.18, the variables are highly significant with R-square value of 0.984 and adjusted R-squared value of 0.968. The coefficient of development indicator (Economic growth) is highly significant and has a strong and

statistically significant relationship with the demand for life insurance policies in India. This substantiates the findings in Section 3, i.e., that economic growth and life insurance are highly positively related. An increase in economic development indicators leads to an increase in the demand for life insurance policies, which, in turn, contributes to the growth of the insurance sector in India. Further, since the factor loadings all have a positive relation with Component 1 (Economic Growth), there is a positive correlation between life insurance and all the variables in Economic Growth. If there is an increase in any of the variables in Economic Growth, the demand for life insurance will also increase. Further, this finding implies that Consumer Price Index, one of the variables in Economic Growth, has a positive relationship with the demand for life insurance products. Then, life insurance demand also increases with the rise in cost of living and growth (Mathew & Sivaraman, 2017; Zerriaa et al., 2017).

The coefficient of Component 2 (real interest rate) is not significant to the demand for life insurance products. Then, contrary to prior studies that found a positive relationship between the real interest rate and the demand for life insurance products (Sliwinski et al., 2012; Zerriaa et al., 2017), the study did not find the real interest rate to be a significant factor in driving life insurance demand. In other words, fluctuations in interest rates do not play a significant role in influencing individuals' decisions to purchase life insurance policies.

The above analysis using Principal Component Analysis and linear regression reveal that the demand for life insurance products as represented by Total Premium, is positively related to the Gross Domestic Product (GDP), Per Capita Income (PCI), Financial Assets of Household Sector, Gross National Income, Gross Domestic Saving, Financial, Real Estate & Professional Services, Consumer Price Index (CPI), population and life expectancy of a country.

3.7. Conclusion

This chapter examined the growth and structural change of the life insurance sector from 1981 (pre-economic reform) to 2020 (post-economic reform), as indicated by total premium. The growth of both the public and private sector was highest in the decade after the economic reforms introduced in the form of liberalization, privatisation and globalisation. An analysis of the inter-state scenario showed that in many cases, the states with high growth rates of Gross State Domestic Product also had high growth rates of new business of life insurance, and vice versa. An empirical analysis of the relationship between life insurance consumption and gross domestic product revealed that the growth of life insurance sector and the economy are highly related with a lagged relationship.

Among the many factors that affect the demand for life insurance, the factors related to growth of the economy were highly correlated to each other. As such, it is difficult to analyse the demand using regression analysis. The initial analysis by dropping correlated variables revealed that per capita income highly determined the demand for life insurance products. Further, in consideration of all the factors using Principal Component Analysis clearly showed that factors related to economic growth are significant determinants of life insurance demand. Thus, the demand for life insurance products as represented by Total Premium, is positively influenced by Gross Domestic Product (GDP), Per Capita Income (PCI), Financial Assets of Household Sector, Gross National Income, Gross Domestic Saving, Financial, Real Estate & Professional Services, Consumer Price Index (CPI), population and life expectancy of a country.

CHAPTER 4

HOLDING PATTERNS OF LIFE INSURANCE POLICIES IN NORTH-EAST INDIA

4.1. Introduction

As elaborated in Chapter 2, much of the research on the life insurance market in India is descriptive and empirical studies are mainly concerned with the socio-economic factors that influence the demand for insurance (Sinha, 2007; Kakar & Shukla, 2010). The studies on the life insurance market in India have not covered North-East India. With the region being geographically isolated, culturally diverse and economically challenged in many areas, it is of interest to study the profile of the policyholders and examine holding patterns and significant factors to the demand of life insurance policies. In addition to the holding patterns of policyholders, the study also examines different aspects of life insurance ownership, including how policyholders buy policies, why they bought the policies, their buying behaviour, their opinions and perception of their policy and the life insurance market, as well as cases of policy lapsation. It is the objective of the study to understand the patterns of ownership and provide a holistic view of the life insurance market in North-East India.

Primary data was collected using a questionnaire composed of different sections concerned with demographic details, how and why life insurance policy was purchased, details of policy, purchase behaviour, psychographic construct, behavioral biases associated with purchase behaviour and the respondent's perception and experience with their life insurance policy. Responses were collected in blended mode (the facilitator started collecting data offline and continued through online and offline mode after estimation of sample size). The respondents for data collection were identified through networks of life insurance agents and customers visiting LIC offices in Aizawl, Meghalaya and Guwahati. There was a total of 335 respondents and 401 life insurance policies, as some respondents owned multiple policies.

In addition to the questionnaire, veteran life insurance agents and managers were interviewed in person using a semi-structured interview schedule to gauge their opinions and experiences with the life insurance industry in the North-East states. LIC sells insurance through a large network of LIC agents and given the inability to understand the complexities of the insurance products, consumers often place a significant amount of trust in their agents. Agents have a lot of influence in the decision-making process as they guide clients not only in the choice of insurance policy but also the amount of insurance they should purchase. Chapter 4 presents the analysis of policyholders' socio-economic profiles, policy holding patterns, buying behaviour and a descriptive analysis of life insurance agents' roles and perspectives on the market in North-East India.

4.2. Basic Profile of Policyholders

Many Indian households do not effectively plan their financial future due to lack of access to formal financial markets and low levels of financial literacy (Giri, 2018). With an increasing emphasis by the government towards greater financial inclusion in all sections of society, it is important to understand the socio-economic and demographic aspects of households which affect their decisions to acquire life insurance coverage and the purchase decisions they make. Based on previous findings, the indicators included in the questionnaire were age, sex, marital and family status, education, income and employment status of the policyholders. Since the policyholders were chosen at random, it is assumed to be representative of the population in the North-East.

4.2.1 Age and sex of policyholders

Life insurance and age are intricately linked as the age of the policyholder directly impacts the premium amount paid towards a policy. As age increases, the risk of developing health conditions also increases, thereby increasing the premium amount for a policyholder. The maximum age to purchase life insurance plans is 65

in India, and the study divides policyholders into 6 age groups. The age and sex composition of the policyholders is given in Table 4.1.

Table 4.1: Age and sex of policyholders

	No. of policyholders			Percentage		
Age	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Under 18 years	5	2	7	2.87	1.24	2.09
18-24 years	14	36	50	8.05	22.36	14.93
25-34 years	66	53	119	37.93	32.92	35.52
35-44 years	42	41	83	24.14	25.47	24.78
45-60 years	38	26	64	21.84	16.15	19.10
Above 60 years	9	3	12	5.17	1.86	3.58
Total	**174**	**161**	**335**	**100**	**100**	**100**

Source: Computed

There are 174 male policyholders (51.94%) and 161 female policyholders (48.06%), and there are no clear distinctions in policy ownership between men and women. Taking a closer look at gender differences in age groups, the largest differences were the categories- Under 18 years and Above 60 years. Among policyholders under 18 years and above 60 years, male policyholders account for 71% and 75% respectively, and between 18-24 years, female policyholders accounted for 72% of the policyholders. There were similar holding patterns among the other age categories.

The majority of policyholders are in the working age group of 25-60 years, accounting for 79.4% of the respondents and the biggest contributors among the working age group were between 25 to 34 years old (35.52%). This indicates that the working age group is more inclined to purchase life insurance, as found in previous literature. The demand for life insurance increases as individuals age and start families and decreases when they decline in age. This implies that demand for life insurance and policyholders are related non-linearly (Chen et al., 2001; Frees & Sun, 2010; Luciano et al., 2016; Sauter, 2014). This can also be observed in the study, as ownership is relatively lower in the age groups including younger people up to 24 years and older people above 45 years.

4.2.2. Marital and family status

Considering the collectivistic nature and family structure of Indian society, dynamics such as number of family members, marital status, presence of dependents, etc. may influence ownership of life insurance policy. These details are presented and discussed in the Table 4.2.

Table 4.2: Family size

No. of family members	Frequency	Percent
Upto 3 members	59	17.6
4-5 members	172	51.3
6-7 members	80	23.9
8 or more members	24	7.2
Total	**335**	**100**
Average family size: 2.25		**SD: 0.81**

Source: Computed

Table 4.2 shows that half (51.3%) of the policyholders have 4-5 family members, indicating that many are from nuclear families with two or three children. Singh and Lall (2011) also conducted a study in Uttar Pradesh and found that the 4-6 family size have maximum number of insurance policies as compared to other family sizes. Moreover, almost two-thirds (68.9%) have less than 6 family members. With the average size of policyholders' family being 2.25, it is observed that there are less policyholders as the number of family members increase. For further details on the family structure, Table 4.3 shows the marital and family status of the respondents.

Table 4.3: Marital and family status

Family status	Frequency	Percent
Single without dependents	92	27.5
Single with dependents	80	23.9
Married without children	16	4.8
Married with dependent children	136	40.6
Married with independent children	11	3.3
Total	**335**	**100.0**

Source: Computed

The largest group of policyholders (40.6%) are married with dependent children, and 64.5% of the respondents, single or married, have dependents. The demand for coverage is likely to increase with the presence of dependents; married people with dependent children will often purchase a life insurance policy to cover the uncertain risk of their premature death and leave some amount of financial security to their spouse or children (Bhatia et al., 2021). Additionally, the second largest group of policyholders were single without dependents, who accounted for 27.5%. For single people with no current dependents, purchasing life insurance policy is likely to be driven by saving or investment motives rather than life coverage alone. Mahdzan and Victorian (2013) also found that single individuals have a higher probability of purchasing life insurance as they have less financial expenditure and can spare more than married individuals.

Table 4.4: Number of dependents

No. of dependents	Frequency	Percent
1 dependent	99	29.6
2-3 dependents	167	49.9
4-5 dependents	65	19.4
6 or more dependents	4	1.2
Total	**335**	**100.0**
Average number of dependents: 2.38		**SD: 1.42**

Source: Computed

Table 4.4 further examines the number of dependents in each respondent's household, and shows that a huge majority, i.e., 79.5% of the respondents have families with less than 4 dependents. About half of the policyholders have 2 or 3 dependents, supplementing the results of Table 4.2 and 4.3. The average number of dependents is 2.38, and the ownership of life insurance and number of dependents are inversely related for the respondents. Only 1.2% of the policyholders have 6 or more dependents. The existing literature has also found that the presence of dependents has a significantly positive effect on life insurance (Brighetti et al., 2014) and premiums sold by insurance companies per capita (Li et al., 2007). From the information collected about family status, it can be observed that policyholders are

more likely to have dependents and majority of the policyholders have less than 6 family members and less than 4 dependents, whether or not the policyholders are married.

4.2.3 Education of policyholders

Education has often been considered as an important indicator of insurance awareness and ownership. Table 4.5 shows the different education levels of the respondents from under-matriculate (Below Class 10) to graduate and above (including professional or equivalent degrees).

Table 4.5: Education of policyholders

Education status	Frequency	Percent
Under matriculate	18	5.4
Matriculate	20	6.0
Higher secondary (including diploma)	38	11.3
Graduate and above (including professional degree)	259	77.3
Total	**335**	**100.0**
		SD 0.83

Source: Computed

A large majority of the respondents (77.3%) belong to the "Graduate and above" category, implying that insurance ownership is affected by education level. The higher the education level, higher is the purchase of life insurance. Higher education can impact awareness and understanding of life insurance, and consequently results in higher consumption. Studies conducted by Kakar and Shukla (2010), Mahdzan and Victorian (2013) and Zerriaa and Noubbigh (2016) have identified that consumers with higher education levels have a better understanding of risk management, greater information regarding the benefits of life insurance and hence are expected to have higher probability of acquiring life insurance.

4.2.4. Income and employment of policyholders

To explore the effect of income on life insurance consumption, the monthly household income of policyholders is given in Table 4.6.

Table 4.6: Monthly household income of policyholders

Monthly household income	Frequency	Percent
Less than Rs.10,000	2	.6
Rs.10,000-Rs.25,000	50	14.9
Rs.25,001-Rs.50,000	91	27.2
Rs.50,001-Rs.1,00,000	91	27.2
Rs.1,00,001-Rs.2,00,000	64	19.1
More than Rs.2,00,000	37	11.0
Total	**335**	**100.0**
		SD: 1.24

Source: Computed

Only 15.5% of the policyholders have income below Rs. 25,000 and 84.5% of the policyholders have monthly household income above Rs.25,000. More than half (54.4%) have a monthly household income between Rs. 25,001 and Rs. 1,00,000. However, ownership decreases after this range as 30.1% have monthly household income above Rs. 1,00,000. After a certain point, i.e., after Rs.1,00,000, the policyholders with higher income do not necessarily buy more life insurance, indicating that consumption does not increase with increase in income. Shi et al. (2015) found that income factor has a hump-shaped effect on demand for life insurance policy as the demand increases in a curvilinear fashion up to a particular income and then starts decreasing. Table 4.7 shows the employment status of the policyholders.

Table 4.7: Employment status of policyholders

Employment status	Frequency	Percent
Student	32	9.6
Not in the labour force	1	.3
Looking for work	6	1.8
Homemaker	9	2.7
Employed (salaried)	180	53.7
Self-employed (business/ freelance/others)	87	26.0
Part time/ casual employment	10	3.0
Retired	10	3.0
Total	**335**	**100.0**

Source: Computed

Half of the policyholders (53.7%) are salaried employees and 26% of the policyholders are self-employed, making up a large majority (79.9%). The security that comes with regular income could be a major factor that affects life insurance ownership, and the ownership by a large number of salaried employees is also explored with reference to the insurance agent's perspective. In interviews with veteran agents from LIC, it was revealed that there may be two big reasons for ownership being relatively high for salaried employees. Salaried employees have regular income which makes a big difference in paying premiums regularly, and many agents had found that it was often difficult for casual or self-employed individuals to pay premiums. Moreover, there was a conscious effort from the life insurance agents in Mizoram and Meghalaya to sell to salaried employees, as this cohort is identified as the main target demographic. This is explored in Section 4.9 in further detail. Kakar and Shukla (2010) also found significantly high participation of salaried and self-employed households in life insurance ownership.

4.3. Ownership of Life Insurance Policies

The questionnaire asked respondents to provide details such as the number of policies owned, who it was purchased for, type of policy and details of the policy. The study covers 335 policyholders and 401 policies, as some respondents owned multiple policies. Table 4.8 shows the number of policies owned by each of the respondents.

Table 4.8: Number of policies owned by policyholders

Number of policies	Frequency	Percent
1	278	83.0
2	49	14.6
3	7	2.1
5	1	.3
Total	**335**	**100.0**

Source: Computed

From the samples taken, a large majority (83%) have one policy, 14.6% have 2 policies, 2.1% have 3 policies and 0.3%, i.e., one person has 5 policies. It is clear that the majority of people choose one kind of insurance policy that suits their needs, further establishing the importance of choice and purchase decision when picking a policy.

Table 4.9: Types of policies owned by policyholders

Policy type	Frequency	Percent
Term policy	87	21.7
Whole life policy	11	2.7
Endowment policy	108	26.9
Moneyback policy	121	30.2
Unit linked insurance policy	50	12.5
Pension policy	17	4.2
Group policy	2	.5
Do not know	5	1.2
Total	**401**	**100.0**

Source: Computed

Table 4.9 shows that moneyback policies are the most commonly owned policy, accounting for 30.2% of the 401 policies. This is followed by endowment policies (26.9%), term policies (21.7%) and Unit linked or ULIP policies (12.5%). These four categories together account for 91.3% of the policies. Since moneyback and endowment policies account for a majority (57.1%) of the policies, it can be observed that the majority of policyholders choose saving and investment-oriented policies rather than just life coverage.

Life insurance policies are often taken not just for oneself but for dependents as well. Table 4.10 shows who the policy was bought for, whether they are paying for dependents or themselves or both.

Table 4.10: Ownership of policy

	No. of policyholders			Percentage	
Policy Type	**Self**	**Dependent**	**Total**	**Self**	**Dependent**
Term policy	85	2	87	97.70	2.30
Whole life policy	10	1	11	90.91	9.09
Endowment policy	101	7	108	93.52	6.48
Moneyback policy	115	6	121	95.04	4.96
Unit linked insurance policy	49	1	50	98.00	2.00
Pension policy	15	2	17	88.24	11.76
Group policy	2	0	2	100.00	0.00
Do not know	5	0	5	100.00	0.00
Total	**382**	**19**	**401**	**95.26**	**4.74**

Source: Computed

Of the 401 policies, 382 policies (95.26%) were bought for the respondents themselves and only 19 policies (4.74%) were bought for dependents. The highest number of policies bought for dependents are pension policies (11.7%), followed by whole life policies (9.09%) and endowment policies (6.48%).

4.4. Particulars of Life Insurance Policies

Since life insurance is a long-term financial planning tool, the duration of the policies is also examined. Table 4.11 shows the different policy durations ranging from below 10 years to above 30 years.

Table 4.11: Duration of policies

Policy Type	Duration of policy					
	Below 10 years	**10-15 years**	**15-20 years**	**20-30 years**	**30 years and more**	**Total**
Term policy	29	24	13	10	11	87
	(33.33)	*(27.59)*	*(14.94)*	*(11.49)*	*(12.64)*	*(100)*
Whole life policy	1	1	2	2	5	11
	(9.09)	*(9.09)*	*(18.18)*	*(18.18)*	*(45.45)*	*(100)*
Endowment policy	15	37	17	35	4	108
	(13.89)	*(34.26)*	*(15.74)*	*(32.41)*	*(3.70)*	*(100)*
Moneyback policy	20	30	51	20	0	121
	(16.53)	*(24.79)*	*(42.15)*	*(16.53)*		*(100)*
ULIP	34	15	1	0	0	50
	(68.00)	*(30.00)*	*(2.00)*			*(100)*
Pension policy	3	0	3	8	3	17
	(17.65)		*(17.65)*	*(47.06)*	*(17.65)*	*(100)*
Group policy	1	0	1	0	0	2
	(50.00)		*(50.00)*			*(100)*
Do not know	0	3	2	0	0	5
		(60.00)	*(40.00)*			*(100)*
Total	**103**	**110**	**90**	**75**	**23**	**401**
	(25.69)	***(27.43)***	***(22.44)***	***(18.70)***	***(5.74)***	***(100)***

Source: Computed

**Figures in parenthesis show percentage*

Half of the policies (53.11%) are under 15 years, and the number of policies decreases as the duration increases. There are four types of policies whose duration is 30 years and more- 11 term policies, 5 whole life policies and 4 endowment policies. It is clear that whole life and pension plans are taken for a longer duration than other policies, both usually spanning decades. It can also be understood that some term policies are taken for longer durations, as the main use of term policies is risk coverage in case of untimely death.

The premium for a life insurance policy may be paid in different intervals and different amounts depending on the type of policy, duration of policy, sum assured, etc. the policyholder chooses. Policyholders pay their premiums monthly, quarterly, or annually as per their decision at the time of purchase. But for uniformity in calculation, the premium payments have been presented annually for all policyholders. Table 4.12 shows the distribution of premium paid by the respondents annually.

Table 4.12: Distribution of annual premium paid by policyholders

Policy type	Frequency	Minimum	Maximum	Mean	Std. Deviation
Term policy	87	700	700000	86314.01	134928.27
Whole life policy	11	350	300000	57735.13	88266.77
Endowment policy	108	1920	350000	36041.42	43386.32
Moneyback policy	121	3240	3000000	66109.58	280193.63
Unit linked insurance policy	50	10000	1000000	110340.00	153357.21
Pension policy	17	12000	144000	36339.53	37713.17
Group policy	2	200	12000	6100.00	8343.86
Do not know	5	6248	28520	18400.80	9847.76
Total	**401**	**200**	**3000000**	**65523.97**	**178233.69**

Source: Computed

As observed, there is a big range for the premium amount even for the same kind of policy, reflected in the large standard deviation. Theoretically, the standard deviation (SD) increases with increase in range and can exceed the mean to a large extent. The standard deviation is lowest for group policies and highest for moneyback policies. The average annual premium paid by the policyholders is Rs.65523.97, with a minimum of Rs.200 and a maximum of Rs.3000000. The average annual premium is notably highest for ULIP policies (Rs.110340), followed by term policies (Rs.86314.01) and moneyback policies (Rs.66109.58). The annual premium for group policies is relatively low compared to the other policies at Rs.6100. Group life insurance policies are common in workplaces and are typically cheaper because they cover a large number of people at once, and premiums are usually fixed and not dependent on the individual's age, health or lifestyle (Bastien,

2003). Further exploring the premium amount by policy type, Table 4.13 shows the different ranges of annual premium paid for each policy.

Table 4.13: Annual premium for different policies

Policy type	Annual premium					
	Less than Rs.10,000	**Rs.10,000-Rs.50,000**	**Rs.50,000-Rs.1,00,000**	**Rs.1,00,000-Rs.5,00,000**	**Above Rs.5,00,000**	**Total**
Term policy	10	45	16	14	2	87
	(11.49)	*(51.72)*	*(18.39)*	*(16.09)*	*(2.30)*	*(100)*
Whole life policy	5	3	2	1	0	11
	(45.45)	*(27.27)*	*(18.18)*	*(9.09)*		*(100)*
Endowment policy	15	74	14	5	0	108
	(13.89)	*(68.52)*	*(12.96)*	*(4.63)*		*(100)*
Moneyback policy	14	83	16	5	3	121
	(11.57)	*(68.60)*	*(13.22)*	*(4.13)*	*(2.48)*	*(1000*
ULIP	1	28	5	15	1	50
	(2.00)	*(56.00)*	*(10.00)*	*(30.00)*	*(2.00)*	*(100)*
Pension policy	0	14	1	2	0	17
		(82.35)	*(5.88)*	*(11.76)*		*(100)*
Group policy	1	1	0	0	0	2
	(50.00)	*(50.00)*				*(100)*
Do not know	1	4	0	0	0	5
	(20.00)	*(80.00)*				*(100)*
Total	**47**	**252**	**54**	**42**	**6**	**401**
	(11.72)	***(62.84)***	***(13.47)***	***(10.47)***	***(1.50)***	***(100)***

Source: Computed

**Figures in parenthesis show percentage*

Table 4.13 shows that a majority of the policyholders (62.84%) pay an annual premium between Rs.10,000 and Rs.50,000. Moreover, 74.56% of policyholders pay an annual premium below Rs.50,000 which is around Rs. 800- Rs. 4000 on a monthly basis.

Table 4.14: Sum assured for policyholders

Policy type	Frequency	Minimum	Maximum	Mean	Std. Deviation
Term policy	87	75000	10000000	2652816.09	2834885.53
Whole life policy	11	200000	7000000	1309090.91	2055063.04
Endowment policy	108	50000	5500000	637855.56	757801.35
Moneyback policy	121	10000	15000000	954833.26	1878823.46
ULIP	50	100000	10000000	1281600.00	1560124.75
Pension policy	17	200000	50000000	4688235.29	12005409.32
Group policy	2	200000	400000	300000.00	141421.36
Do not know	5	100000	2400000	1340000.00	1134900.88
Total	**401**	**10000**	**50000000**	**1448125.25**	**3185244.65**

Source: Computed

**Figures in parenthesis show percentage*

As defined by IRDAI, sum assured is the guaranteed amount of the benefit that is payable on the death of the insured under a policy. The sum assured for policies falls within a wide range again as reflected in the standard deviation, as it may depend on the type of policy, duration, etc. The minimum sum assured is Rs. 10000 for a moneyback policy and the maximum sum assured is Rs.50000000 for a pension policy. The range is widest for pension policies and moneyback policies, and smallest for group policies. The average sum assured for the policyholders across the different policies is Rs.1448125.25, and the average sum assured is highest for pension policies at Rs.4688235.29 followed by term policies at Rs. 2652816.09. The lowest average sum assured is for group policies at Rs.300000, followed by endowment policies at Rs.637855.56.

Table 4.15: Sum assured for different policy types

Policy type	Sum assured				
	Below 2.5 lakhs	**2.5-5 lakhs**	**5-10 lakhs**	**Above 10 lakhs**	**Total**
Term policy	12	18	13	44	87
	(13.79)	*(20.69)*	*(14.94)*	*(50.57)*	*(100)*
Whole life policy	3	3	3	2	11
	(27.27)	*(27.27)*	*(27.00)*	*(18.18)*	*100*
Endowment policy	34	41	20	13	108
	(31.48)	*(37.96)*	*(18.52)*	*(12.04)*	*(100)*
Moneyback policy	45	39	22	15	121
	(37.19)	*(32.23)*	*(18.18)*	*(12.40)*	*(100)*
ULIP	1	22	5	22	50
	(2.00)	*(44.00)*	*(10.00)*	*(44.00)*	*(100)*
Pension policy	3	5	3	6	17
	(17.65)	*(29.41)*	*(17.65)*	*(35.29)*	*(100)*
Group policy	1	1	0	0	2
	(50.00)	*(50.00)*			*(100)*
Do not know	2	0	0	3	5
	(40.00)			*(60.00)*	*(100)*
Total	**101**	**129**	**66**	**105**	**401**
	(25.19)	***(32.17)***	***(16.46)***	***(26.18)***	***(100)***

Source: Computed

**Figures in parenthesis show percentage*

Further exploring the sum assured of different policies, Table 4.15 shows that 32.17% of the policyholders have sum assured between Rs. 2.5- Rs. 5 lakhs. Looking across policies, 57.36% have policies with sum assured amount less than Rs.5 lakhs. Term policies and ULIP policies accounted for 62.85% of the policies with the largest sum assured (Above 10 lakhs). It is interesting to note that term policies are the only type of policy with the majority of policies (50.57%) in the last category with the highest sum assured. This can be attributed to the nature of term policies, as they provide pure life cover and death benefit to the insured's family, and there is a higher sum assured when compared to other policies intended as saving or investment instruments.

4.5. Purchase of Life Insurance Policies

Since the purchase decision can be based on a number of factors, the policyholders were asked how they came to purchase a life insurance policy. This is also to distinguish if policyholders were proactive, if they bought a policy due to convenience or were influenced by other people such as family, friends or sales agents.

Table 4.16: How policyholders purchase life insurance policy

How purchase was made	Frequency	Percent
Because I actively looked for a policy myself	74	22.1
Because it was offered by bank/ workplace	38	11.3
Because it was recommended by family/ friends	86	25.7
Because it was sold by someone I know personally	42	12.5
Because I was approached by an insurance agent	95	28.4
Total	**335**	**100.0**

Source: Computed

As shown in Table 4.16, 22.1% purchased a policy because they actively looked for one themselves. They made a proactive decision to buy a life insurance policy, and the purchase decision was made without external pressures such as life insurance agents or family. Moreover, the decision is not made due to the convenience of life insurance policies being offered by banks or workplaces, but because the consumers themselves looked for the products. 11.3% of policyholders bought a policy because it was offered by their banks or workplaces, and 25.7% bought a policy because it was recommended by family/ friends. Interestingly, 40.9% of policyholders purchased a policy because of the influence of insurance agents, i.e., 28.4% bought a policy because they were approached by an agent who convinced them to take a policy and 12.5% bought a policy because they knew the agent personally. This itself shows the importance and influence of agents, as their work contributes to large amount of life insurance consumption. It also reveals that many policyholders may be susceptible to mis-selling by agents.

We further examine the purchase decision according to employment status. As discussed in Table 4.7, more than half of the policyholders are salaried employees. Among these 180 salaried employees, 83 of them (46.11%) bought a life insurance policy due to the influence of agents, i.e., 33.33% bought a policy because they were approached by an agent and 12.77% bought a policy because they knew the agent personally. This corroborates the findings discussed in Section 4.2.4 and Section 4.10.1, as salaried employees are the main target demographic for life insurance agents due to regularity of income. Then, for the biggest category of policyholders, the influence of life insurance agents is highly significant to their purchase decision. As for the 87 self-employed policyholders, 34 (39.08%) bought a policy due to the influence of agents, i.e., 12.64% bought a policy because it was sold by someone they knew personally and 26.44% bought a policy because they were approached by an agent. Among the 32 students, the largest group (40.87%) bought a policy because it was recommended by family and friends, a clear indication of the influence of close circles especially when consumers are still students.

4.6. Policy Selection and Purchase Motivation

Further, to understand not just how the policies were purchased but why they were purchased, the respondents were also asked about their motivations. Various statements about the different reasons for purchasing life insurance were listed, and respondents were asked to score each motivator from 1-5, 1 being not important at all and 5 being very important. This is presented in the Table 4.17.

For more than three-fourths of the policyholders (79.1%), securing the future of their family in case of death was an important reason for buying life insurance. It is clear that for a majority of respondents, life coverage is a big motivator in itself. Considering saving as a reason to buy an insurance policy, there are two common reasons to save- for specific needs in the future such as education/ retirement or to cultivate a habit of saving to avoid reckless spending or spending money all at once. Almost three-fourths of the policyholders, 73.14%, said that saving for a specific

purpose was an important reason for buying a policy and more than half (58.51%) said saving to avoid reckless spending was an important reason for buying a policy. This indicates that life insurance as a saving instrument is an important consideration for a majority of policyholders. Additionally, for 47.46% of the policyholders, using life insurance as an investment tool for wealth creation was an important motivator for buying a policy. It is clear that the use of life insurance policies as saving or investment tools is significant to a substantial portion of policyholders.

Table 4.17: Motivation for purchase of life insurance

Motivation for purchase	Not important at all	Slightly important	Moderately important	Important	Very important
To secure the future of my family in case of death.	7 *(2.09)*	16 *(4.78)*	47 *(14.03)*	86 *(25.67)*	179 *(53.43)*
To save for future needs like children's education/ retirement.	36 *(10.75)*	16 *(4.78)*	38 *(11.34)*	81 *(24.18)*	164 *(48.96)*
To save some amount regularly to avoid reckless spending.	31 *(9.25)*	36 *(10.75)*	72 *(21.49)*	88 *(26.27)*	108 *(32.24)*
To use as an investment tool for wealth creation.	48 *(14.33)*	59 *(17.61)*	69 *(20.60)*	65 *(19.40)*	94 *(28.06)*
To get some other loans/services.	144 *(42.99)*	78 *(23.28)*	50 *(14.93)*	38 *(11.34)*	25 *(7.46)*
To save income tax.	129 *(38.51)*	66 *(19.70)*	74 *(22.09)*	39 *(11.64)*	27 *(8.06)*
Because I was convinced by the agent.	75 *(22.39)*	72 *(21.49)*	77 *(22.99)*	62 *(18.51)*	49 *(14.63)*
Because I knew the agent personally.	113 *(33.73)*	67 *(20.00)*	67 *(20.00)*	53 *(15.82)*	35 *(10.45)*

Source: Computed

** Figures in parenthesis show percentage*

Life insurance policies are also purchased not only when customers want a policy, but due to external factors such as tax-saving incentives, to get approval for loans, or due to the influence of agents who convince unknown individuals or people from their own lives to buy a policy. Among the respondents, only 18.8% considered getting loans/ other services as an important reason to buy a policy, and 19.7% said that saving income tax was an important reason for buying a policy. The role of agents in distributing life insurance is also significant for more than one-fourth of all

the respondents; being convinced by the agent was an important reason for 33.14% and for 26.27% of the respondents, it was important that the policy was being sold by someone they knew personally.

The purchase motivation of a consumer, i.e., the reason why a person chooses to purchase a life insurance policy is an important aspect of the consumption process. The expected returns of the consumers are the expectations associated with the purchase of a specific policy, and the expected returns are the fulfilled purchase motivations. If policyholders get their expected return, it can be said that they chose the right policy to fulfil their motivations, i.e., they acted rationally and optimized their decision-making processes. Rational individuals are expected to maximise their utility, which in the case of this study, is choosing a policy based on the requirements of the policyholder. Thus, people are expected to take term policies or whole life policies if they are only interested in risk mitigation by securing the future of their family. People using life insurance as a mean of saving for future need or as a means of regular saving are expected to buy endowment and multiple life insurance policies in order to achieve their future financial goals. Those using life insurance as an instrument for investment are expected to take moneyback or ULIP policies. However, since it is theorized that consumers make decisions under bounded rationality, policyholders may make different choices and deviate from their purchase motivations.

The study uses binary logistic regression equation to examine if the purchase motivation of the policyholders align with the intended purposes of different policy types. Logistic regression models are frequently used to predict a dependent variable from a set of independent variables. Binary logistic regression or the logistic model analyzes the relationship between multiple independent variables and a categorical dependent variable, and estimates the probability of occurrence of an event by fitting data to a logistic curve. The logistic regression coefficient for the ith independent variable shows the change in the predicted log odds of having an outcome for one unit change in the ith independent variable, all other things being equal.

Logistic regression with multiple predictors is given by,

$$logit\,(Y) = ln\left(\frac{P(Y=1)}{1-P(Y=1)}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n \qquad (4.1)$$

which can be transformed into,

$$p = \frac{e^{\beta_0+\beta_1 X_1+\beta_2 X_2+\cdots+\beta_n X_n}}{1+e^{\beta_0+\beta_1 X_1+\beta_2 X_2+\cdots+\beta_n X_n}} = \frac{1}{1+e^{-(\beta_0+\beta_1 X_1+\beta_2 X_2+\cdots+\beta_n X_n)}} \qquad (4.2)$$

Since logistic regression calculates the probability of an event occurring over the probability of an event not occurring, the impact of independent variables is explained in terms of odds. This model predicts the log Odds of Y as a function of X_1, X_2, … X_n. The Odds Ratio (OR) represents the odds that an outcome will occur given a particular exposure, compared to the odds of the outcome occurring in the absence of that exposure. The exponential function of the regression coefficients, $e^{\beta' s}$, is called the Odds Ratios (OR), and is associated with a one unit increase in the independent variable such that OR=1 indicates that the exposure does not affect odds of outcome, OR>1 indicates that exposure associated with higher odds of outcome, and OR<1 indicates exposures associated with lower odds of outcome (Park, 2013). Thus, the study uses binary logistic regression to estimate the probabilty of selecting a particular type of policy based on the purchase motivations, which are measured on a 5-point Likert scale. The dependent variables (type of policy) are coded as binaries, i.e., term policy is a binary variable which takes a value of 1 if the respondent owns a term life insurance 0 otherwise, whole life is a binary variable which takes the value of 1 if a respondent owns a whole life policy and 0 otherwise, etc.

The study also includes various model evaluation tests to assess the overall model and goodness-of fit. The Likelihood Ratio reflects the improvement of the full model over the intercept model such that smaller ratios indicate greater improvement. The Hosmer–Lemeshow test is to examine whether the observed events are similar to the predicted probabilities of occurrence in subgroups of the

model population, wherein p-values closer to 1 indicate a good fit to the data and a good overall model fit, and p-values less tha 0.05 indicate a poor fit to the data. Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) are statistical measures used to select models that predict binary outcomes, and are used to choose the best model in logistic regression. Two values of pseudo R-squared, i.e., Cox and Snell's R^2 and Nagelkerke's R^2, are also included to assess the predictive strength of the logistic regression model. Cox and Snell's R^2 is based on the log likelihood for the model compared to the log likelihood for a baseline model and has a theoretical maximum value of less than 1, while Nagelkerke's R^2 is an adjusted version of the Cox & Snell R^2 that adjusts the scale of the statistic to cover the full range from 0 to 1.

Table 4.18: Estimated Logistic Regression of term and whole life policies on purchase motivations

	Term policy			Whole life policy		
Purchase motivation	β	**Sig.**	**OR**	β	**Sig.**	**OR**
1. To secure the future of my family in case of death.	0.230*	0.100	1.258	0.265	0.534	1.304
2. To save for future needs like children's education/ retirement.	-0.190	0.112	0.827	-0.031	0.932	0.970
3. To save some amount regularly to avoid reckless spending.	-0.248*	0.070	0.780	0.188	0.598	1.207
4. To use as an investment tool for wealth creation.	-0.117	0.324	0.889	0.007	0.981	1.007
5. To get some other loans/services.	-0.225*	0.092	0.799	0.188	0.552	1.206
6. To save income tax.	0.364**	0.001	1.439	0.147	0.606	1.158
7. Because i was convinced by the agent.	0.043	0.732	1.044	-0.542	0.168	0.582
8. Because i knew the agent personally.	0.088	0.520	1.092	0.036	0.922	1.037
Constant	-1.029	0.118	0.357	-4.824**	0.018	0.008

Model evaluation	**Chi-square**	**Sig**	**Chi-square**	**Sig**
Likelihood Ratio test	72.927***	.000	23.990	0.845

Hosmer and Lemeshow Test	8.823	.357		7.949	0.438

Source: Computed

****significant at 1%, **significant at 5% level, *significant at 10%*

Table 4.18 shows the estimated logistic regression of purchase motivations on term and whole life policies. It is observed that saving on income tax (p=0.001), cultivating saving habits (p=0.07), getting loans and services (p=0.092) and risk mitigation through security (p=0.10) are significant predictors for ownership of term policies. The Likelihood Ratio test shows that our model with independent variables is more effective than the null model, and the Hosmer-Lemeshow test statistic 8.82 is significant (p>.05), suggesting that the model fits well to the data. Looking at the significance of independent variables, people are most likely to take term policies for tax planning purposes, as the purchase of a term policy is significantly determined by a customer wanting to save on income tax. The Odd Ratio 1.439 indicates that the odds for selection of term policy increases 1.439 times when the tax-saving motive is increased by 1 unit, i.e., there are higher odds of selecting term policy with tax saving motivations. Under Section 80C of the Income Tax Act of 1961, life insurance premium tax deduction of Rs. 1.5 lakhs can be claimed from net taxable income on premiums paid towards all life insurance policies for self, children, or partners.

Term policyholders are less likely to select the policy to save regularly and avoid reckless spending and the OR (0.78) suggests that the odds for selection of a term policy decrease by 78% when there is a unit change in the Likert scale for regular saving motivations. People are also less likely to take term policies if they are motivated by the need for loans and/ or other services. Financial services such as loans often require insurance documents as part of the application process, and it is evident that these individuals do not opt for term policies. The odds of a policyholder

taking a term policy decreases by 0.799 when the motivation to get a policy for loans is increased by one unit.

The primary intended use of term policies, i.e., security for family in case of death, is a predictor of term policy selection at 10% level of significance. The OR (1.258) indicates that term policy selection has higher odds when the purchase motivation is security and risk mitigation. Thus, policyholders are more likely to choose term policies if they are motivated by tax saving and risk mitigation incentives and less likely to choose term policies if they are motivated by regular saving habits. Since term policy designed to fulfil risk-mitigation objectives and is not a saving or investment instrument, the predictors of term policy selection are indicative of the policyholder's rational decision-making as they chose a policy that rationally aligns with their purchase motivations. The model evaluation statistics for whole life policy show that although the model fits well to the data (Hosmer-Lemeshow $p>0.05$), the null model is more effective than the logistic model with selected independent variables. There are no significant predictors of whole life insurance policy among the selected purchase motivations.

Table 4.19: Estimated Logistic Regression of endowment and moneyback policies on purchase motivations

	Endowment policy			Moneyback policy		
Purchase motivation	β	**Sig.**	**OR**	β	**Sig.**	**OR**
1. To secure the future of my family in case of death.	-0.214*	0.095	0.807	-0.223*	0.073	0.800
2. To save for future needs like children's education/ retirement.	0.235*	0.051	1.264	0.177	0.125	1.193
3. To save some amount regularly to avoid reckless spending.	-0.027	0.827	0.973	0.071	0.558	1.074
4. To use as an investment tool for wealth creation.	-0.068	0.522	0.934	-0.101	0.327	0.904
5. To get some other loans/services.	0.069	0.556	1.071	-0.049	0.664	0.952
6. To save income tax.	0.044	0.670	1.045	0.187*	0.060	1.206
7. Because i was convinced by the agent.	-0.006	0.962	0.994	-0.072	0.537	0.931
8. Because i knew the agent personally.	-0.066	0.61	0.936	0.035	0.780	1.03

Constant	-0.791	7 0.188	0.454	-0.749	0.197	6 0.473

Model evaluation	Chi-square	Sig		Chi-square	Sig	
Likelihood Ratio test	33.402	.399		45.464*	0.058	
Hosmer and Lemeshow Test	22.090	.005		8.663	0.372	

Source: Computed

****significant at 1%, **significant at 5% level, *significant at 10%*

Table 4.19 shows the estimated logistic regression of purchase motivations on endowment and moneyback policies. It is observed that risk mitigation (p=0.095) and saving for future needs (p=0.051) are significant predictors of endowment policy selection. Endowment policies are designed as life coverage cum saving instruments, and saving for specific future needs such as children's education or retirement is the most significant variable affecting endowment policy selection. The OR (1.264) suggests that the odds of selecting an endowment policy increases 1.264 times when the specific saving motive is increased by 1 unit, i.e., there are higher odds of selecting endowment policy with specific saving intentions for the future. It is also observed that policyholders are less likely to select endowment policies if they have the motivation to secure life for risk mitigation. The OR indicates that the odds of selecting endowment policies decreases by 80.7% when there is a unit change in purchase motivation of securing the future of the family. It is interesting to note that although endowment policies are designed for life coverage and saving, people are more likely to select them for saving motives and less likely to select them for coverage.

The Likelihood Ratio test for moneyback policies suggests that our model with independent variables is more effective than the null model and the Hosmer and Lemeshow test (p=0.372) shows that the model is a good fit. The selection of moneyback policies is significantly determined by tax planning purposes (p=0.060) and life coverage for security of family (p=0.073). People are more likely to take

moneyback policies to save on income tax, and the odds of selecting a moneyback policy increases 1.206 times when the tax saving motive is increased by 1 unit. At the same time, people are less likely to take a moneyback policy if they are motivated by life coverage for security of the family. The OR (0.80) indicates that the odds of selecting a moneyback policy decreases by 80% if there is a unit change in the motive to secure life for the family in case of death. Since moneyback policies are designed for coverage and investment purposes, it is of note that investment motives are not significant predictors and coverage motives actually decrease the odds of selecting moneyback policies.

Table 4.20: Estimated Logistic Regression of ULIP and pension policies on purchase motivations

	ULIP policy			Pension policy		
Purchase motivation	β	**Sig.**	**OR**	β	**Sig.**	**OR**
1. To secure the future of my family in case of death.	0.510*	0.063	1.666	0.018	0.952	1.018
2. To save for future needs like children's education/ retirement.	-0.217	0.227	0.805	-0.298	0.237	0.742
3. To save some amount regularly to avoid reckless spending.	0.157	0.406	1.169	0.402	0.176	1.495
4. To use as an investment tool for wealth creation.	0.680***	0.000	1.974	-0.281	0.262	0.755
5. To get some other loans/services.	0.159	0.403	1.173	0.398	0.110	1.489
6. To save income tax.	-1.185***	0.000	0.306	-0.178	0.454	0.837
7. Because i was convinced by the agent.	0.100	0.571	1.105	0.132	0.615	1.141
8. Because i knew the agent personally.	-0.001	0.997	0.999	-0.278	0.336	0.757
Constant	-4.824***	0.000	0.008	-2.909	0.027*	0.055
Model evaluation	**Chi-square**	**Sig**		**Chi-square**	**Sig**	
Likelihood Ratio test	124.806***	.000		40.806	0.137	
Hosmer and Lemeshow Test	17.029	.030		17.290	0.027	

Source: Computed

****significant at 1%, **significant at 5% level, *significant at 10%*

Table 4.20 shows the estimated logistic regression of purchase motivations on ULIP and pension policies. The Likelihood Ratio test shows that the given logistic model with independent variables is more effective than the null model. The selection of ULIP policies is significantly determined by investment motive ($p<0.001$), tax planning motives ($p<0.001$) and life coverage ($p=0.063$). It is evident

from the results that people are more likely to take ULIP policies if they are motivated by investment purposes for wealth creation. The OR (1.974) indicated that there is a 1.974 increase in the odds of selecting a ULIP policy when policyholder's motive of investment for wealth creation increases by 1 unit. The selection of ULIP policies is also positively influenced by life coverage motive, such that the odds of choosing a ULIP policy increases by 1.666 when there is a unit increase in the policyholder's motivation to secure life in the case of death. Since ULIP policies are designed for the dual purpose of coverage and investment, it is observed that the purchase motivations align with the intended characteristics of the policy.

However, the selection of ULIP policies is also negatively affected by tax planning purposes. The OR (0.306) indicates that there is a 30.6% decrease in the odds of selecting ULIP policies when there is a unit increase in the motivation to save income tax. Among the different types of policies, ULIP policies have the highest premiums, essentially meaning that ULIP policies have the highest deductibles and therefore, have the highest tax benefits. It was also found in Section 4.4 that ULIP policies have the highest average premium among the policyholders in the study. As such, it is postulated that policyholders with tax saving motivations will choose ULIP policies for these characteristics. Then, the finding that people with tax saving motives are less likely to choose ULIP policies is indicative of poor understanding and limited knowledge of life insurance products among policyholders. The analysis of the purchase motivations of ULIP policyholders show that while they are fairly rational in their selection of life insurance policy, there is still a knowledge gap to be bridged when it comes to optimizing policy choice.

The model evaluation statistics for pension policy show that the null model is more effective than the logistic model with selected independent variables and the model fits poorly to the data (Hosmer-Lemeshow $p<0.05$). There are no significant predictors of pension policy among the selected purchase motivations.

Thus, from the results of table 4.18, 4.19 and 4.20, it can be concluded that policyholders make decisions under bounded rationality, and do not always act as rational consumers by optimizing their policy choice when it comes to the purchase

of life insurance. In studying the collected data for Hypothesis 2 of the study, it was found that there is a direct relationship between expected returns and policy choice of consumers for term, endowment and ULIP policies. The expected use of these policies aligned with the purchase motivation for the policyholders, even when there are other significant indicators. However, there is no direct relationship between the relevant purchase motivations and policy choice for, whole life, moneyback and pension policies.

4.7. Policyholder's Experiences with Life Insurance Policies

Since the purchase decision made by the consumer is a focal point of the study, the respondents were also asked about their experience buying a policy. This includes whether they thoroughly read the paperwork, understood the risks and returns associated with the policy, whether they compared their current policy with others and whether they were asked about their needs before they settled on a policy. This is also a point of enquiry to assess the buying behaviour of policyholders- whether they understand the policy before they buy it, search for relevant information, compare substitutes and make informed choices. The responses are presented below:

Table 4.21: Policyholder's experience with purchase of policy

Behaviour of policyholders	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I read the paperwork thoroughly before buying the policy.	9 *(2.69)*	30 *(8.96)*	77 *(22.99)*	146 *(43.58)*	73 *(21.79)*
I fully understand the risks and returns associated with the policy.	7 *(2.09)*	30 *(8.96)*	68 *(20.30)*	154 *(45.97)*	76 *(22.69)*
I looked at other policies and compared them before buying the policy.	26 *(7.76)*	58 *(17.31)*	91 *(27.16)*	103 *(30.75)*	57 *(17.01)*
I was asked about my needs before purchasing the policy.	30 *(8.96)*	39 *(11.64)*	78 *(23.28)*	130 *(38.81)*	58 *(17.31)*

Source: Computed

**Figures in parenthesis show percentage*

A majority of the respondents (65.37%) agreed that they thoroughly read the paperwork before buying the policy and 68.66% fully understood the risks and returns associated with the policy. While this implies that a majority of consumers of life insurance are informed, it also effectively means that more than one-fourth of the policyholders are less than fully informed, i.e., 34.63% did not read paperwork thoroughly and 31.34% did not fully understand the risks involved before committing to a policy. A majority of the respondents (52.24%) did not compare their current policy to others before buying it. This essentially means that for many policyholders, the decision to buy a life insurance policy was made without research, and any comparison of substitute products with different prices and purposes. It can be said that many consumers are not careful about their purchase decision when it comes to buying life insurance.

Moreover, as shown in Table 4.21, as much as 43.88% of the policyholders were not asked about their needs before purchasing a policy. Insurance purchase is a complex decision, and Section 4.6 has shown that agents are an important factor in the buying process for many of the policyholders. Life insurance agents are the primary source of distribution of policies, and it is part of their duty to consult the consumers on their needs and goals and recommend appropriate policies, and almost half of the policyholders were not consulted before a policy was recommended to them and they made a purchase decision. Agents may give general advice and recommendations regardless of the consumer, and may be driven by other factors such as sales targets, commissions, etc. These findings suggest that many consumers are not thorough with their purchase decisions and agents also do not fulfil their duties in meeting a customer’s needs. This is reflective of uninformed buying of financial products on the part of the consumer and indifference on the part of the seller. Thus, it is imperative that the government takes efforts to improve awareness and financial literacy of consumers.

The study also inquires about the policyholder's own experience with their current life insurance policy and company (LIC) to examine their level of satisfaction.

Table 4.22: Policyholder's experience with life insurance

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
The policy has fully met my expectations.	10	13	109	151	52
	(2.99)	*(3.88)*	*(32.54)*	*(45.07)*	*(15.52)*
I am happy with the policy I have purchased.	4	12	84	170	65
	(1.19)	*(3.58)*	*(25.07)*	*(50.75)*	*(19.40)*
I would recommend the same company to friends/family.	7	10	90	152	76
	(2.09)	*(2.99)*	*(26.87)*	*(45.37)*	*(22.69)*
I have an overall positive experience with the insurance company.	4	10	84	165	72
	(1.19)	*(2.99)*	*(25.07)*	*(49.25)*	*(21.49)*

Source: Computed

*Figures in parenthesis show percentage

The respondent's experience was generally positive, and majority of the respondents agrees with the positive statements shown in Table 4.24. 60.6% agreed that the policy had fully met their expectations, 70.15% said that they were happy with the policy they had purchased. 68.06% would recommend LIC to their friends and family, and 70.75% had an overall positive experience with LIC.

At the end of the questionnaire, the respondents were asked to give yes/no answers for a general summary of their perspective of life insurance, which is given on Table 4.23.

Table 4.23: Policyholder's general perspective of life insurance

Statement	Yes	No
Has your experience with life insurance been satisfactory?	307	28
	(91.64)	*(8.36)*
Have you faced any challenges with life insurance?	54	281
	(16.12)	*(83.88)*
Do you think consumers of life insurance take careful decisions to fully understand the policy documents, risks and returns?	231	104
	(68.96)	*(31.04)*
Do you think advertisements by agents and life insurance companies are informative enough for consumers to make purchase decisions?	185	150
	(55.22)	*(44.78)*

Source: Computed

**Figures in parenthesis show percentage*

An overwhelming majority (91.64%) said that their experience with life insurance was satisfactory and only 16.12% had faced challenges with life insurance. 68.96% of the respondents were of the opinion that consumers take careful decisions to fully understand the documents, risks and returns associated with their life insurance policy. Although advertisements can be informative, they are usually not too detailed-oriented and consumers require more information before making a fully informed optimal choice, especially when it comes to financial products. The respondents were varied in their opinion of advertisements, as more than half (55.22%) thought that advertisements by agents and insurance companies are informative enough to make purchase decisions and the rest (44.47%) did not agree. It is interesting to note that half of the policyholders were of the opinion that they could make informed decisions about purchasing a policy through advertisements alone, given the range and variety of available policies.

4.8. Demographic and Socio-economic Indicators of Life Insurance Selection

The study examines life insurance purchase as a micro phenomenon to understand the different factors that may influence the ownership of life insurance policies. As discussed in Chapter 2, there are studies which have looked into the different demographic and socio-economic factors to understand the drivers of life insurance demand in India. However, the life insurance market in North-East India is still unexplored. As such, based on previous findings, the study aims to include different demographic and socio-economic factors to understand the indicators that affect life insurance ownership and selection, viz., age, sex, marital and family status, number of dependents, education, employment, and income.

Since the variables considered for demographic and socio-economic status are categorical variables, the Chi-square test of independence is used to analyse them. The Chi-square test is nonparametric test to determine whether there is an association between categorical variables (i.e., whether the variables are independent or related to each other). It has been used in previous insurance studies to examine socio-economic factors and insurance ownership (Bhatia et al., 2021). The test has a

few data requirements: the variables are categorical, independent and there should be at least 5 observations (n>5) on at least 80% of the cells.

The Chi-square test is based on the difference between expected and observed values. The test statistic for the Chi-square test of independence is denoted as X^2 , and is computed as:

$$X^2 = \sum_{i=1}^{r} \sum_{j=1}^{c} \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \qquad (4.3)$$

which follows Chi-square distribution with (r-1)(c-1) degrees of freedom.

where, O_{ij}= observed cell count in the ith row and jth column of the table

E_{ij}= expected cell count in the ith row and jth column of the table, and

c & r are number of column and rows respectively.

If two categorical variables are independent, then the value of one variable does not change the probability distribution of the other. If two categorical variables are related, then the distribution of one depends on the level of the other. The association of the two variables is considered significant if the p-value is lower than the chosen significance level (α=0.05). The Chi-square test of independence only assesses associations between categorical variables and cannot provide any inferences about causation. The contingency tables are used to examine the distribution of different policies among different indicators of socio-economic status to see the purchase decisions of different groups. The strength of association or effect size between two categorical variables is examined using symmetric measures, i.e., Cramer's V and Contingency Coefficient. Cramer's V is the most popular of the chi-square-based measures of nominal association and varies between 0 and 1 without any negative values; a value close to 0 means no association. However, a value bigger than 0.15 is labelled as a strong relationship for the Cramer's V. The contingency coefficient is always less than 1 and approaches 1 only for large tables. The larger the Cramer's V and contingency coefficient, the stronger the association.

The type of policy chosen by consumers is examined with the demographic and socio-economic variables. Table 4.24 is a contingency table showing the cross-

tabulation of policies with age, with the results of Pearson Chi-square and symmetric measures. Due to the selection criteria for Chi-square test that 80% of cells should have a minimum of 5 observations, the group policies and 'Do not know' categories have been removed from policy type and 'Below 18 years' and 'Above 60 years' have been removed from the age categories. This leaves 372 out of the total 401 policies in the study.

Table 4.24: Policy type and age

Policy type	18-24 years	25-34 years	35-44 years	45-60 years	Total
Term policy	17	36	18	13	84
	34.69%	*25.53%*	*16.98%*	*17.11%*	*22.58%*
Whole life policy	1	7	3	0	11
	2.04%	*4.96%*	*2.83%*	*0.00%*	*2.96%*
Endowment policy	9	34	36	23	102
	18.37%	*24.11%*	*33.96%*	*30.26%*	*27.42%*
Moneyback policy	15	41	28	27	111
	30.61%	*29.08%*	*26.42%*	*35.53%*	*29.84%*
ULIP	5	16	16	10	47
	10.20%	*11.35%*	*15.09%*	*13.16%*	*12.63%*
Pension policy	2	7	5	3	17
	4.08%	*4.96%*	*4.72%*	*3.95%*	*4.57%*
Total	49	141	106	76	372
	100.00%	*100.00%*	*100.00%*	*100.00%*	*100%*
Pearson Chi-Square	16.787		Sig.		0.332
Cramer's V	0.212		Contingency Coefficient		0.123

Source: Computed
****significant*

The Pearson Chi-square statistic is 16.787, and it can be observed that there is no significant association between policy type and age. Looking at the distribution of policies across different age categories, for the youngest policyholders between 18 and 35 years of age, the most popular policies are term policies and moneyback policies. For policyholders aged 18-24, 34.69% own term policies and 30.61% own moneyback policies and for policyholders 25-35 years old, 29.08% owned moneyback policies and 25.53% owned term policies. This is different from all other age groups, for which the most popular policies are endowment and moneyback policies.

Table 4.25: Policy type and sex

Policy type	Male	Female	Total
Term policy	57	30	87
	27.14%	*16.30%*	*22.08%*
Whole life policy	9	2	11
	4.29%	*1.09%*	*2.79%*
Endowment policy	51	57	108
	24.29%	*30.98%*	*27.41%*
Moneyback policy	59	62	121
	28.10%	*33.70%*	*30.71%*
ULIP	22	28	50
	10.5%	*15.2%*	*12.7%*
Pension policy	12	5	17
	5.7%	*2.7%*	*4.3%*
Total	210	184	394
	100.00%	*100.00%*	*100.00%*
Pearson Chi-Square	15.194***	Sig.	0.01
Cramer's V	.196	Contingency Coefficient	0.193

Source: Computed
****significant*

Table 4.25 shows the contingency table for policy type and sex. Pearson's Chi-square statistic is 15.194, and it is statistically significant at 5% level of significance (p= 0.01), i.e., there is an association between policy type and sex. The symmetric measures, Cramer's V and contingency coefficient, are 0.196 and 0.193 respectively. The scores of effect size both indicate that there is a strong association between the two variables. For males, the most popular policies are moneyback policies (28.10%), term policies (27.14%) and endowment policies (24.29%). These three policies account for 79.53% of all the policies owned by men. The most popular policies for females are moneyback policies (33.70%) and endowment policies (30.98%) by far, accounting for 67.68% of all policies owned by women. It can be observed that the women hold relatively fewer term policies than men. However, they hold relatively more ULIP policies than men, which are considered to have higher risks than other policy types.

Table 4.26: Policy type with marital and family status

Policy type	Single without dependents	Single with dependents	Married without children	Married with dependent children	Married with independent children	Total
Term policy	31	22	7	27	0	87
	31.00%	*24.72%*	*35.00%*	*15.70%*	*0%*	22%
Whole life policy	4	1	0	6	0	11
	4.00%	*1.12%*	*0.00%*	*3.49%*	*0%*	3%
Endowment policy	28	17	5	54	4	108
	28.00%	*19.10%*	*25.00%*	*31.40%*	*31%*	27%
Moneyback policy	25	38	4	53	1	121
	25.00%	*42.70%*	*20.00%*	*30.81%*	*8%*	31%
ULIP policy	7	7	4	24	8	50
	7.00%	*7.87%*	*20.00%*	*13.95%*	*62%*	13%
Pension policy	5	4	0	8	0	17
	5.00%	*4.49%*	*0.00%*	*4.65%*	*0%*	4%
Total	100	89	20	172	13	394
	100.00%	*100.00%*	*100.00%*	*100.00%*	*100%*	100%
Pearson Chi-Square	56.903***		Sig.		.000	
Cramer's V	.190		Contingency Coefficient		.355	

Source: Computed
****significant*

Table 4.26 shows the contingency table for the cross-tabulation of family and marital status over policy type. The Pearson Chi-square statistic is 56.903, and there is a statistically significant association between the two variables ($p < 0.001$). The impact factors, Cramer's V and contingency coefficient, are 0.190 and 0.355 respectively. These scores show that there is a there is a strong association between marital and family status and the type of policy that the respondents have chosen. Although it is evident that there are many policyholders who hold endowment, moneyback and term policies, there are discernible differences when looking at the most common or popular policies for each of the categories under family status. The most popular policy for singles without dependents is term policies (31%), while single policyholders with dependents choose moneyback policies by a wide margin (42.70%). For married policyholders, those without children hold majority of term policies (35%), those with dependent children popularly hold endowment (31.40%)

and moneyback (30.81%) policies and those with independent children popularly hold unit-linked insurance policies (62%). Given the nature and utility designed for each policy, it is clear that policyholders with dependents, whether single or married, choose policies that incentivise saving and investment, i.e., endowment and moneyback policies. On the other hand, policyholders without dependents or with independent children opt for term policies or ULIP policies, which are designed for coverage and investments. Further looking at dependents, table 4.27 shows the cross-tabulation of different policy types with the number of dependents that each policyholder has.

Table 4.27: Policy type with number of dependents

Policy type	1 dependent	2-3 dependents	4-5 dependents	6 or more dependents	Total
Term policy	28	52	6	1	87
	23.93%	*27.37%*	*7.41%*	*16.67%*	*22%*
Whole life policy	5	5	0	1	11
	4.27%	*2.63%*	*0.00%*	*16.67%*	*3%*
Endowment policy	26	48	31	3	108
	22.22%	*25.26%*	*38.27%*	*50.00%*	*27%*
Moneyback policy	38	51	32	0	121
	32.48%	*26.84%*	*39.51%*	*0.00%*	*31%*
Unit linked insurance policy	13	29	7	1	50
	11.11%	*15.26%*	*8.64%*	*16.67%*	*13%*
Pension policy	7	5	5	0	17
	5.98%	*2.63%*	*6.17%*	*0.00%*	*4%*
Total	117	190	81	6	394
	100.00%	*100.00%*	*100.00%*	*100.00%*	*100%*
Pearson Chi-Square	34.151***		Sig.		.003
Cramer's V	.170		Contingency Coefficient		.282

Source: Computed
****significant*

It can be observed from table 4.27 that the Pearson Chi-square statistic is 34.151, and there is a statistically significant relation between policy choice and number of dependents. Cramer's V is 0.170 and the contingency coefficient is 0.282,

both indicating that there is a strong association between the two variables. These statistics further complement the results of table 4.26 which indicate that there is a strong relationship between policy choice and policyholder's dependents. The holding patterns across the different number of dependents is very similar, with endowment and moneyback policies being the most popular for all the categories. This is with the exception of the policyholders with 2-3 dependents, for which term policies are the most popular by a small margin.

Table 4.28: Policy type with education

Policy type	Under matriculate	Matriculate	Higher secondary	Graduate and above	Total
Term policy	4 *22.22%*	2 *9.52%*	5 *13.51%*	76 *23.90%*	87 *22%*
Whole life policy	1 *5.56%*	0 *0.00%*	2 *5.41%*	8 *2.52%*	11 *3%*
Endowment policy	4 *22.22%*	7 *33.33%*	11 *29.73%*	86 *27.04%*	108 *27%*
Moneyback policy	5 *27.78%*	6 *28.57%*	12 *32.43%*	98 *30.82%*	121 *31%*
Unit linked insurance policy	4 *22.22%*	6 *28.57%*	7 *18.92%*	33 *10.38%*	50 *13%*
Pension policy	0 *0.00%*	0 *0.00%*	0 *0.00%*	17 *5.35%*	17 *4%*
Total	18 *100.00%*	21 *100.00%*	37 *100.00%*	318 *100.00%*	394 *100%*
Pearson Chi-Square	17.926	Sig.		0.267	
Cramer's V	.123	Contingency Coefficient		0.209	

Source: Computed
****significant*

Table 4.28 shows the contingency table for policy types against the education of policyholders. The Pearson Chi-square reveals that there is no significant association between the variables. Out of the 394 policies considered, the policyholders of 318 policies (80.71%) have educational attainment of graduate and above. Since 4 out of every 5 policyholders are graduates, it is difficult to find a considerable pattern across different levels of education.

Table 4.29: Policy type with employment status

Policy type	Student	Employed (salaried)	Self-employed	Part time/ casual employment	Retired	Total
Term policy	11	43	27	1	1	83
	35.48%	*19.72%*	*25.47%*	*9.09%*	*8%*	*22%*
Whole life policy	1	5	4	1	0	11
	3.23%	*2.29%*	*3.77%*	*9.09%*	*0%*	*3%*
Endowment policy	7	66	25	2	3	103
	22.58%	*30.28%*	*23.58%*	*18.18%*	*25%*	*27%*
Moneyback policy	11	75	22	6	4	118
	35.48%	*34.40%*	*20.75%*	*54.55%*	*33%*	*31%*
Unit linked insurance policy	0	16	25	1	4	46
	0.00%	*7.34%*	*23.58%*	*9.09%*	*33%*	*12%*
Pension policy	1	13	3	0	0	17
	3.23%	*5.96%*	*2.83%*	*0.00%*	*0%*	*4%*
Total	31	218	106	11	12	378
	100.00%	*100.00%*	*100.00%*	*100.00%*	*100%*	*100%*
Pearson Chi-Square	42.924***		Sig.		.002	
Cramer's V	.168		Contingency Coefficient		.319	

Source: Computed
****significant*

It should be noted that there are very few observations for certain occupations included in the questionnaire, i.e., there are only 9 homemakers, 6 looking for work and 1 not in the labour force. Then, the distribution of these observations across policy types does not meet the Chi-square criteria (n>5) and they have been removed for the purpose of this analysis. Table 4.29 shows that the Pearson Chi-square statistic is 42.924, and there is a statistically significant association between policy type and occupational status of the respondents. Looking at the impact factors, Cramer's V is 0.168 and contingency coefficient is 0.319, both of which indicate a strong association between the factors. Among the occupational groups, students have 11 term policies and 11 moneyback policies (35.48% each). For employed policyholders, the most common policies are moneyback policies (34.40%) and endowment policies (30.28%). Among the self-employed, term policies (25.47%) are closely followed by endowment and ULIP policies (23.58% each). It is of note that out of the 46 total ULIP policies, 25 policies (54.35%) are held by self-employed

policyholders. This is the only policy for which self-employed respondents buy proportionally more policies than employed respondents.

Table 4.30: Policy type with monthly income

Policy type	Rs.10,000-25,000	Rs.25,001-50,000	Rs.50,001-1,00,000	Rs.1,00,001-2,00,000	Above Rs.2,00,000	Total
Term policy	4	31	23	16	13	87
	7.84%	*31.00%*	*22.33%*	*17.98%*	*27%*	*22%*
Whole life policy	3	1	1	4	1	10
	5.88%	*1.00%*	*0.97%*	*4.49%*	*2%*	*3%*
Endowment policy	9	21	34	29	15	108
	17.65%	*21.00%*	*33.01%*	*32.58%*	*31%*	*28%*
Moneyback policy	21	30	25	31	14	121
	41.18%	*30.00%*	*24.27%*	*34.83%*	*29%*	*31%*
Unit linked insurance policy	13	17	13	5	1	49
	25.49%	*17.00%*	*12.62%*	*5.62%*	*2%*	*13%*
Pension policy	1	0	7	4	5	17
	1.96%	*0.00%*	*6.80%*	*4.49%*	*10%*	*4%*
Total	51	100	103	89	49	392
	100.00%	*100.00%*	*100.00%*	*100.00%*	*100%*	*100%*
Pearson Chi-Square	50.632***		Sig.		.000	
Cramer's V	.180		Contingency Coefficient		.338	

Source: Computed
****significant*

On examination of the different income groups, there was only one respondent with monthly income lower than Rs.10,000 and this category was removed as it would not meet the required criteria (n>5). It can be observed from table 4.30 that Pearson Chi-square statistic is 50.632 and there is a significant association between life insurance policy choice and income of the policyholders. The impact factors also imply that there is a strong relationship between the two factors, as Cramer's V and contingency coefficient are 0.180 and 0.338 respectively. It is clear that moneyback and endowment policies are the most popular policies across all income groups with the exception of respondents with monthly income of Rs.25,001-50,000 for which term policies are most popular. It is interesting to note that policyholders in the first category with monthly income of Rs.10,000-25,000 opt for ULIP policies proportionally more than other income groups. 25.29% of

policyholders in this income group chose ULIP policies, a higher proportion than other groups. As ULIP policies are designed with profit and investment motives, it may be reasoned that more policyholders within this income bracket choose this policy than other income groups, as ULIP policies are not among the most popular policies for any of the other income groups.

Thus, we can see that among the different indicators for demographic and socio-economic status, there is a statistically significant association between policy type chosen and the sex, marital and family status, number of dependents, employment status and income of the policyholders.

4.9. Lapsation of Life Insurance Policies

The sale of insurance plans is a point of enquiry because insurance purchase is a complex decision and risk assessment is especially difficult for investment-oriented life insurance products. There is a requirement for high levels of financial knowledge and aptitude to understand complex financial products. These properties of insurance products make the consumer wary of purchase and may result in wrong choices for the consumers. It was found that many consumers make mistakes in their financial choices and poor financial decisions result in substantial financial losses to customers (Agarwal et al., 2009). If consumers are not well informed, the complexity of financial decisions coupled with the prevalent collectivistic culture may lead to deceptive sales practices by agents in order to gain higher commissions (Ericson & Doyle, 2006). The policyholders' experience with life insurance purchase was examined in Section 4.7, and it was found that one-fourth of the policyholders are less than fully informed and as much as 31.34% did not fully understand their policy before committing to it. Several authors have found that sales agents provide poor advice and sell inappropriate insurance products to financially uneducated consumers, which may lead to high rates of policy lapsation and mis-selling (Ericson & Doyle, 2006; Halan et al., 2014; Anagol et al., 2017). This study has also found that 43.88% of the policyholders were not asked about their needs before they purchased a policy. An insurance policy lapses when the policy holder does not

continue regular payment of the insurance premium and hence the contract between the insured and the insurer comes to an end before policy maturation. Lapsation of insurance policies results in losses to the insured as well as to the insurer. As such, the questionnaire included questions regarding any lapsed policies of the respondents, how long after purchase it lapsed and the reasons for lapsation. The details are shown in Table 4.31.

Table 4.31: Lapsation of life insurance policies

Have you had an insurance policy that lapsed?	Frequency	Percent
Yes	26	7.8
No	309	92.2
Total	**335**	**100.0**

If yes, how long after buying the policy did it lapse?	Frequency	Percent
Less than 2 years	4	15.4
2-5 years	20	76.9
Do not know	2	7.7
Total	**26**	**100.0**

Source: Computed

Out of the 335 respondents, 26 respondents (7.8%) had a lapsed policy. Among them, majority of the policies (76.9%) lapsed within 2-5 years, 15.4% lapsed in less than 2 years and 7.7% did not know how long they had the policy before it lapsed. The policies mostly lapse early in less than 5 years. This may be because generally, there is a lock in period of 3 years during which a policy cannot be surrendered.

Lapsation may indicate that the policy was not effective in meeting the specific needs of the insured person. Insurance policies may lapse due to passive non-action or active decisions. Passive reasons for lapse may include customers being unaware that not paying the premium on time will lead to lapsation (lack of information), forgetting to pay the premium (time or attention constraints), indifference towards their policy, etc. Active lapsation may occur when policyholders choose not to pay the premium because they feel that they do not need

the insurance coverage, challenges with payment systems, dissatisfaction with the policy, etc. Active lapsation may be indicative of the fact that the policy was purchased for reasons other than necessity or want. The policyholders initially agree to the purchase decision but retracts their position later, which can be considered a delayed and indirect rejection of the product. The respondents were given a number of statements and asked to choose which ones were relevant to the lapsation of their policy. It should be noted that respondents were instructed to tick all the statements that applied and were not restricted to one answer.

Table 4.32: Reasons for lapsation of policies

Reasons for policy lapse	Frequency	Percent
I was unable to make the necessary payments.	9	34.62
It was too inconvenient to make payments.	9	34.62
I forgot to pay the premium.	3	11.54
The agent did not remind me/ collect the premium.	5	19.23
The payment information was not clearly explained to me at the time of purchase.	9	34.62
The policy was not clearly explained to me at the time of purchase.	10	38.46
I found a better and more suitable policy,	1	3.85
Others	1	3.85

Source: Computed

The most common reason for lapsation of policies was an indicator of mis-selling, as 38.46% said that their policies lapsed because the policy was not clearly explained to me at the time of purchase. Table 4.32 shows that there were three other common reasons for lapsation- they were unable to make the necessary payments (34.62%), it was too inconvenient to make payments (34.62%) and payment information was not clearly explained to them at the time of purchase (34.62%). For the respondents with lapsed policies, the common reasons indicated mis-selling in the form of incomplete information of policy or payment terms which led to inability to make payments for the policies. 19.23% of the respondents had lapsed policies because their respective agents did not remind them or collect premium payments and 11.54% forgot to pay the premium. One person let the policy lapse because

he/she found a better and more suitable policy, and one person chose the 'Other' option and explained, "*The company made trouble when I tried to claim because I didn't have original copy, but I had xerox. They did not want to give and made trouble, so it lapsed*". Thus, from the findings in this section, it may be concluded there are more cases of active than passive lapsation among the policyholders, and mis-selling is the main determining factor of policy lapsation.

Since it is established that mis-selling is the main determining factor of policy lapsation, it is in the interest of the study to further examine which policies are more likely to lapse. This is done by using binary logistic regression test to understand the effect of purchase motivations on the probability of policy lapsation. This is done to have a better understanding of buying behaviour of the consumers, as policyholders with different motivations would care differently about the products they purchase. The study tries to find if any of the purchase motivations of the policyholders have a significant effect on lapses. A logistic regression equation is estimated with policy lapse as the dependent variable, and the data is coded such that lapsed policies=1 and no lapsed policies=0. The different purchase motivations in Section 4.6 are taken as the independent variables which are measured on a 5-point Likert scale.

Table 4.33: Estimated Logistic Regression of policy lapsation on purchase motivations

Independent Variables	β	**Sig.**	**OR**
To secure the future of my family in case of death.	0.406	0.160	1.501
To save for future needs like children's education/ retirement.	0.033	0.879	1.033
To save some amount regularly to avoid reckless spending.	0.484**	0.050	1.622
To use as an investment tool for wealth creation.	-0.437**	0.021	0.646
To get some other loans/services.	-0.232	0.256	0.793
To save income tax.	0.078	0.659	1.082
Because i was convinced by the agent.	0.132	0.519	1.141
Because i knew the agent personally.	0.357*	0.098	1.429
Constant	-6.038	0.000	0.002

Model evaluation	**Chi-square**	**Sig.**
Likelihood Ratio test	63.095***	.001
Hosmer and Lemeshow Test	5.985	.649

Source: Computed

****significant at 1%, **significant at 5% level, *significant at 10%*

Table 4.33 shows the estimated logistic regression of purchase motivations on policy lapsation. The Likelihood Ratio test indicates that the logistic model with independent variables is more effective than the null model, and the Hosmer and Lemeshow test show that the model is a good fit for the data ($p>0.05$). It is observed that among the different reasons for purchasing a life insurance policy, the purchase of a policy for general investment motive ($p=0.021$), saving motive ($p=0.050$) and agent association (0.098) were significant determinants of policy lapsation. Life insurance policies bought to use as an investment tool for wealth creation were less likely to lapse, and the OR (0.646) indicates that the odds of a policy lapse decrease by 64.6% if the policy with taken with the intention of investment and wealth creation. Policyholders with investment motives may choose their policies more carefully to avoid problems such as lapsation due to active or passive reasons.

It is also found that policies taken with the intention to save regularly and avoid reckless spending were more likely to lapse. It can be interpreted that for a one-unit change in the independent variable, purchasing a policy to cultivate saving habits, the odds of policy lapsation increase by 1.622 when all other independent variables are kept constant. This may be indicative of declining will on the part of the policyholder, as they fail to keep up with premium payments and do not fulfil their saving goals. The issue of saving as a habit among people in North-East India is also discussed in Section 4.10.3. from the agent's perspective. Moreover, it is found that policies which were bought because policyholders know the agent personally are more likely to lapse. The OR (1.429) indicates that the odds of a policy lapse increase by 1.429 when there is a unit increase in the motivation to buy insurance because it is sold by someone personally known. Life insurance agents play a crucial role in the distribution of insurance, and many agents start selling from their close circles or people they already know. It was discussed in Section 4.6 26.27% of the respondents purchased a life insurance policy because it was sold by someone they knew personally. Given that life insurance policies are a long-term financial product, it is likely that people who buy policies because they are personally connected to the

seller will stop making premium payments and let their policy lapse if they do not have an active interest in the product.

4.10. Assessment of Life Insurance Agents- Their Roles and Perspectives

The success of life insurance companies largely depends on the individual agents, who are first line workers and are involved in selling various types of life insurance products to the end consumer (Ankitha & Basri, 2019). Aside from the sale of insurance products, individual agents provide after-sales service for the duration of the policy and shape the customer's experience with life insurance to a large extent. The customer's overall satisfaction with policy, service and the company he/she is buying from depends on the individual agent (Siddiqui & Sharma, 2010). Thus, the study includes in-depth interviews of thirteen senior agents and four managers from four LIC branches in North-East India. The names of the agents have been removed and labelled as "LIA1 – LIA13" to ensure confidentiality and anonymity. The respondents had an average work experience of 23 years with LIC, ranging from 15 years to 40 years, with an average of 969 clients, ranging from 600 clients to 2000 clients per person. With the amount of experience they have and the number of clients they manage, they are considered to have good knowledge of the life insurance market. The interview schedule included questions regarding their experience as life insurance agents, with clients and with the company LIC itself. The structure of the interview was to better capture their views with open-ended questions than close ended questions and rating scales.

4.10.1. Finding clients

The respondents were asked questions pertaining to finding clients, how sales are usually made, and why most customers purchase life insurance. This is to have a basic understanding of the sales process and the relationship between the insurance agents and their clients. The respondents mostly had the same experiences finding clients, as they started from family, friends, relatives, and workplaces. From these

first few clients, the agents would then expand their network through references and word of mouth. LIA 7, who has been working with LIC for 23 years, said that early in her career in 2003-2004, "*We used to go to the village, talk to the headman, tell him that we are from LIC, then we used to go door-to-door*."

Most agents preferred to speak to an individual rather than approach a group, since life insurance is considered a matter of "*individual personal assets*" and build a one-on-one relationship with the clients. The agents in Mizoram noted that aside from approaching individuals through references, they also visited government offices and businesses as they were most likely to afford and buy insurance policies. The agents in Mizoram made it a point to prioritize government offices, a contrast to the other two states where agents said that there was no such targeted demographic and would find clients at their own convenience. Two agents also noted the importance of appearance, in that looking smart and respectful was an important part of the process, as it shaped the client's perspective of them and in turn, the company.

Aside from this, the agents shared a common belief when approaching clients, they mostly followed the same approach to finding clients. A common phrase in all the interviews was, "*Different people have different needs*", a good summation of their sales practices, as they stressed that every person they approached had different needs and consequently, different reasons for purchasing insurance. The agents would build a relationship with them, get to know more personal details, and then try to find a suitable policy for the client. "*You first have to know the customer; you cannot directly convince them. You have to interact with them and find out what is lacking despite all they are achieving. It might be with family, children, other things. Then only you can know what kind of policy to suggest to them.*"

The agents had approximately 12600 clients between them, thus there were interesting points when they described their client base. Both agents from Mizoram said that their clients were generally within the age range of 30-50 and noted that it was harder to convince young people to opt for policies. LIA 1 said, "*younger people do not yet understand the importance of saving and planning,"* as they would often delay purchasing a policy even with a stable income and only realise the benefits of

long-term policies upon hindsight. This problem, however, was not mentioned in the other states and it seems that more younger people in Assam are subscribing to life insurance. LIA 13 from Assam commented the changes she has seen during the course of her career, "*More and more young people go for life insurance. Nowadays, younger people are very active. Before, many did not want to take insurance, 'I don't earn too much, I cannot give every month', 'I will do it later', 'I will take when I have kids.' But I have more young people now*."

Most of the agents primarily worked with clients in the city, and LIA 4 from Meghalaya expressed that it was easier to find clients in the city, "*Majority of my clients are from tribal areas…they don't know what is insurance and its benefits, and we have to spread the information. It's much easier in city areas because they already know*." However, compared to Mizoram and Meghalaya where agents remarked that it was harder to find customers in rural areas, the sales agents in Guwahati said that they did not find much difficulty, but rather said that it was not difficult because they have better rural penetration as compared to private companies, and that many farmers in more rural areas of Assam are LIC policy holders. LIA 12 said, "*Many of my clients are also farmers…penetration in rural areas is also very high. LIC is the only one that is easily available even in rural areas*."

The occupations of the clients shed further light on the insurance market. In Mizoram, the agents make it a point to target government offices and successful businesses, while also growing a network from familial people. LIA 2 said, "*Most people that do not work government jobs do not have regular money coming every month. They are usually hesitant to take a policy because they are afraid of not being able to make payments*." Since there are limited salaried jobs in the private sector, it is reasonable to make government offices a target demographic. LIA 5 from Shillong also said that some clients could not continue their policy due to irregular income and that, "*life insurance policies are only good for salaried people or rich people*." While agents from Mizoram and Meghalaya shared these challenges, it seems the agents in Assam are not as restricted in their clientele. According to LIA 10, "*businesspersons will be higher than salaried people. If there are 10 lakh, 1 lakh will*

be salaried people and 9 lakh will be businessmen." This distinction alone shows the size and vibrancy of the private sector in Assam as compared to the other states.

When asked about clients' main motivation for taking a life insurance policy, the most common reasons cited by the agents were security, saving, family needs, and education. Life insurance as a tool for investment and wealth creation were also common motivations. The customers' purchase motivation is clearly reflected in the popular policies, as most of the agents said that moneyback policies, endowment policies and child policies were the most popular among their clients. According to the agents, the most popular policies are Jeevan Anand, Jeevan Labh and Jeevan Utsav. LIA 4 added that Jeevan Anand is a popular retirement solution for people in their 30s.

Among the popular policies, there was again a difference between the states for term policies and ULIP policies. In Mizoram, people usually do not opt for term policies unless it is to fulfil loan requirements. Moreover, due to high administration costs and subpar understanding, many people had a bad experience with ULIP policies when it was first introduced. This has caused a negative sentiment towards the policy that still remains, and LIA 1 even stated, "*I only sell to those who fully understand and are interested in the financial market*." In contrast, term policies and ULIP policies seem to find more popularity in the other two states. LIA 5 from Meghalaya shared that term policies and ULIP policies are popular with businesspersons. LIA 12 from Assam also stated that the newer ULIP policies have been selling well with the younger generation, such that it is common for them to take a term policy and a ULIP policy together, the former for coverage and the latter for a high profit.

Some agents also noted that during the course of their career, consumer preferences have changed. New customers generally opt for shorter term policies, when long term policies were preferred before. LIA 9 and LIA 13 said that the younger generation are more opinionated and more aware, and they are open to taking insurance. This awareness also translates to stronger personal opinions, and some choose to go for private companies or mutual funds.

4.10.2. Experience with clients

The agents ensure that they cultivate a good relationship with their clients, and many mentioned how it was important for them to know each and every one of their clients. On the question of the client's general understanding of insurance products, risks and returns, and terms of the policy, all the agents explained that choosing a policy was not a fast decision. The agents first form a relationship with the client to have a general understanding of their wants and needs, and clients will take time to choose a suitable policy with the agents. The agents confirmed that they would explain the policies to policyholders multiple times and they would only take it when they fully understood the terms and conditions. Since many clients do not have a prior understanding of insurance policies, the agents shape their primary understanding of the products and suitable policies. Because of this, there is a general consensus that clients have a full understanding of the policies they have taken. This was a priority not only for the client's sake, but for the agent's as well. On this topic, LIA 9 said, "*This is my work, they are my customer, and LIC is my bread and butter. I respect my work, so I make sure to do it well also*." Then, since agents are the primary point of contact and information, a good relationship is essential to establish the client's trust in the policy, the agent and consequently, trust in LIC. LIA 12 said, "*We also have to make sure that they understand, because they should have trust in us*."

In exploring this relationship, the agents were asked if they faced any problems with servicing or with client's behaviour. There seemed to be two common issues for most of the agents, i.e., losing documents and late payments on premiums. Many agents noted that clients often need assistance because they failed to keep their documents safe. It is apparent that this is a common issue in all the states, and clients would call the agents for missing documents, sometimes even putting the blame on the agents themselves. However, the agents acknowledged that this was a part of the job, and that it was not a big problem helping clients file for duplicates. The Manager of Guwahati Branch 1 summed up the issue, "…*customers lose their documents…this is one thing that we cannot help, because they have the documents themselves, and they will misplace it, then they will worry and call. But it is not a difficult procedure, and they are also helped by their concerned agent.*". The other

common issue is the late payments on premiums. Many agents commented that some clients will need to be reminded of payment schedules and the amount to be paid. Another problem concerned with payment is that a client may not have sufficient balance to be deducted from their account, something LIA 2 has often experienced. LIA 4 also said that as much as 10-15% of her clients are irregular with premium payments and have to be reminded every time.

A key part of the relationship between agents and clients is the rise of digitization. Many agents commented on how cell phones and digitization effected the nature of their job. As of now, much of their business is conducted through phones, and this ease of communication has positively evolved their relationship with clients and the issues mentioned above. Since agents now have all key information on their phones, it is much easier to help customers when they call for help. Documents are easily sent on WhatsApp or mail, erasing a lot of the time and effort required before. LIA 4 mentioned that the increased use of cell phones has changed the work culture, with more and more work being conducted on digital platforms. She mentioned that at least 95% of her work is now online.

Moreover, many agents stated that the issue of late payments has been much less significant since the introduction of automatic deductions from the bank. Since many clients have opted for automatic deduction, there is essentially no work required for either the client or the agent after the initial purchase. The number of clients that prefer digital/online payments varies; some have 50% of clients using online payments while for some agents, as much as 90% opt for online payments. This rise in online payments is also an aftermath of the COVID pandemic, a period of much uncertainty for both the agents and the clients. It was during this time that many agents made use of the LIC application, LIC Digital. Since this was new to many clients, the agents also had the task of introducing and explaining it to them. LIA 4 describes her experience during this period, "*During the Covid pandemic, there was a lot of worry. What will happen if they cannot pay? Many policies will lapse. Then after some time, I started registering on LIC Digital for all my customers. For that, I digitally registered around 97% with their phone number and email id. Then, during the lockdown time, I told them how to pay. It was continuous,*

even till 12 to 1 o'clock. Now, the earlier question was how to collect payment, collection of premiums from home, now I only collect very few, 5-10 families."

The Branch Manager of Guwahati Branch 2 summarised general payment methods in Assam, "*Majority pay using UPI. Many will come and pay at the cash counter, some but very few also use cheques. We have premium points at different places in the city where customers can pay premium without having to visit the LIC office, or their particular agent or branch. The agents also collect some themselves, and if they do that, they go and collect from the customer and they have 24 hours to deposit the money in the LIC office. We are also working towards card payment, and hopefully it will be available shortly*."

The spread of cell phones and internet use has affected not only the work culture, but also awareness about insurance products. LIA 1 said that in recent years, people learned of life insurance online and approached him to learn more information. Agents such as LIA 9 and LIA 11 commented that while they previously had to explain what LIC is and what insurance is, people already have awareness about it after the spread of cell phones. Thus, the increased use of cell phones, online UPI payments and the LIC Digital application have had a significantly positive impact on the conduct of insurance business.

There are two kinds of claim settlements, early and non-early, and the agents generally did not have problems with either. Claims are usually settled quickly, and many of the agents stated that every one of their claims had been settled. Agents sometimes face delays and issues when clients do have the required documents for the claim. When a claim is filed, a research team from the branch undertakes the duty of verifying the claim and this process can take a while. Some agents commented that clients can get impatient waiting for the verification process, but this is not something that can be helped. As long as the claims are truthful, they are eventually settled.

This also brings into question the issue of fraudulent claims, cases where clients intentionally take policies by giving false information. For example, LIA 1 shared that some clients claimed that they did not consume alcohol or drugs, but their cause of death was tied to these habits. LIA 10 expressed the importance of agents in such cases as they are the primary underwriter of the policies. "*The people in the*

office are unable to see the people whose insurance they are doing. But the agent has the first-hand information being at the practical level. They collect information and accordingly, they will suggest whether we should offer insurance to that particular person. They primarily select the life insurance policy holders on behalf of LIC, taking all the interests in their mind. Then, agents are considered the root-level underwriter. According to our instruction, it is again underwritten by LIC." In this way, agents also hold themselves responsible in selecting clients to avoid fraudulent claims to the company.

When it comes to the issue of policy lapsation, there are two common reasons given by the agents. A popular reason why policies lapse before maturing is irregular or unstable income. Many agents believe that this is the main reason why clients have to discontinue their policies, a clear example being the COVID period. Due to a reduced earning capacity during the pandemic, many could not afford to continue premium payments and policy lapsation was high during this period. LIA 5 even stated that this high lapsation rates during COVID helped her understand that "*insurance is only good for salaried people or rich people*." This irregular income could be a result of the client's nature of occupation (part-time, casual or self-employed), business downturns or external factors such as the global pandemic. This usually cannot be helped by either the clients or the agents, and the lapses occur due to uncontrollable circumstances instead of individual oversight.

The second popular reason for policy lapsation is mis-selling by the agents. Some agents said that the primary and most common reason for lapsation of policies is mis-selling by agents when they do not do enough research before convincing a client to buy a policy. The lapses due to irregular income or downturns in business are few, and most cases of lapsation are attributed to the agents for not recommending a suitable plan based on the paying capacity of the customers, which all the agents mentioned was a crucial first step. LIA 12 describes this issue as, "*Some agents also give wrong policy. Wrong policy does not mean bad policy, wrong policy means wrong for that particular person, that particular family. They will give big policy and earning capacity is too less. When they get the big policies, after some time, they cannot pay the premium. What happens? Policy will lapse*." Some agents even go as far as paying the first premium for a client. This opinion was shared by

many agents, as they felt that agents purposely give policies that are not suitable for clients due to pressure to increase sales and bring in more clients. The pressure of these targets often results in policies that the clients cannot afford. LIA 7 felt strongly about this issue, going so far as to say that this was the main reason for lapsation of policies, and that agents are the ones responsible for such cases. Aside from irregular income and mis-selling, agents also mentioned that some clients had lapsed policies because they surrendered their policy when they had other expenses such as loan payments, and for some clients, it is the perception that regular payment of premiums is a large amount of money to spend as the rewards are deferred and not immediate.

4.10.3. Experience with LIC

The agents were also asked about their experience as an employee of LIC, their competition with private companies and LIC's reputation in the state. They were also asked to comment on the life insurance market in their respective state and the North-East area. Since LIC has operated as the only public sector provider of life insurance in India since 1956, their competition with the private sector is a point of interest. It could be observed that particularly in Assam and Meghalaya, there was a much stronger sense of competition with the private sector. The Managers and sales agents alike were very protective of LIC. There was a sense of loyalty and pride in their company, and a distrust of private companies due to poaching. The Manager in Guwahati Branch 1 shared their experience competing with private life insurance providers in Guwahati. Their office used to display the photographs, names and phone numbers of the top salesmen who reached the highest tier of sales, but this had to be discontinued as people would get information from there and call the agents to poach them for other private companies. Because of this, they had to take down all the phone numbers on the displays and replace them with the LIC agent number on the posters. This gives insight into the fierce competition between companies, and the use of unethical practices in the name of competition.

In the case of Shillong, the Sales Branch Manager shared that there had been a leak of sensitive information before which included annual policy data, client

information and product information. This played a major part in their hesitance to divulge information about either the clients or data. He mentioned that extra security measures had to be undertaken even for employees; the data they had access to could be copied (extracted) from the application before, and after the incident, copying/ extracting the branch's data such as sales, targets, etc. was disabled. Moreover, there was added security in the form of employee passcodes to prevent unauthorised access. These measures had to be implemented because competing insurance providers got hold of the leaked information.

The agents mostly felt that LIC was not comparable with any of the life insurance providers in the private sector because of two reasons: it has been in operation for more than 70 years and it accounts for more than 70% of the market share. LIA 3 even likened it to "*comparing a mother and son*". According to LIA 1, a few private insurance providers that opened in Aizawl around 2016 had to close down as they could not acquire enough clients. He partly attributed this to the difference in priority between LIC and other companies, as LIC prioritises its clients above anything else, and does not give much importance to appearance of the agents and offices. LIA 4 pointed out an interesting point of advantage for LIC over private companies called 'sovereign guarantee', which is essentially a guaranteed payout of the sum assured by the government even in the case of economic recession or collapse.

The respondents also seem to be of the opinion that there are a lot of malpractices in the private companies due to pressure of meeting sales targets, such as selling bigger insurance plans without verifying income sources so policies ultimately lapse. Some agents mentioned that private companies often bargain and try to cut corners with clients when claims are filed, the result being that clients do not get the full sum assured. Some clients have even reached out to LIC agents for help on their claim settlements with a policy from a private company. Two agents from Meghalaya, LIA 5 and LIA 7, said that people who are subscribed to a policy with private companies still ask them for help with claims and settlements. This is essentially attributed to the trust they place in LIC and its agents.

On the other hand, a few agents felt that private companies have affected their business. LIA 7 said that after the increasing number of private companies in the last two or three years, it was harder to find new clients. Moreover, an increasing number of people have started using mutual funds as a substitute for life insurance.

When asked about the general public's perception of LIC, the agents mostly shared the same answer- LIC has a very good reputation. Several of them commented on the trust the people had in LIC, in large part due to its years of service and good branding. They pointed out the fact that since LIC has been operating for so many years, the name itself was synonymous with LIC, and people often asked, "*Do you have LIC*?", effectively meaning, "*Do you have life insurance*?" Although it seems like most people in Meghalaya and Assam had at least heard of LIC, the case is different for Mizoram. LIA 1 stated that approximately 50% of people he approached had heard of LIC. But even among these, many did not know what life insurance was, and would confuse it for vehicle insurance. He added that there were many instances when people accidently come to LIC looking for vehicle insurance. Moreover, he noticed that education was a big determining factor in people's reception and attitude towards life insurance. Among his clientele, lecturers usually had a positive attitude towards LIC and knew about life insurance beforehand while many government workers were less aware and less receptive. He specifically pointed out that many government drivers were often uninterested in life insurance and saw it as a payday for their wives after their demise, rather than a source a protection and security for the family. This shows a low level of awareness among the public in Mizoram.

Although some agents found it difficult to comment on the life insurance market in their state or in the North-East, there was a clear distinction between the states. The agents in Mizoram and Meghalaya seem to share similar challenges. LIA 1 shares his experience concerning the high death toll of Mizo men in the last few years, "*they leave nothing, no amount behind for the family except ralna pawisa. There is nothing to depend on for the family, not even enough to open one second-hand bale*." '*Ralna pawisa*' is a part of Mizo culture, wherein friends and members of the community give some amount of money as a show of grief and condolence for the bereaved. Although this is a show of support, it will most likely not be enough to

cover real expenses for the family moving forward. This essentially means the bereaved family is left with no safety net once the breadwinner is gone. Aside from low awareness of life insurance, this is largely attributed to spending habits and lack of motivation to save, as many people spend lavishly and do not have the foresight to save or put off saving until a later time. The agent also made it a point to contrast this mindset with people from other states who prioritise saving even if income is not high.

The Branch Sales Manager in Shillong echoed similar sentiments, "*People in Meghalaya only think in the short-term. They live for the present and there is very little financial planning and management. This is why insurance penetration is very low, because people do not plan for the future. If you compare Guwahati and Shillong, there are only three branches of LIC in Meghalaya and one is in Shillong; but in Guwahati, they have branches even in the more remote areas and districts. This is because there is such a big difference in lifestyle and financial habits. In my experience in Guwahati, even the people who have irregular/ inconsistent income or people who have lower income all want to save. They will still choose to have insurance plan. But here in Shillong, people don't think the same way even if they are salaried employees*."

In congruence with these remarks, the agents in Guwahati did not seem to face this challenge. As mentioned, majority of the life insurance policy holders in Assam are business owners, and not employees like the other two states. They do not face as much of a problem with people who hesitate to take insurance or are not inclined to save. In contrast, people opt for insurance policies irrespective of their sector or income bracket. Moreover, LIA 12 was of the opinion that LIC is still growing more in Assam, especially in the rural areas. "*We provide insurance to all people, from business owners to farmers and cultivators, many of my clients are also farmers. Compared to these private companies, penetration in rural areas is also very high*." LIA 11 also stated that when approached, most people will take an insurance policy even if they were not previously aware of it. These financial planning and spending habits in the different states reveal the importance of not only awareness but the importance of culturally cultivated habits. The inclination to save and plan comes not only from an individual, but the culture he/she is part of.

The agents reveal a deep sense of loyalty and pride in LIC, and many said that they had not faced significant challenges or problems in their careers as insurance agents. The agents said that they were thankful to LIC as the company had provided everything they wanted, be it land or a house or a car. LIA 10 explained the unique benefit of LIC agents in the form of hereditary commissions. If an agent meets an unexpected death and a client's policy is still ongoing, the family of the agent receives their commission annually until the policy is done. Although the percentage of commission may not be high, it is still beneficial and ensures that the agent's full commission accrues to their family in the case of untimely demise. LIA 12 had a different reason for being thankful to LIC, as he compared his job to the ones he had in other organisations, "*Other organisations, you always have to give bribe, so much bribery at all levels, cannot get anything done without bribes. Some organisations are like that. But here, I can sleep peacefully at night. I have mental peace, that is very important*."

4.11. Summary

The chapter reveals interesting findings on the consumption of life insurance. The majority of life insurance policyholders (79.4%) are in the working age group, and the biggest contributors (35.52%) are between the ages of 25 and 34. The average family size is 2.25, and half of the policyholders (51.3%) have 4-5 family members. People with dependents are more likely to purchase insurance, with the average policyholder having less than 6 family members and less than 4 dependents. A large number of policyholders (53.7%) are salaried employees- they have regular stable income and are more likely to keep up premium payments. It is precisely this reason why many life insurance agents have salaried employees as their target demographic and marketing attempts are directed towards them.

Most policyholders only have one life insurance policy, showing the significance of the purchase decision. The most common policies are moneyback, endowment and term policies, which was corroborated by the agents in their interviews. Most policyholders (74.56%) pay an annual premium below Rs.50,00

and for 57.36% of the respondents, the sum assured by the policy is less than Rs.5,00,000. The respondents were mostly satisfied and happy with their policy and experience with LIC. Policy ownership is significantly determined by demographic and socio-economic factors. Sex, marital and family status, employment, number of dependents and income have a causal relationship with ownership of life insurance and are significant determinants of policy ownership, although their significance varies depending on the policy in question.

On examining the purchase motivations of policyholders, 22.1% made a proactive choice to purchase a policy without external pressures. As many as 40.9% of policyholders purchased a policy because of the influence of insurance agents, which shows the importance and influence of agents as their work contributes to large amount of life insurance consumption. Hypothesis 2 of the study was proven as it was found that there is a direct relationship between expected returns and policy choice of consumers for endowment and ULIP policies.

Many policyholders bought a policy without any research and are not careful about the purchase decisions as one-third did not fully understand their policy before committing to it. Moreover, 43.88% were not asked about their needs before purchasing a policy. There were 26 policyholders with lapsed policies, and there were more cases of active lapsation. The most common reason cited for lapsation is that the policy was not clearly explained to them at the time of purchase, which indicates mis-selling on the part of the agents.

The interviews with agents revealed that digitisation has a major effect on the two main problems they faced with servicing, i.e., customers losing documents and late premium payments. It was a common opinion among the agents that the most common reasons for lapsation were mis-selling by the agents and irregular income of the customers. The agents are very loyal to LIC, and they continually face fierce competition with the private sector. It can also be observed that the culture of respondents affects their saving and spending habits.

CHAPTER 5

BOUNDED RATIONALITY AND LIFE INSURANCE POLICY SELECTION: AN EMPIRICAL ANALYSIS

5.1. Introduction

The demographic and socio-economic profile of policyholders and their holding patterns have been analysed in Chapter 4. Aside from these factors, the study is concerned with decision-making under bounded rationality. Bounded rationality is the broad framework using which we study decision making in the life insurance sector to provide a multi-dimensional analysis of the different factors that can be relevant to an individual's choice. The exiting literature has found that along with demographic and socio-economic factors, the demand of life insurance policies is also dependent on an individual's psychography. There are many behavioral biases that consumers are susceptible to, knowingly or unknowingly, when making a purchase decision. When individuals make decisions, they are influenced by the desires that they possess and the opportunities that they think they have. It is not certain that these beliefs are correct, and it is possible that they are not aware of some opportunities that are actually viable to them or, they may believe that certain opportunities are favourable which in reality are not, therefore it cannot be guaranteed that they will choose the best alternative. This implies that human behaviour is rational first intention, but bounded by information asymmetry (Elster, 1990). The study also found information asymmetry on the part of both consumers and insurance agents as discussed in Chapter 4. Individuals are bounded rational due to the absence of comprehensive information and facts, and people find shortcuts more convenient and follow the track of simple models resulting in trivial outcomes (Wilcox et al., 1999).

Thus, the study is concerned with this decision-making for individuals and their purchase behaviour when they purchase a life insurance policy, and includes different scales for the aspects of decision making for which these bounded rational decisions can be observed:

- A policyholder's psychographic profile encompassing their values, attitudes, habits and personality traits.
- Different heuristics and biases that may have been relevant at the time of purchase.

This chapter analyses these aspects of decision making and their relationships and interactions with different factors to provide a holistic understanding of policyholder profiles and the psychological factors at play when making life insurance purchase decision. Exploratory Factor Analysis (EFA) is conducted for the different scales, to test the internal consistency of the scales and construct new variables. Factor analysis has been preferred by many researchers for quantitative data analysis in life insurance purchase behaviour (Bhatia et al., 2021).

5.2. Psychographic Profile of Policyholders

Life insurance purchase is a complex decision, and the choice between different policies depends on consumers' financial needs and other life situations (Gitman et al., 2012; Grable et al., 2016). Factors come into play beyond traditional demographic characteristics related to life cycle and expected demand. Purchase decisions can be impacted by the psychological characteristics, including feelings of comfort and recognition, as well as functional characteristics, such as maintaining or improving financial security (Grable & Goetz, 2017). As such, the wide-spread adoption of psychographics began in the late 60's and early 70's, driven by market researchers like Koponen, who provided the first indicators that psychographic profiles may be better able to differentiate consumer segments than traditional demographics (Sandy et al., 2008). An individual's personal values and attitude will determine their actions (Hofstede, 1983) and consequently, the purchase of life insurance (Ferber & Lee, 1980; Omar, 2007; Park & Lemaire, 2011; Rahim & Amin, 2011). Hence, the purchase of life insurance can be influenced by diversity through the personal values of individuals in society.

Psychographics is the study of consumer personality traits in an attempt to understand and predict patterns in consumer behaviour. In studies of consumer behaviour, geographic segmentation is specific place-based marketing and demographic segmentation is specific data gathered relating to age, income, education level, family status, etc. Psychographic segmentation, however, examines consumers in the context of their motivations, values, interests, passions, lifestyle choices, and even the kind of media they consume. It involves profiling a market segment based on a descriptive set of characteristics- *personality, traits, lifestyle, and values*. A community residing in same demographic group will show different psychographic profiles. One of the most widely used systems to classify people based on psychographics is the VALS (Values, Attitudes, and Lifestyles) framework developed by Arnold Mitchell in 1978, which draws heavily on Abraham Maslow's Hierarchy of Needs. Using VALS to combine psychographics with demographic information provide a better understanding of consumers (Niosi, 2021).

One of the most influential studies in psychographics and life insurance ownership was by Burnett and Palmer in 1984. They studied demographic and psychographic factors in the demand for life insurance policy and found that 14 psychographic variables were statistically significant predictors of individual life insurance ownership. They concluded that psychographic factors had more influence and were statistically more significant than demographic factors. The psychographic factors of work ethic, socialization preference, fatalism, religion and assertiveness were found to have the highest significance over demographic factors. Since other studies on purchase behaviour have found that these factors have an impact on life insurance demand, they have been selected as factors for the study.

Table 5.1: Individual Lifestyle Construct

Sl.no	Psychographic Variables	Sources
1	Risk taking behaviour	Burnett & Palmer, 1984; Outreville, 2013; Ding et al., 2010; Han & Hung, 2017; Wang, 2019
2	Assertiveness	Burnett & Palmer, 1984; Nyhus & Webley, 2001; Zeigler-Hill & Shackelford, 2016
3	Fatalism	Burnett & Palmer, 1984; Beck & Webb, 2003; Omar, 2007
4	Information seeking behaviour	Burnett & Palmer, 1984; Kumar, 2021
5	Community involvement	Burnett & Palmer, 1984
6	Socialization preference	Burnett & Palmer, 1984; Nyhus & Webley, 2001; Verplanken & Herabadi, 2001
7	Past experience	Burnett & Palmer, 1984; Gronroos, 2000; De Wulf et al., 2001
8	Price consciousness	Burnett & Palmer, 1984; Rihn, 2018; Ndawula et al., 2024
9	Health-conscious behaviour	Burnett & Palmer, 1984, Gould, 1988; Cherry & Asebedo, 2022

Table 5.1 shows the variables that were found to have a positive impact on life insurance selection, purchase, buying behaviour and type of policy selected in previous studies. Using these variables, a construct, 'Individual Lifestyle Construct' was created to consider the relevant factors in the psychographic profile of policyholders.

Psychographic questionnaires quantitatively capture qualitative details of consumers' lifestyles, attitudes, values and identity to form a holistic view of the person (Demby, 1993). These studies use a series of statements (list of psychographic statements) that are designed to recognize various relevant aspects of consumer's personality, buying motives, interests, attitudes, beliefs, and values. Likert Scales are the gold standard of the psychographics industry and according to the Journal of Clinical Health Psychology, 9 out of 10 behavioral studies use a Likert-type scale (Hartley, 2014). The respondents were asked to respond to the statements in 'Individual Lifestyle and Behaviour Construct' on a five-point Likert scale from strongly disagree to strongly agree. The measurement of psychographic profile of the policyholders using this scale are summarised in Table 5.2.

Table 5.2: Psychographic profile of policyholders

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I am willing to take risks if there is a scope for profit.	12 *(3.58)*	37 *(11.04)*	98 *(29.25)*	138 *(41.19)*	50 *(14.93)*
2. If there is a 50:50 chance of gaining Rs. 1000 and losing Rs. 500, I will take the chance.	18 *(5.37)*	71 *(21.19)*	115 *(34.33)*	103 *(30.75)*	28 *(8.36)*
3. I am ready to share my opinions with others even when they may disagree.	10 *(2.99)*	27 *(8.06)*	91 *(27.16)*	153 *(45.67)*	54 *(16.12)*
4. I believe life is decided by fate/ God and is outside of human control.	28 *(8.36)*	40 *(11.94)*	61 *(18.21)*	131 *(39.10)*	75 *(22.39)*
5. When buying something, I look at different options to compare price and quality.	8 *(2.39)*	17 *(5.07)*	51 *(15.22)*	168 *(50.15)*	91 *(27.16)*
6. I am regularly involved in community works.	18 *(5.37)*	50 *(14.93)*	104 *(31.04)*	131 *(39.10)*	32 *(9.55)*
7. I prefer spending time with others than alone.	27 *(8.06)*	57 *(17.01)*	83 *(24.78)*	124 *(37.01)*	44 *(13.13)*
8. I usually make decisions based on my past experiences.	12 *(3.60)*	15 *(4.50)*	50 *(14.93)*	188 *(56.12)*	50 *(20.90)*
9. I actively take care of my body for good health and fitness.	8 *(2.33)*	27 *(8.06)*	72 *(21.49)*	155 *(46.27)*	73 *(21.79)*
10. When buying something, price is the most important factor.	12 *(3.58)*	57 *(17.01)*	92 *(27.46)*	117 *(34.93)*	57 *(17.01)*

Source: Computed

*Figures in parenthesis show percentage

The highest majority among the policyholders was for information-seeking and influence of past experiences. 77.31% of the policyholders agreed that they looked at different options to compare price and quality when making a purchase, meaning that a majority of the policyholders are information seekers. Information seeking behavior involves a set of actions including seeking information, evaluating and selecting information and finally using this information (Kumar, 2021). This has further implications regarding the relevance of information provided by insurers. 77.01% of the respondents also base their decisions on past experiences. Past experience is a crucial determinant of present decisions, and customers link their previous experience of product, service, brand and other marketing dimensions with

current purchasing (De Wolf et al., 2001). Zeithaml et al. (1996) showed that previous service quality has a significant influence on customer loyalty, switching intentions, and complaint intentions across several different service and product situations. Even for online purchases, customers' previous internet experience is a strong determinant of their online shopping behaviour (Mohmed et al.,2013).

61.79% of the policyholders were assertive people, who agreed that they would share their opinions with others even they may disagree. Assertive individuals are more likely to voice both positive and negative opinions (Zeigler-Hill & Shackelford, 2016) and are more likely to own a life insurance policy. The health-conscious behaviour of respondents was considered to examine their lifestyle habit. More than three-fifths of the respondents (68.06%) agreed that they take good care of themselves to maintain their health. It can be understood that majority of policyholders take active care of their body as a lifestyle. Half of the respondents (51.94%) are price-conscious and agreed that price is the most important factor when making a purchase. Price consciousness is the degree to which the price of a product affects consumers purchasing behaviours. For them, the product's price is the main determinant of their purchase intentions and behaviour (Rihn et al., 2018). The respondents were mostly split in half when concerned with community work and socialization. 48.66% are regularly involved in community work and 50.15% prefer to spend time with others and socialize than spend time alone. Burnett and Palmer (1984) found that people who prioritized being involved in community activities owned more life insurance than those who did not and individuals who are low on the socialization scale have significantly larger amounts of life insurance.

Three-fifths of the policyholders (61.49%) have a fatalistic attitude, agreeing that life is decided by fate/ God and is outside of human control. Fatalism is the notion that individuals believe they lack the ability to determine their own outcome. Omar (2007) found that the culture of Nigerian society discourages Nigerians to buy life insurance. Nigerian society exhibits high fatalism orientation (believing in fate and submitting to destiny) and Nigerians often rely on family members or their relatives for aid in emergencies. The above findings revealed that individuals with high collectivistic values are less likely to buy life insurance. They emphasise on

commitment to care for the interests of their in-group members (e.g., extended family, tribe, or village) by protecting each other when they are in trouble. This is interesting as the culture in many North-East states is also collectivistic in nature, and Omar's description and explanation for low insurance ownership in societies high in fatalism is fairly similar to the problems discussed by insurance agents, which was discussed in Section 4.10.

Risk attitude is an important determinant of individual choice, and two methods have been put forward in recent economics- asking for the reservation price of a hypothetical lottery ticket (Donkers et al., 1999) and asking individuals to rate themselves on a scale of risk attitude, either in general or for specific domains of life (Dohmen et al., 2005). Ding et al. (2010) followed these studies and found that risk attitudes are domain specific, i.e., individuals may be risk averse, risk neutral or risk lovers depending on the situation and domain. The study presents two statements derived from these studies: one for self-assessment and the other specified for risk in the financial domain. Among the respondents, 56.12% agreed that they were willing to take risks of there is a scope for profit, implying that more than half of the policyholders are risk lovers. However, majority of the respondents (60.89%) would not take the risk of losing Rs.500 with a 50% chance of gaining double, Rs.1000. This suggests that the respondents are more risk-averse when it comes to financial decisions. Since life insurance purchase is a financial planning decision, it can be inferred that although many policyholders consider themselves as risk lovers generally, they tend to be risk-averse in financial situations. Previous studies have found that risk-averse individuals are more likely to purchase life insurance policies to cover the uncertainty of financial risk in the event of premature death (Pliska & Ye, 2007; Han & Hung, 2017; Wang, 2019).

5.3. Behavioral Biases of Policyholders

An important reason why behavioral insurance needs to be studied independently is the difference in decision making behaviour regarding insurance choices against other risky choices. A rational individual is able to determine the best

choice as a decision maker in life insurance, but psychological evidence suggests that individuals perceive risks differently in various contexts and also adapt different risk management solutions (Slovic et al., 1984). Kunreuther and Pauly (2016) found that consumers have difficulty in choosing whether to buy insurance or not. This difficulty is based on the non-rational behaviour of decision makers.

Under bounded rationality, i.e., rationality bounded by human abilities, individuals rely on certain cognitive functions for decision-making. Tversky & Kahneman (1974) distinguished two systems of reasoning, which are called System 1 and System 2. System 1 operates automatically and rapidly, and it requires little or no effort and is not amenable to voluntary control. System 2 is effortful, deliberate, and slow, and it requires mental activities that may be demanding, including complex calculation (Ogaki & Tanaka, 2018). Heuristics are a type of important intuitive judgment used by System 1 and can be defined as rules of thumb used for making judgments about probabilities, future outcomes, and so on. Gigerenzer and Todd (1999) explain that the mind has an "adaptive toolbox" for decision-making involving heuristics, which are simple rules enabling smart choices to be made using minimal information and exploiting the structure of information given the environmental context. Heuristics do not require careful deliberation, but neither are they irrational. Heuristics are common-sense rules of thumb derived from experience, and they may be procedurally rational because they are used by people to make relatively quick decisions in uncertain situations when a full assessment of available information is difficult and/or time-consuming (Gigerenzer & Goldstein, 1996). Although heuristics are generally reasonable decision-making tools, they may lead to mistakes if they are misapplied – what behavioral economists refer to as behavioral biases. A bias is a tendency to make judgmental errors. The heuristic and biases approach studies the heuristics people employ to form judgments and the associated biases in those judgments (Channa, 2016). Thus, the study includes the three heuristics introduced by Tversky and Kahneman (1974) and the common biases that have been found to be relevant in the existing literature. The variables were chosen based on the findings of previous studies, which are shown in Table 5.3.

Table 5.3: Individual Behaviour Construct

Sl.no	Behavioral biases	Sources
1	Availability	Kahneman and Tversky, 1974; Dobelli, 2014; Sum & Nordin, 2018
2	Representativeness	Kahneman and Tversky, 1974; Mallick, 2015
3	Anchoring	Kahneman and Tversky, 1974; Onsomu, 2014; Coe et al., 2016
4	Affect	Hsee & Kunreuther, 2000; Sunstein, 2002; Buzatu, 2013
5	Confirmation bias	Bashir et al., 2012; Channa, 2016
6	Herding effect	Baddeley, 2009; Sehgal & Tripathi, 2009; Kurniawan & Murhadi, 2018; Saxena & Ahuja, 2018
7	Social pressure	Channa, 2016; Giri, 2018; Lakshmi et al., 2022
8	Overconfidence	Veeraraghavan & Anbalagan, 2011; Qadri & Shabbir, 2014
9	Asymmetric information	Pauly, 1974; Chen et al., 2008; He, 2009; Colquitt et al., 2012

It is the purview of this study to investigate if any of the variables are relevant to the policyholders of life insurance in North-East India. A construct called 'Individual Behavior Construct' is created with 14 statements indicating a certain heuristic or bias, and respondents were asked to answer on a 5-point Likert scale ranging from "Strongly disagree" to "Strongly agree", indicating that respondents who agreed more with the statements exhibit and inhibit the described traits more. The policyholders' responses to these statements and are given in Table 5.4.

People judge the frequency of an event by the ease with which instances can be recalled. The availability heuristic substitutes the harder question 'How likely an event is?' with the easier question 'Have I seen something like this?'. The availability heuristic says that events that can be easily recalled are deemed to occur with higher probability and more attention is given to the most easily recalled information (Tversky & Kahneman, 1974). Availability causes insurance buyers to overestimate the likelihood of spectacular or loud events. Half of the respondents (53.73%) agreed that they had bought life insurance due to past experience or knowledge of other people who had benefitted from it. Moreover, 30.45% agreed that they purchased a policy after someone they knew had passed away due to an

accident/ unforeseen circumstance. Their decision was based on information that may not be relevant to their case as it was other people's decision and experience. It is easy information to recall and may be given more attention as the possibility of also claiming benefits is a desirable one, and lack of a policy under such circumstances would be avoided if possible. The recollection of other people's benefits clearly had an impact on decision making for half of the policyholders. Song et al. (2019) also found that the experience of the family member's death is positively correlated with life insurance ownership as the death results in the arousal of negative emotions, stimulating the demand for life insurance.

Table 5.4: Behavioral biases of policyholders

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I bought life insurance due to past experience/ knowledge of other people who had benefitted from it.	25 *(7.46)*	41 *(12.24)*	89 *(26.57)*	134 *(40.00)*	46 *(13.73)*
2. I bought life insurance after someone I knew passed away due to an accident/ unforeseen circumstance.	45 *(13.43)*	107 *(31.94)*	81 *(24.18)*	76 *(22.69)*	26 *(7.76)*
3. I bought a policy because the agent was successful with claims for previous other clients.	33 *(9.85)*	53 *(15.82)*	80 *(23.88)*	139 *(41.49)*	30 *(8.96)*
4. I looked at products that were more expensive before choosing the current policy.	27 *(8.06)*	93 *(27.76)*	104 *(31.04)*	93 *(27.76)*	18 *(5.37)*
5. There was an offer at the time when I purchased insurance.	77 *(22.99)*	122 *(36.42)*	78 *(23.28)*	44 *(13.13)*	14 *(4.18)*
6. The reputation of the company/ sales agent helped in my decision to buy the life insurance policy	10 *(2.99)*	43 *(12.84)*	91 *(27.16)*	134 *(40.00)*	57 *(17.01)*
7. I think life insurance policy is good for everyone.	7 *(2.09)*	17 *(5.07)*	63 *(18.81)*	154 *(45.97)*	94 *(28.06)*
8. I know people who had a negative experience with their insurance policy	27 *(8.06)*	87 *(25.97)*	92 *(27.46)*	87 *(25.97)*	42 *(12.54)*
9. I followed recommendations/ advice from others regarding purchase of life insurance/ financial products.	13 *(3.88)*	35 *(10.45)*	118 *(35.22)*	142 *(42.39)*	27 *(8.06)*
10. I trust the company because many people have good opinions about it.	7 *(2.09)*	19 *(5.67)*	88 *(26.27)*	167 *(49.85)*	54 *(16.12)*
11. I was persuaded to buy the insurance policy by the sales agent.	32 *(9.55)*	72 *(21.49)*	92 *(27.46)*	109 *(32.54)*	30 *(8.96)*
12. I am confident in my knowledge of insurance policies.	10 *(2.99)*	49 *(14.63)*	88 *(26.27)*	155 *(46.27)*	33 *(9.85)*
13. I know the difference between Term Plan,	35	66	87	98	49

Endowment Plan and ULIP.	*(10.45)*	*(19.70)*	*(25.97)*	*(29.25)*	*(14.63)*
14. I feel that the salesperson did not tell me all important information before I bought the policy	61 *(18.21)*	108 *(32.24)*	89 *(26.57)*	60 *(17.91)*	17 *(5.07)*

Source: Computed

*Figures in parenthesis show percentage

The representativeness heuristic is a principle of analogical reasoning in which people judge the similarity between events and processes to judge probability. Representativeness is evaluating the likelihood of an uncertain event by its degree of similarity to its parent population or by its ability to reflect the prominent features of the process generating the event. Representativeness also make people see pattern that is not there. Decision-makers make the connection as logical as possible from completely unexpected or unrelated events. The consequence of representativeness bias is an excessive willingness to predict the occurrence of an unlikely event (Galavotti et al., 2021). In the financial market, consumers often assume a good company makes good decisions, or that past performance predicts the future, which is not necessarily true. 50.45% of the respondents bought a policy because the agent was successful with claims for previous other clients. This makes them see a pattern with other clients that they wish to see for themselves, even though their cases may not be similar at all.

Anchoring and adjustment is a heuristic that involves making an initial estimate of a probability called an anchor, and then revising or adjusting it up or down in the light of new information (Tversky & Kahneman, 1974). This typically results in assessments that are determined by an anchor value or reference point. In the context of a life insurance purchase, the first policy introduced to the consumer will serve as an anchor for any other policies after. If the anchor is provided intentionally such as in a purchase-and-sale situation, the perception bias triggered by anchoring can lead to biased behaviour that may be in the interest of the person providing the anchor (Burton & Shah, 2013). As discussed in Section 4.11, agents are a significant source of information and influence purchase decisions for many consumers. If agents provide an anchor to make a particular policy look more attractive, it may lead to biased behaviour on the consumer's part. The anchor is just

not in the form of other policies, but different prices as well. It is an effective sales technique, as discounts or offers make a product more attractive to a consumer. Since the original higher price is the anchor and point of reference, the lower sales price makes the product more attractive. Among the policyholders, 33.13% looked at more expensive policies before choosing their current one, and before choosing the current policy and 17.31% bought a policy at a time when there were offers/ discounts. Since the price of the first viewed products or the initial price before offers act as the anchor in the perception of policyholders, this perception bias could guide their decision-making even if it is not the rational choice.

Affect is the instinctual reaction to a stimulus that occurs before the formation of a more complex emotion based on typical cognitive processes (Channa, 2016). People let their likes and dislikes determine their beliefs or preferences and refer to affective feelings when judging the risks and benefits of an activity. If they like an activity, it is perceived to have low risk and vice versa. One affect heuristic is the halo effect: favourable first impressions influence judgements. Halo effect causes people to look at a single quality to produce a positive or negative impression and obstructs people's view of true characteristics of a person, product or an organisation (Sum & Nordin, 2018). In the context of the study, a good reputation or good perception of the insurance company could influence decision making. 51.01% of the respondents agreed that the reputation of the company or sales agent helped in their decision to buy a life insurance policy, i.e., half of the respondents were influenced by the halo effect of the company or the agent that sold them their policy.

People tend to overlook information that is contrary to their views in favour of information that confirms their views, which is called confirmation bias. This affects how people gather information as well as how they interpret and recall information. When an individual supports or opposes a particular issue, he will not only seek information that confirms his beliefs, but also interpret news stories in a manner that upholds his existing ideas and recall things in a way that it reinforces these ideas (Channa, 2016). As much as 74.03% of the respondents agreed that life insurance policy was good for everyone, even though 38.51% had known people who had a negative experience with their life insurance policy. This implies that for

some policyholders who had known others with a negative experience, they still held to the thought that a life insurance policy was good for everyone, a belief they perpetuated even in the face of contradicting information.

Herding is the phenomenon of individuals deciding to follow others and imitating group behaviours rather than deciding independently on the basis of their own private information (Baddeley, 2009). Moving with the herd, however, magnifies psychological biases and induces consumers to decide on the "feel" of the herd rather than on rigorous independent analysis. This tendency is accentuated in the case of decisions involving high uncertainty (Channa, 2016). Insurance buyers feel they are making correct decisions by following the decision of the majority (Sum & Nordin, 2018). Half of the respondents (50.45%) agreed that they followed recommendations or advice from others regarding purchase of life insurance. Even more respondents (65.97%) agreed that they trusted the company because many people have good opinions about it. Then, many policyholders make financial decisions based on the advice of others and base their trust and purchase on the opinions of other people, even when these opinions are not based on any factual evidence.

Social pressures have a significant impact on individual decision and people tend to conform to social pressure, real or imaginary (Channa, 2016). Consumers are faced with more social pressure when they are familiar with the agents selling to them. As many as 41.49% were persuaded to buy the policy from the sales agent. The role of insurance agents and their social influence was discussed elaborately in Chapter 4. Overconfidence is a biased aspect that arises when a person exaggerates his ability. Most people display unrealistically rosy views of their abilities and prospects (Weinstein & Klein, 1996) and this overconfidence propels them to make less optimal choices. In the context of the study, customers may be overconfident in their knowledge of insurance products and refuse help and information from the agents. Although 56.12% of the respondents were confident in their knowledge of insurance policies, only 43.12% of respondents knew the difference between term, endowment and ULIP policies. This implies that some policyholders may overestimate their level of knowledge and are influenced by the overconfidence bias,

which keeps them from asking questions and seeking further information before making a purchase decision.

5.4. Factor Analysis of Psychographic Profiles

After examining the frequencies of responses regarding psychographic profile of life insurance policyholders, it is necessary to conduct thorough empirical tests to further explore their influence and relationship with policy ownership. The dimensional structure of the construct is examined using factor analysis. Factor analysis originated with Charles Spearman in 1904 on a paper he wrote on the theory of intelligence and is generally regarded as the beginning of latent variable modelling. Factor analysis is a multivariate statistical method which is used in the analysis of tables or matrices of correlation coefficients. It is usually applied to data where concern is with the description and interpretation of interdependencies within a single set of variables. It reduces the original set of variables to a smaller number of variables called factors and these factors acquire meaning because of structural properties that may exist within the set of relationships. Here, structure has the meaning as in Gestalt psychology, where it refers to the configurational properties of a percept or experience (Ferguson, 1966).

5.4.1 Internal consistency analysis of psychographic variables

Prior to the extraction of constructs, tests must be conducted to examine the adequacy of the sample and the suitability of data for factor analysis. We use Cronbach's alpha, Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of Sphericity to check for the internal consistency and sampling adequacy of our model construct. Alpha was developed by Lee Cronbach in 1951 to provide a measure of the internal consistency of a test or scale, expressed as a number between 0-1. Internal consistency describes the extent to which all the items in a test measure the same concept or construct and hence, it is connected to the inter-relatedness of the items within the test (Cronbach, 1951). Internal consistency should be determined

before a test can be employed for research or examination purposes to ensure validity. Alpha scores above 0.7 are generally taken to indicate a scale of high reliability, scores between 0.5-0.7 are generally accepted as indicating moderately reliable scale, while a figure below this generally indicates a scale of low reliability (Hinton et al., 2014).

The KMO ranges from 0-1 and values equal to or greater than 0.5 are considered suitable for factor analysis. Bartlett's test of Sphericity provides a chi-square output that must be significant ($p<0.05$) for factor analysis to be suitable (Tabachnick et al., 2018). The summary statistics and internal consistency test results of the profile are shown in table 5.5.

Table 5.5: Summary Statistics and tests of internal consistency and adequacy

Sl.no	Statement	Mean	SD
1	I am willing to take risks if there is a scope for profit.	3.53	0.99
2	If there is a 50% chance of gaining Rs. 1000 but there is a 50% chance of losing Rs. 500, I will take the chance.	3.16	1.02
3	I am ready to share my opinions with others even when they may disagree.	3.64	0.95
4	I believe life is decided by fate/ God and is outside of human control.	3.55	1.2
5	When buying something, I look at different options to compare price and quality.	3.95	0.92
6	I am regularly involved in community works.	3.33	1.02
7	I prefer spending time with others than alone	3.3	1.14
8	I usually make decisions based on my past experiences.	3.86	0.92
9	I actively take care of my body for good health and fitness.	3.77	0.96
10	When buying something, price is the most important factor.	3.45	1.07
Average score		**3.55**	**0.56**

	Tests of internal consistency and reliability	**Scores**
1	Cronbach's alpha	0.747
2	KMO Measure of Sampling Adequacy	0.755
3	Bartlett's Test of Sphericity	670.38***
	Significance	0.000

***significant

Source: Computed

Among the psychographic variables, the average score was highest for information seeking behaviour and past experience, and standard deviation was lowest for these variables. This indicates that the most consistent behaviour among the policyholders is information seeking behaviour and making purchase decisions based on past experiences. On the other hand, policyholders had lowest average scores for risk taking behaviour in financial domain, community involvement and socialization preference. Standard deviation is highest for fatalism, indicating that the policyholder's opinions of fatalism are diverse and relatively inconsistent. Cronbach's alpha is 0.747, which indicates a scale of high reliability. KMO value is 0.755 and Bartletts' Test statistic is significant ($p<0.001$), both indicating that the model construct has acceptable levels of reliability. It can thus be deduced that the variables have a strong internal consistency and meet the sampling adequacy requirements, i.e., the combination of the selected variables is statistically valid for a scale. To ensure that the selected group of variables exhibits the highest consistency, we use exploratory factor analysis.

5.4.2. PCA Analysis of psychographic variables

The study uses exploratory factor analysis to make sure that the items to measure our model construct (psychographic profile) are loading correctly on different factors. The study uses Principal Component Analysis (PCA) for factor extraction. Table 5.6 shows the communalities, factor loadings, eigenvalues and percentage of variance for the extracted components. Communalities are the proportion of the variance that is common to other variables in the set, i.e., how much of each variable is accounted for in the factor. Communalities below 0.2 and factor loadings below 0.3 are generally removed before the analysis continues. Once the factors are extracted, there are different criteria to assist the process of factor retention, the prominent ones being Kaiser's eigenvalue and Cumulative percentage of variance. According to Kaiser's method, constructs with eigenvalues greater than one ($K>1$) should be retained for interpretation and the proportion of total variance explained by the retained factors should be at least 50% (Taherdoost et al., 2014).

On observation of the rotated component matrix, it can be seen that the variables socialization preference, past experience, price consciousness and health-conscious behaviour are loaded on Component 1, variables fatalism, information-seeking behaviour and community involvement are loaded on Component 2 and variables risk-taking in general domain and risk-taking in financial domain are loaded on Component 3. Here, communalities are higher than 0.2 for all variables and there are no factor loadings below 0.3. The eigenvalues for all three components are above 1 and cumulative percentage of variance is 56.58%. Although the factors extracted meet the required criteria, it can be seen that assertiveness cross-loads on Component 2 and Component 3, and it is removed before further analysis.

Table 5.6: Exploratory factor analysis for Individual Lifestyle Construct

Sl.no	Statement	Communalities	Rotated Component Matrix		
			C- 1	C- 2	C-3
1	I am willing to take risks if there is a scope for profit.	.686	.154	.136	**.802**
2	If there is a 50% chance of gaining Rs. 1000 but there is a 50% chance of losing Rs. 500, I will take the chance.	.768	.172	.004	**.859**
3	I am ready to share my opinions with others even when they may disagree.	.640	-.002	.563	.568
4	I believe life is decided by fate/ God and is outside of human control.	.441	-.071	**.654**	.092
5	When buying something, I look at different options to compare price and quality	.563	.231	**.698**	.150
6	I am regularly involved in community works.	.454	.380	**.549**	-.090
7	I prefer spending time with others than alone.	.478	**.656**	.206	.072
8	I usually make decisions based on my past experiences.	.555	**.585**	.452	.089
9	I actively take care of my body for good health and fitness.	.536	**.722**	.067	.104
10	When buying something, price is the most important factor.	.537	**.707**	-.082	.175
Eigenvalues			**3.162**	**1.348**	**1.149**
Percentage of variance			**20.490**	**18.103**	**17.987**

Source: Computed

After removal of the cross-loaded variable, the components are extracted according to the factor loadings described above. These new components with the associated variables are further analysed using internal consistency and reliability tests, i.e., Cronbach's alpha, Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of Sphericity. The communalities, component loading, eigenvalue and percentage of variance for each of the components is also extracted. The results are presented in Table 5.7. This is to investigate the new constructs for confirmatory factor analysis (CFA) as in practice, EFA is often performed to select the useful underlying latent constructs for CFA when there is little prior knowledge about the latent construct (Cudeck & Odell, 1994; Tucker & MacCallum 1997). Further, the components were tested using three model fit indices that are widely applied for confirmatory factor analysis, all of which are based on a fit function given a specific estimation method, viz. Root mean square error of approximation (RMSEA), comparative fit index (CFI) and Tucker–Lewis index (TLI) (Xia & Yang, 2018). RMSEA is an absolute fit index, in that it assesses how far a hypothesized model is from a perfect model. On the contrary, CFI and TLI are incremental fit indices that compare the fit of a hypothesized model with that of a baseline model (i.e., a model with the worst fit). It is suggested that RMSEA values less than 0.05 are good, values between 0.05 and 0.08 are acceptable, values between 0.08 and 0.1 are marginal, and values greater than 0.1 are poor (Fabrigar et al., 1999). TLI and CFI scores above 0.9 are generally considered as acceptable fits (Bentler & Bonett, 1980). The results of these tests are also given in Table 5.7.

It can be seen that Component 1 and Component 3 have moderate reliability with alpha scores of 0.66 and 0.699, while Component 2 has low reliability with alpha score of 0.456 (Hinton et al., 2014). All of the components have KMO measures above 0.5 and significant scores on Bartlett's tests, indicating that all the new components are suitable for factor analysis. For every new component, each of the variables have communalities higher than 0.3 and high factor loadings. The RMSEA score is 0.07, which is considered an acceptable score. The CFI and TLI scores are 0.908 and 0.862 respectively, which are both acceptable fits for the model. Then, we can use these new components as reliable variables for further analysis.

Table 5.7: Confirmatory factor analysis for new constructs

Sl.no	Variable	Communalities	Component Matrix	Eigenvalues	Percentage of variance
	Personality and decision-making				
1	I prefer spending time with others than alone	0.460	0.679	1.997	49.921
2	I usually make decisions based on my past experiences.	0.528	0.727	0.738	
3	I actively take care of my body for good health and fitness.	0.526	0.725	0.643	
4	When buying something, price is the most important factor.	0.482	0.694	0.622	
Cronbach's alpha		0.66		KMO	0.727
Bartlett's Test of Sphericity		175.376***		Sig.	0.00
	Opinions and habits				
1	I believe life is decided by fate/ God and is outside of human control.	0.468	0.684	1.463	48.768
2	When buying something, I look at different options to compare price and quality.	0.621	0.788	0.881	
3	I am regularly involved in community works.	0.374	0.611	0.656	
Cronbach's alpha		0.456		KMO	0.558
Bartlett's Test of Sphericity		55.69***		Sig.	0.00
	Risk-taking attitude				
1	I am willing to take risks if there is a scope for profit.	0.769	0.877	1.538	76.877
2	If there is a 50% chance of gaining Rs. 1000 but there is a 50% chance of losing Rs. 500, I will take the chance.	0.769	0.877	0.462	
Cronbach's alpha		0.699		KMO	0.5
Bartlett's Test of Sphericity		113.39***		Sig.	0.00
	Model fit measures				
RMSEA: 0.07		**CFI**	**0.908**	**TLI**	**0.862**

***significant

Source: Computed

After validating the reliability of each new component derived from factor analysis, they are created accordingly, i.e., the averages of the loaded variables are

taken each of the three new components. These new constructed variables and the factors they encompass are:

- **Personality and decision making**- socialization preference, past experience, price consciousness, health-conscious behaviour
- **Opinions and habits** -fatalism, information seeking behaviour, community involvement
- **Risk taking attitude**- general risk taking, risk-taking in the financial domain.

5.4.3. New constructs for psychographic profile

Based on the new constructs, the psychographic profile and the three new variables are further recoded into different levels of relevance, i.e., low relevance, neutral relevance, moderate relevance and high relevance, using their respective mean and standard deviation. The grouping of variables in shown in Table 5.8, where X is the mean and SD is the standard deviation. The mean, standard deviation, frequency and percentage of the new constructs are shown in Table 5.9.

It can be observed that each of the constructs are normally distributed, and more than half of the policyholders show moderate to high relevance of all the new constructs; 52.2% for personality and decision making, 60.9% for attitude and habits and 50.7% for risk-taking attitude. For further examination of the psychographic profile, fig 5.1 shows the distribution of the policyholders' psychographic profile across sex, age, marital and family status, education, employment and income.

Table 5.8: Grouping of variables according to responses

Scale	Label
Below (X-SD)	Low relevance
(X-SD) - (X)	Neutral relevance
(X) - (X+SD)	Moderate relevance
Above (X+SD)	High relevance

Source: Computed

Table 5.9: Summary statistics of new constructs

Sl.no	Construct	Low relevance	Neutral relevance	Moderate relevance	High relevance	Average score	SD
1	Psychographic profile (overall)	41	120	134	40	2.52	0.86
		(12.2)	(35.8)	(40.0)	(11.9)		
2	Personality and decision making	50	110	131	44	2.50	0.90
		(14.9)	*(32.8)*	*(39.1)*	*(13.1)*		
3	Opinions and habits	39	92	139	65	2.69	0.92
		(11.6)	*(27.5)*	*(41.5)*	*(19.4)*		
4	Risk-taking attitude	37	128	128	42	2.52	0.85
		(11.0)	*(38.2)*	*(38.2)*	*(12.5)*		

*Figures in parenthesis are in percentage

Source: Computed

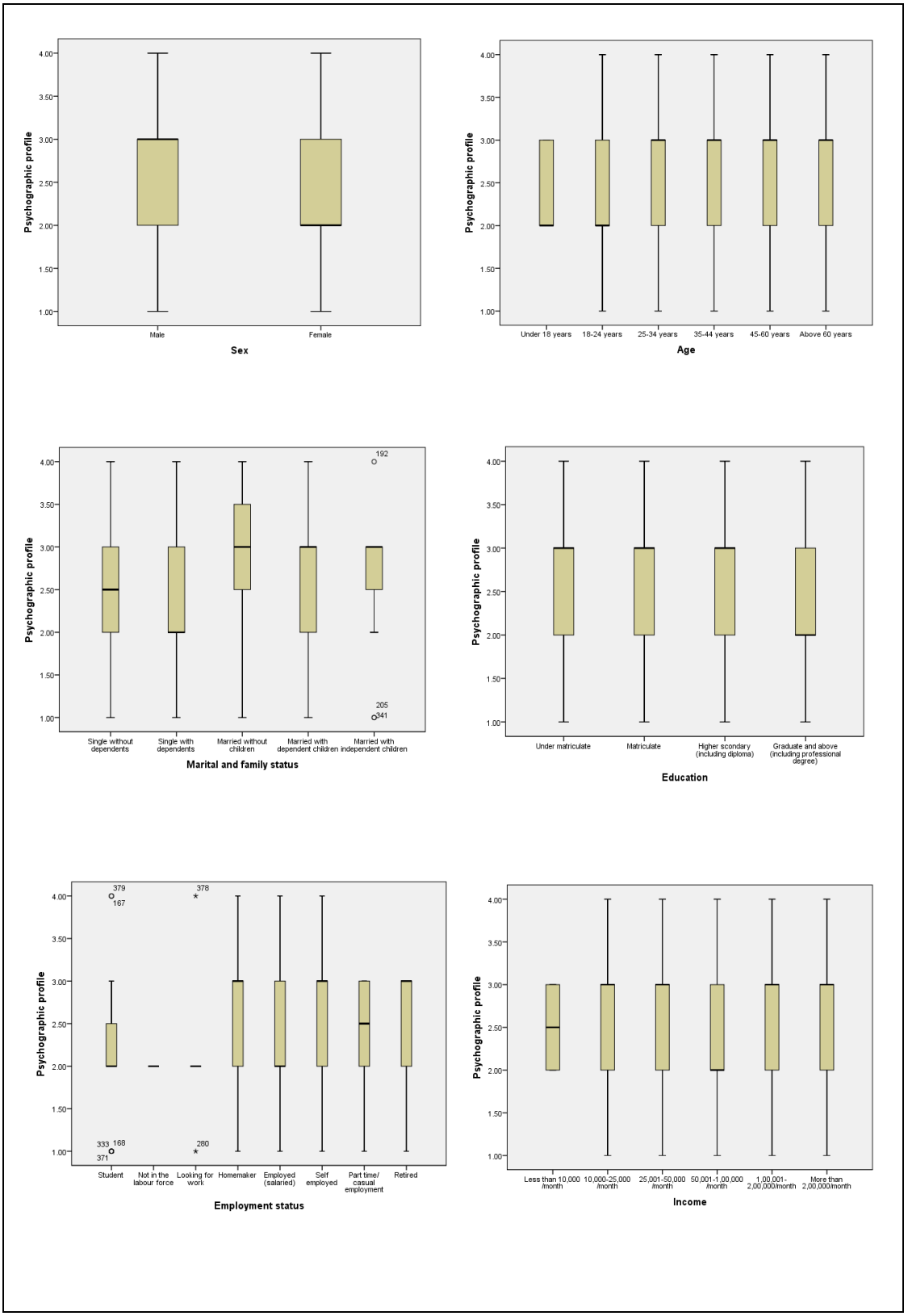


Fig 5.1: Boxplots showing the psychographic profile and demographics of

policyholders

It can be observed that the groups show very little differences in the minimum, maximum and interquartile range, i.e., the responses range from 1 to 4 and 50% of the responses were between 2 and 3. The median, marking the midpoint of the data, is in the lower quartile for males and in the upper quartile for females, showing that the psychographic traits may be more prevalent for men. Among the different age groups, the median is in the upper quartile for all the age groups above 25 years, indicating that they may show more of the psychographic traits. There is a bigger difference in the marital and family status, where the inter-quartile range is highest for the group that are married without children. Here, 50% of the responses lie between 2.5 and 3.5, indicating that the psychographic traits are more prevalent in this group. Respondents that are married with independent children show the smallest range, but also includes two outliers in the lower range and one outlier in the upper range. The median is at the centre of the inter-quartile range (2.5) for singles without dependents, lower (2) for singles with dependents, and higher (3) for the rest of the groups who are married. The different education levels show no differences, except that the median is lower for the category of graduates and above. Looking at the employment status of policyholders, students show the smallest range (2-3) with a few outliers, followed by part-time/ casual and retired groups (1-3). Among the income groups, the median is lowest (2) for monthly household income between Rs.50,000-Rs.1,00,000, followed by the group with monthly household income below Rs.10,000 (2.5). The relationship and interaction of the newly constructed variables with other indicators is further explored in the coming sections.

5.5. Factor Analysis of Behavioral Biases

As with the psychographic profile, factor analysis is employed to examine the structural properties that may exist within the set of variables.

5.5.1 Internal consistency analysis of bias variables

Before proceeding with factor analysis, internal consistency, adequacy of the sample and suitability of data is tested using Cronbach's alpha, Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of Sphericity. The summary statistics of the variables and the results of the tests are presented in table 5.10.

Among the behavioral biases, the average score was highest for confirmation bias, herding effect and overconfidence, and standard deviation was lowest for herding effect and confirmation bias. This indicates that the most consistent behaviour among the policyholders is herding effect and confirmation bias. On the other hand, policyholders had lowest average scores for anchoring effect, asymmetric information and availability bias. Standard deviation is highest for the overconfidence measure, indicating that there are diverse and inconsistent answers among the policyholders when it comes to the knowledge of life insurance products.

Cronbach's alpha is 0.80, which indicates a scale of high reliability. KMO value is 0.76 and Bartletts' Test statistic is significant ($p<0.001$), both indicating that the model construct has acceptable levels of reliability. It can thus be deduced that the variables have a strong internal consistency and meet the sampling adequacy requirements, i.e., the combination of the selected variables is statistically valid for a scale. To ensure that the selected group of variables exhibits the highest consistency, they are further examined using exploratory factor analysis.

Table 5.10: Summary statistics and tests of internal consistency and adequacy

Sl.no	Statement	Mean	SD
1	I bought life insurance due to past experience/ knowledge of other people who had benefitted from it.	3.40	1.10
2	I bought life insurance after someone I knew passed away due to an accident/ unforeseen circumstance.	2.79	1.16
3	I bought a policy because the agent was successful with claims for previous other clients.	3.24	1.13
4	I looked at products that were more expensive before choosing the current policy.	2.95	1.05
5	There was a discount/offer at the time when I purchased insurance.	2.39	1.10
6	The reputation of the company/ sales agent helped in my decision to buy the life insurance policy.	3.55	1.01
7	I think life insurance policy is good for everyone.	3.93	0.93
8	I know people who had a negative experience with their insurance policy.	3.09	1.16
9	I follow recommendations/ advice from others regarding decisions on financial products.	3.40	0.92
10	I trust the company because many people have good opinions about it.	3.72	0.87
11	I was persuaded to buy the insurance policy by the salesperson.	3.10	1.13
12	I am confident in my knowledge of insurance policies.	3.45	0.96
13	I know the difference between Term Plan, Endowment Plan and ULIP.	3.18	1.21
14	I feel that the salesperson did not tell me all important information before I bought the policy.	2.59	1.13
Average score		**3.20**	**1.06**

Tests of internal consistency and reliability		**Scores**
1	Cronbach's alpha	0.80
2	KMO Measure of Sampling Adequacy	0.76
3	Bartlett's Test of Sphericity	1342.55***
	Significance	0.00

***significant

Source: Computed

5.5.2. PCA analysis of bias variables

Principal Component Analysis (PCA) is used for factor extraction, and Table 5.11 shows the communalities, factor loadings, eigenvalues and percentage of variance for the extracted components.

Table 5.11: Exploratory factor analysis for Individual Behaviour Construct

Sl. no	Statement	Communalities	Rotated Component Matrix			
			C-1	C- 2	C- 3	C- 4
1	I bought life insurance due to past experience/ knowledge of other people who had benefitted from it.	0.704	**0.797**	0.233	-0.044	-0.117
2	I bought life insurance after someone I knew passed away due to an accident/ unforeseen circumstance.	0.386	**0.527**	0.080	0.177	0.264
3	I bought a policy because the agent was successful with claims for previous other clients.	0.564	0.394	0.034	-0.141	**0.623**
4	I looked at products that were more expensive before choosing the current policy.	0.582	**0.712**	0.102	0.208	0.146
5	There was a discount/offer at the time when I purchased insurance.	0.524	0.353	-0.164	**0.579**	0.194
6	The reputation of the company/ sales agent helped in my decision to buy the life insurance policy.	0.578	0.309	**0.622**	0.080	0.299
7	I think life insurance policy is good for everyone.	0.680	0.117	**0.748**	0.290	-0.150
8	I know people who had a negative experience with their insurance policy.	0.389	0.454	0.018	0.084	0.419
9	I follow recommendations/ advice from others regarding decisions on financial products.	0.427	**0.412**	0.320	0.173	0.353
10	I trust the company because many people have good opinions about it.	0.684	0.332	**0.696**	0.093	0.284
11	I was persuaded to buy the insurance policy by the salesperson.	0.798	-0.065	0.137	0.255	**0.843**
12	I am confident in my knowledge of insurance policies.	0.684	-0.011	0.481	**0.626**	0.245
13	I know the difference between Term Plan, Endowment Plan and ULIP.	0.716	0.086	0.227	**0.810**	-0.035
14	I feel that the salesperson did not tell me all important information before I bought the policy.	0.552	0.381	**-0.534**	0.345	0.053
Eigenvalues			**4.214**	**1.658**	**1.265**	**1.131**
Percentage of variance			**17.515**	**15.851**	**12.855**	**12.837**

Source: Computed

On observation of the rotated component matrix, it can be seen that communalities are higher than 0.2 for all variables and there are no factor loadings below 0.3. The variables availability heuristic, anchoring heuristic and herding effect are loaded on Component 1, the variables affect bias, confirmation bias and asymmetric information are loaded on Component 2 and variables framing bias and overconfidence bias are loaded on Component 3, and representativeness heuristic and social pressure bias are loaded on Component 4. Since statement number 8, the second expression for confirmation bias, cross-loads on Component 1 and Component 4, it is removed before further analysis. The four components fulfil the factor retention criteria, i.e., the eigenvalues for all four components are above 1 and cumulative percentage of variance is 59.058%. Since there are only two factors are loaded on Component 4, and it is recommended that there are at least 3 non-cross-loading items with acceptable loading scores, the fourth component is not taken into consideration for further analysis.

Accordingly, these new components are further examined using internal consistency and reliability tests, i.e., Cronbach's alpha, Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of Sphericity. The components were tested for confirmatory factor analysis using three model fit indices, viz. Root mean square error of approximation (RMSEA), comparative fit index (CFI) and Tucker–Lewis index (TLI). The results are shown in table 5.12.

Table 5.12 shows that components 1, 3 and 4 have high reliability with alpha scores of 0.669, 0.606 and 0.537, while Component 2 has low reliability with alpha score of 0.428 (Hinton et al., 2014). All of the components have KMO measures above 0.5 and significant scores on Bartlett's tests, indicating that all the new components are suitable for factor analysis. For every new component, each of the variables have communalities higher than 0.3 and acceptably high factor loadings. Thus, we can consider these new components as reliable and internally consistent variables for further analysis. The RMSEA, CFI AND TLI scores are 0.136, 0.738 and 0.649 respectively, which are considered a poor fit.

Table 5.12: Confirmatory factor analysis for new constructs

Sl.no	Statement	Communalities	Factor loading	Eigenvalues	Percentage of variance
	Heuristics and herding				
1	I bought life insurance due to past experience/ knowledge of other people who had benefitted from it.	0.582	0.763	2.012	50.305
2	I bought life insurance after someone I knew passed away due to an accident/ unforeseen circumstance.	0.506	0.712	0.783	
3	I looked at products that were more expensive before choosing the current policy.	0.554	0.744	0.671	
4	I follow recommendations/ advice from others regarding decisions on financial products.	0.370	0.608	0.535	
Cronbach's alpha		0.669		KMO	0.711
Bartlett's Test of Sphericity		189.713		Sig.	0.00
	Affect and information biases				
1	The reputation of the company/ sales agent helped in my decision to buy the life insurance policy.	0.613	0.783	1.986	49.660
2	I think life insurance policy is good for everyone.	0.638	0.799	0.976	
3	I trust the company because many people have good opinions about it.	0.674	0.821	0.570	
4	I feel that the salesperson did not tell me all important information before I bought the policy.	0.061	-0.247	0.468	
Cronbach's alpha		0.428		KMO	0.681
Bartlett's Test of Sphericity		218.942		Sig.	0.00
	Framing and confidence biases				
1	There was a discount/offer at the time when I purchased insurance.	0.323	0.568	1.707	56.910
2	I am confident in my knowledge of insurance policies.	0.643	0.802	0.855	
3	I know the difference between Term Plan, Endowment Plan and ULIP.	0.741	0.861	0.438	
Cronbach's alpha		0.606		KMO	0.553
Bartlett's Test of Sphericity		148.760		Sig.	0.00
	Model fit measures				
RMSEA: 0.136		**CFI**	**0.738**	**TLI**	**0.649**

***significant

Source: Computed

The new components derived from factor analysis are created accordingly, i.e., the averages of the loaded variables are taken for each of the new components. These new constructed variables are re-named as:

- **Heuristics and herding:** availability heuristic, anchoring heuristic, herding effect
- **Affect and information biases:** affect bias, confirmation bias, asymmetric information
- **Framing and confidence biases:** framing bias, overconfidence bias

5.5.3. New constructs for behavioral biases

Based on the new constructs, the total behavioral bias and the new constructs are further recoded into different levels of relevance, i.e., low relevance, neutral relevance, moderate relevance and high relevance, using their respective mean and standard deviation. The mean, standard deviation, frequency and percentage of the new constructs are shown in Table 5.13.

Table 5.13: Summary statistics of new constructs

Sl.no	Construct	Low relevance	Neutral relevance	Moderate relevance	High relevance	Average score	SD
1	Behavioral bias (overall)	41 *(12.24)*	130 *(38.81)*	116 *(34.63)*	48 *(14.33)*	2.51	0.89
2	Heuristics and herding	51 *(15.22)*	114 *(34.03)*	118 *(35.22)*	52 *(15.52)*	2.51	0.93
3	Affect and information biases	51 *(15.22)*	114 *(34.03)*	118 *(35.22)*	52 *(15.52)*	2.53	0.87
4	Framing and confidence biases	54 *(16.12)*	76 *(22.69)*	155 *(46.27)*	50 *(14.93)*	2.60	0.93

*Figures in parenthesis are in percentage
Source: Computed

It can be observed that the new constructs show moderate to high relevance of roughly half of the policyholders; 48.96% for heuristics and herding, and 50.74%

each for affect and information biases and framing and confidence biases. For further examination of the biases, fig 5.2 shows the distribution of the behavioral biases across sex, age, marital and family status, education, employment and income.

Most of the responses have the same range and inter-quartile range (IQR), i.e., majority of the responses lie from 1-4 with the exception of outliers and 50% of the responses lie between 2-3. There are no differences the sexes, although there are differences between the age groups. The IQR is smallest for policyholders below 18 years with two outliers and largest for policyholders between 18-24, indicating that the responses are least dispersed for the former and most dispersed for the latter. The median is highest (3) for the policyholders between the ages 25-60. Policyholders who are married without children show the largest IQR, and the more diverse responses also result in a higher median than the other categories. There are slight differences in education levels, with matriculates showing the lowest maximum at 3. It can be seen that for employment status, the responses of homemakers are skewed to the left, with 50% of the responses falling between 2 and 4. At the same time, the responses of policyholders looking for work or are employed casually/ part-time are skewed to the right, with 50% of the responses falling between 1 and 3. Moreover, these three groups show larger IQRs, indicating that responses are more dispersed than the other groups. The retired group also shows the smallest maximum at 3. It can then be stipulated that there are differences in the behavioral biases of policyholders with different employment status, which is further studied in the next sections. There are no significant differences among income groups, but IQR is smallest for the households with monthly income less than Rs.10,000, indicating smaller dispersion than other groups. Additionally, median is highest for households with monthly income between Rs.1,00,000- Rs.2,00,000, indicating that behavioral biases are more prevalent in this group than the others. The relationship and interaction of behavioral biases with other indicators is explored in the coming sections.

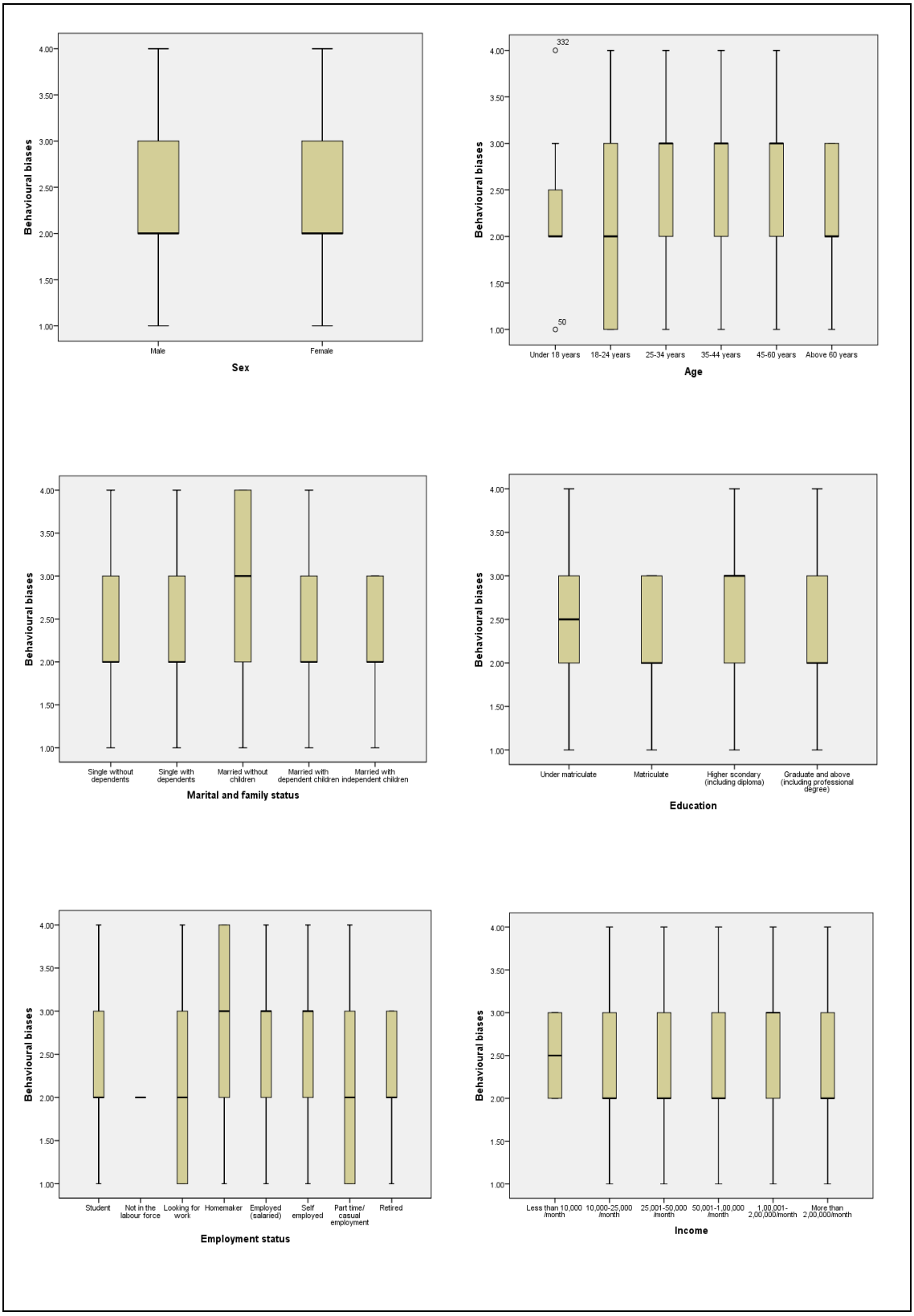


Fig 5.2: Boxplots showing behavioral biases and demographics of policyholders

5.6. Implications of Psychological Profile on Life Insurance Policy Selection

The scales used to study psychographic profile and behavioral biases of policyholders are confirmed to have good internal consistency and the variables considered for the study have been reduced to fewer relevant components which will be used for further analysis. These components will be used to examine holding patterns or associations with the distribution of different policies, duration of policies and the premium paid on those policies. The study attempts to find if there are any significant relationships between these psychological variables and life insurance ownership. Since many of the indicators are categorical variables, we use the Chi-square test of independence which determines whether there is an association between categorical variables (i.e., whether the variables are independent or related). The use and significance of Chi-square test of independence was explained in Chapter 4. The association of the two variables is considered significant if the p-value is lower than the chosen significance level ($\alpha = 0.05$).

The contingency tables are examined to identify distribution patterns across the variables, and the strength of association between two categorical variables is examined using Cramer's V and Contingency Coefficient. Cramer's V is the most popular of the chi-square-based measures of nominal association and varies between 0 and 1 without any negative values; a value close to 0 means no association. However, a value bigger than 0.15 is named as a strong relationship for the Cramer's V. The contingency coefficient is computed as the square root of chi-square divided by chi-square plus n, the sample size. The contingency coefficient will be always less than 1 and will be approaching 1.0 only for large tables. The larger the contingency coefficient, the stronger the association.

5.6.1. Selection of policy

The type of policy chosen by consumers is examined with the extracted variables of psychographic profile and behavioral biases. The contingency tables, Pearson Chi-square and symmetric measures of Chi-square test for the three different psychographic variables are given in Table 5.14, 5.15 and 5.16. Due to the selection

criteria that any 80% of cells should have a minimum of 5 observations, the group policies and 'Do not know' categories have been removed to perform the Chi-square test.

Table 5.14: Policy type with personality and decision making

Policy type	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Term policy	16	26	31	14	87
	18.39%	*29.89%*	*35.63%*	*16.09%*	*100%*
Whole life policy	0	5	4	2	11
	0.00%	*45.45%*	*36.36%*	*18.18%*	*100%*
Endowment policy	18	44	36	10	108
	16.67%	*40.74%*	*33.33%*	*9.26%*	*100%*
Moneyback policy	20	34	54	13	121
	16.53%	*28.10%*	*44.63%*	*10.74%*	*100%*
Unit linked insurance policy	4	11	23	12	50
	8.00%	*22.00%*	*46.00%*	*24.00%*	*100%*
Pension policy	2	9	4	2	17
	11.76%	*52.94%*	*23.53%*	*11.76%*	*100%*
Total	60	129	152	53	394
	15.23%	*32.74%*	*38.58%*	*13.45%*	*100%*
Pearson Chi-Square	22.64		Sig.		.092
Cramer's V	.138		Contingency Coefficient		.233

Source: Computed
****significant*

Table 5.14 shows that Personality and decision-making characteristics of policyholders is most relevant to Unit linked insurance policies (ULIP) as 70% of the respondents had moderate to high scores for this policy. The majority of respondents showed characteristics associated with Personality and decision-making for whole life policies (54.55%), moneyback policies (53.37%) and term policies (51.72%). However, the Pearson Chi-square is not statistically significant at 95% confidence level. The values of Cramer's V and contingency coefficient also indicate that there is no strong association between policy type and 'Personality and decision-making'.

Table 5.15: Policy type with opinions and habits

Policy type	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Term policy	10	25	29	23	87
	11.49%	*28.74%*	*33.33%*	*26.44%*	*100%*
Whole life policy	1	4	4	2	11
	9.09%	*36.36%*	*36.36%*	*18.18%*	*100%*
Endowment policy	9	25	59	15	108
	8.33%	*23.15%*	*54.63%*	*13.89%*	*100%*
Moneyback policy	14	27	53	27	121
	11.57%	*22.31%*	*43.80%*	*22.31%*	*100%*
Unit linked insurance policy	8	20	13	9	50
	16.00%	*40.00%*	*26.00%*	*18.00%*	*100%*
Pension policy	2	1	11	3	17
	11.76%	*5.88%*	*64.71%*	*17.65%*	*100%*
Total	44	102	169	79	394
	11.17%	*25.89%*	*42.89%*	*20.05%*	*100%*
Pearson Chi-Square	24.983***		Sig.		.050
Cramer's V	.145		Contingency Coefficient		.244

Source: Computed
*****significant*

Table 5.15 shows that for the second psychographic variable 'Opinions and habits', the Pearson Chi-square statistic is 24.983 and is significant at 5% level of significance (p=0.50), i.e., there is an association between policy type and opinions and habits of policyholders. Further looking at the distribution, the majority of respondents showed a moderate to high relevance for the characteristics in this variable except for Unit-linked insurance policies, for which 56% did not exhibit these characteristics. Among the different policy types, respondents with pension policies showed the highest relevance of opinions and habits at 82.35%, followed by endowment policies (68.52%), moneyback policies (66.12%) and term policies (59.77%).

Table 5.16: Policy type with risk-taking attitude

Policy type	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Term policy	14	28	27	18	87
	16.09%	*32.18%*	*31.03%*	*20.69%*	*100%*
Whole life policy	1	5	4	1	11
	9.09%	*45.45%*	*36.36%*	*9.09%*	*100%*
Endowment policy	14	41	47	6	108
	12.96%	*37.96%*	*43.52%*	*5.56%*	*100%*
Moneyback policy	13	46	45	17	121
	10.74%	*38.02%*	*37.19%*	*14.05%*	*100%*
Unit linked insurance policy	2	15	24	9	50
	4.00%	*30.00%*	*48.00%*	*18.00%*	*100%*
Pension policy	1	9	7	0	17
	5.88%	*52.94%*	*41.18%*	*0.00%*	*100%*
Total	45	144	154	51	394
	11.42%	*36.55%*	*39.09%*	*12.94%*	*100%*
Pearson Chi-Square	22.683		Sig.		.091
Cramer's V	.139		Contingency Coefficient		.233

Source: Computed
****significant*

As for risk-taking attitude of the policyholders, there is no statistically significant association with policy choice (p=0.91) as shown in Table 5.16. However, the contingency table shows that as much as 66% of ULIP policyholders showed the characteristics of risk-taking behaviour, which is congruent with the knowledge that ULIP policies involve higher risks and returns as compared to the rest of the policies. More than half of the respondents showed risk-taking attitude for term policies (51.72%) and moneyback policies (51.24%), both of which are designed for investment purposes. This implies that the policyholders with investment instruments are higher in risk-taking attitudes.

The contingency tables, Pearson Chi-square and symmetric measures of Chi-square test for the three extracted behavioral bias components are given in Table 5.17, 5.18 and 5.19.

Table 5.17: Policy type with heuristics and herding

Policy type	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Term policy	14	22	34	17	87
	16.09%	*25.29%*	*39.08%*	*19.54%*	*100%*
Whole life policy	4	2	4	1	11
	36.36%	*18.18%*	*36.36%*	*9.09%*	*100%*
Endowment policy	15	44	39	10	108
	13.89%	*40.74%*	*36.11%*	*9.26%*	*100%*
Moneyback policy	19	39	45	18	121
	15.70%	*32.23%*	*37.19%*	*14.88%*	*100%*
Unit linked insurance policy	8	12	20	10	50
	16.00%	*24.00%*	*40.00%*	*20.00%*	*100%*
Pension policy	3	6	6	2	17
	17.65%	*35.29%*	*35.29%*	*11.76%*	*100%*
Total	63	125	148	58	394
	15.99%	*31.73%*	*37.56%*	*14.72%*	*100%*
Pearson Chi-Square	13.82		Sig.		.539
Cramer's V	.108		Contingency Coefficient		.184

Source: Computed
****significant*

As indicated by the Pearson Chi-square test in Table 5.17, there is no association between policy type and the policyholders' heuristics and herding (p=0.539). On examination of the distribution pattern, it can be seen that as much as 60% of ULIP policyholders show the characteristics of heuristics and herding. More than half of the policyholders with term policies (58.62%) and moneyback policies (52.07%) also show this behaviour.

For the contingency table of policy type with affect and information biases, the column for low relevance was removed as there were not enough observations (n<5) in 80% of the cells, leaving 393 of the 401 policies. There is no statistically significant association between policy type and affect and information biases of the respondents (p=0.203). The contingency table shows that a large number of policyholders exhibit the traits associated with affect and information biases across all the policies.

Table 5.18: Policy type with affect and information biases

Policy type	Neutral relevance	Moderate relevance	High relevance	Total
Term policy	4	26	57	87
	4.60%	*29.89%*	*65.52%*	*100%*
Whole life policy	2	2	7	11
	18.18%	*18.18%*	*63.64%*	*100%*
Endowment policy	6	36	66	108
	5.56%	*33.33%*	*61.11%*	*100%*
Moneyback policy	9	33	78	120
	7.50%	*27.50%*	*65.00%*	*100%*
Unit linked insurance policy	5	24	21	50
	10.00%	*48.00%*	*42.00%*	*100%*
Pension policy	2	5	10	17
	11.76%	*29.41%*	*58.82%*	*100%*
Total	28	126	239	393
	7.12%	*32.06%*	*60.81%*	*100%*
Pearson Chi-Square	13.379	Sig.		.203
Cramer's V	.130	Contingency Coefficient		.181

Source: Computed
****significant*

Table 5.19: Policy type with framing and confidence biases

Policy type	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Term policy	11	24	33	19	87
	12.64%	*27.59%*	*37.93%*	*21.84%*	*100%*
Whole life policy	1	5	4	1	11
	9.09%	*45.45%*	*36.36%*	*9.09%*	*100%*
Endowment policy	13	55	27	13	108
	12.04%	*50.93%*	*25.00%*	*12.04%*	*100%*
Moneyback policy	21	57	23	20	121
	17.36%	*47.11%*	*19.01%*	*16.53%*	*100%*
Unit linked insurance policy	11	19	17	3	50
	22.00%	*38.00%*	*34.00%*	*6.00%*	*100%*
Pension policy	4	8	3	2	17
	23.53%	*47.06%*	*17.65%*	*11.76%*	*100%*
Total	61	168	107	58	394
	15.48%	*42.64%*	*27.16%*	*14.72%*	*100%*
Pearson Chi-Square	26.555***		Sig.		.033
Cramer's V	.150		Contingency Coefficient		.251

Source: Computed
****significant*

Table 5.19 shows that the Pearson chi-square test statistic is 26.555 there is a statistically significant relationship between policy choice and framing and confidence biases (p=0.033). The symmetric measures, Cramer's V and Contingency coefficient, are 0.15 and 0.25 respectively. These scores indicate that there is a strong relationship between the two variables. Further looking at the distribution across the contingency table, more than half (59.77%) of the respondents with a term policy show high scores for framing and overconfidence biases. On the other hand, among the 17 pension policy owners, as much as 70.59% did not show high scores.

Thus, it is found that among the extracted variables for psychographic profile and behavioral biases, policy choice has a statistically significant association with opinions and habits, as well as framing and overconfidence biases of the policyholders. It can be interpreted that for the life insurance policyholders in North-East India, there is an association between the type of policy they choose and their beliefs on fatalism, habits of information-seeking behaviour and community involvement, overconfidence and the framing of the policy that was sold to them.

5.6.2. Selection of policy duration

The association between policy duration and the extracted variables from psychographic profiles and behavioral biases is examined in this section. The contingency tables, Pearson Chi-square and symmetric measures of Chi-square test for the extracted variables and policy duration are given in Table 5.20, 5.21 and 5.22.

The Pearson Chi-square statistic is 11.269, and there is no association between policy duration and personality and decision making (p=0.506). Then, the two variables are independent of each other. From the contingency table, it is seen that the psychographics associated with personality and decision-making are spread quite evenly between low to neutral and moderate to high relevance across all the different policy durations.

Table 5.20: Policy duration with personality and decision making

Policy duration	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Below 10 years	21	27	41	14	103
	20.39%	*26.21%*	*39.81%*	*13.59%*	*100%*
10-15 years	16	33	43	18	110
	14.55%	*30.00%*	*39.09%*	*16.36%*	*100%*
15-20 years	14	31	32	13	90
	15.56%	*34.44%*	*35.56%*	*14.44%*	*100%*
20-30 years	8	32	29	6	75
	10.67%	*42.67%*	*38.67%*	*8.00%*	*100%*
30 years and more	2	10	9	2	23
	8.70%	*43.48%*	*39.13%*	*8.70%*	*100%*
Total	61	133	154	53	401
	15.21%	*33.17%*	*38.40%*	*13.22%*	*100%*
Pearson Chi-Square	11.269		Sig.		.506
Cramer's V	.097		Contingency Coefficient		.165

Source: Computed
****significant*

Table 5.21: Policy duration with opinions and habits

Policy duration	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Below 10 years	16	26	37	24	103
	15.53%	*25.24%*	*35.92%*	*23.30%*	*100%*
10-15 years	10	31	49	20	110
	9.09%	*28.18%*	*44.55%*	*18.18%*	*100%*
15-20 years	11	21	37	21	90
	12.22%	*23.33%*	*41.11%*	*23.33%*	*100%*
20-30 years	4	17	44	10	75
	5.33%	*22.67%*	*58.67%*	*13.33%*	*100%*
30 years and more	4	8	6	5	23
	17.39%	*34.78%*	*26.09%*	*21.74%*	*100%*
Total	45	103	173	80	401
	11.22%	*25.69%*	*43.14%*	*19.95%*	*100%*
Pearson Chi-Square	16.878		Sig.		.154
Cramer's V	.118		Contingency Coefficient		.201

Source: Computed
****significant*

From Table 5.21, it can be seen that for all the policy durations except for '30 years and more', more than half of the respondents showed moderate to high relevance of 'Opinions and habits.' Among them, 72% of the respondents with a

policy duration of 20-30 years showed the characteristics associated with opinions and habits, followed by respondents with a policy duration of 15-20 years (64.44%), and respondents with a policy duration of 10-15 years (62.73%). There is no statistically significant relationship between the two examined variables as indicated by the Pearson chi-square test (p=0.154).

Table 5.22: Policy duration with risk-taking attitude

Policy duration	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Below 10 years	4	34	47	18	103
	3.88%	*33.01%*	*45.63%*	*17.48%*	*100%*
10-15 years	14	48	34	14	110
	12.73%	*43.64%*	*30.91%*	*12.73%*	*100%*
15-20 years	13	33	33	11	90
	14.44%	*36.67%*	*36.67%*	*12.22%*	*100%*
20-30 years	11	22	36	6	75
	14.67%	*29.33%*	*48.00%*	*8.00%*	*100%*
30 years and more	5	11	5	2	23
	21.74%	*47.83%*	*21.74%*	*8.70%*	*100%*
Total	47	148	155	51	401
	11.72%	*36.91%*	*38.65%*	*12.72%*	*100%*
Pearson Chi-Square	22.22***		Sig.		.035
Cramer's V	.136		Contingency Coefficient		.229

Source: Computed
****significant*

Table 5.22 shows that there is a statistically significant association between policy duration and risk-taking attitude (p=0.035). Cramer's V is 0.136, which is considered a moderate association and Contingency coefficient is 0.229, which is considered a strong association. The contingency table shows that of the 401 policies in the study, the owners of 206 policies (51.37%) showed traits of risk-taking behaviour. For respondents with policies less than 10 years, 63.11% showed risk-taking behaviour while for respondents with policies between 20 and 30 years, 56% showed risk-taking behaviour.

The contingency tables, Pearson Chi-square and symmetric measures of Chi-square test for policy duration and the three extracted behavioral bias components are given in Table 5.23, 5.24 and 5.25.

Table 5.23: Policy duration with heuristics and herding

Policy duration	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Below 10 years	15	23	49	16	103
	14.56%	*22.33%*	*47.57%*	*15.53%*	*100%*
10-15 years	14	36	43	17	110
	12.73%	*32.73%*	*39.09%*	*15.45%*	*100%*
15-20 years	16	30	29	15	90
	17.78%	*33.33%*	*32.22%*	*16.67%*	*100%*
20-30 years	16	30	23	6	75
	21.33%	*40.00%*	*30.67%*	*8.00%*	*100%*
30 years and more	2	12	5	4	23
	8.70%	*52.17%*	*21.74%*	*17.39%*	*100%*
Total	63	131	149	58	401
	15.71%	*32.67%*	*37.16%*	*14.46%*	*100%*
Pearson Chi-Square	19.269		Sig.		.082
Cramer's V	.127		Contingency Coefficient		.214

Source: Computed
****significant*

Table 5.23 shows that more than half of the policyholders (51.62%) show the characteristics of heuristics and herding. Among the 103 policies with duration less than 10 years, 63.11% showed traits of heuristics and herding in the respondents, and among the 110 policies with duration of 10-15 years, 54.55% of the respondents showed these traits. The Pearson chi-square statistic implies that there is no statistically significant association between policy duration and heuristics and herding (p=0.082).

Table 5.24: Policy duration with affect and information biases

Policy duration	Neutral relevance	Moderate relevance	High relevance	Total
Below 10 years	7	38	58	103
	6.80%	*36.89%*	*56.31%*	*100%*
10-15 years	7	35	67	109
	6.42%	*32.11%*	*61.47%*	*100%*
15-20 years	9	22	59	90
	10.00%	*24.44%*	*65.56%*	*100%*
20-30 years	3	25	47	75
	4.00%	*33.33%*	*62.67%*	*100%*
30 years and more	2	7	14	23
	8.70%	*30.43%*	*60.87%*	*100%*
Total	28	127	245	400
	7.00%	*31.75%*	*61.25%*	*100%*
Pearson Chi-Square	5.43	Sig.		.711
Cramer's V	.082	Contingency Coefficient		.116

Source: Computed
****significant*

Looking at affect and information biases, it can be observed in table 5.24 that the column for low relevance was removed as there were not enough observations (n<5) in 80% of the cells, leaving 400 of the 401 policies. There is no statistically significant association between policy duration and affect and information biases (p=0.711). A high majority of the policyholders exhibit the characteristics of affect and information biases: 96% for a policy of 20-30 years, 93.58% for a policy of 10-15 years, 93.20% for a policy below 10 years, 91.30% for a policy of 30 years and more, and 90% for a policy of 15-20 years.

Table 5.25 shows that there is no statistically significant association between policy duration and framing and confidence biases (p=0.356). The majority of policyholders do not show the traits association with this variable, irrespective of the policy duration. Of the total policies, respondents with 168 policies (41.90%) show framing and confidence biases. Among the different policy durations, the respondents with policies of 20-30 years show the least traits (38.67%) of framing and confidence biases.

Table 5.25: Policy duration with framing and confidence biases

Policy duration	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Below 10 years	23	39	28	13	103
	22.33%	*37.86%*	*27.18%*	*12.62%*	*100%*
10-15 years	12	46	37	15	110
	10.91%	*41.82%*	*33.64%*	*13.64%*	*100%*
15-20 years	10	44	19	17	90
	11.11%	*48.89%*	*21.11%*	*18.89%*	*100%*
20-30 years	14	32	19	10	75
	18.67%	*42.67%*	*25.33%*	*13.33%*	*100%*
30 years and more	2	11	7	3	23
	8.70%	*47.83%*	*30.43%*	*13.04%*	*100%*
Total	61	172	110	58	401
	15.21%	*42.89%*	*27.43%*	*14.46%*	*100%*
Pearson Chi-Square	13.181		Sig.		.356
Cramer's V	.105		Contingency Coefficient		.178

Source: Computed
****significant*

Thus, after examining the association between policy duration and psychographic and behavioral variables, it can be concluded that there is a significant association between policy duration and risk-taking attitude. This includes risk-taking in general and in financial domains. It can also be observed that respondents with policy durations below 10 years show the highest scores for risk-taking behaviour. It can be implied that since policies with longer durations involve lower risks and long-term financial planning, policyholders with higher risk-taking behaviour would prefer policies with shorter durations.

5.6.3. Selection of annual premium

The annual premium paid on a policy is dependents on many factors including the type of policy, duration, consumer preference, etc. This section examines the association of annual premium with the extracted variables for psychographic profile and behavioral biases. The results of the tests of association with psychographic variables are given in Tables 5.26, 5.27 and 5.28. It can be observed that the category 'Above Rs.5,00,000' has been removed from the annual

premium rows as there are too few observations (n<5) in 80% of the cells, and do not meet the requirements for Chi-square tests of independence. Then, out of the total 401 policies in the study, 395 are included in the examination of this section.

Table 5.26: Annual premium with personality and decision making

Premium amount	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Less than Rs.10,000	5	21	19	2	47
	10.64%	*44.68%*	*40.43%*	*4.26%*	*100%*
Rs.10,000-Rs.50,000	35	85	98	34	252
	13.89%	*33.73%*	*38.89%*	*13.49%*	*100%*
Rs.50,000-Rs.1,00,000	10	17	18	9	54
	18.52%	*31.48%*	*33.33%*	*16.67%*	*100%*
Rs.1,00,000-Rs.5,00,000	9	9	16	8	42
	21.43%	*21.43%*	*38.10%*	*19.05%*	*100%*
Total	59	132	151	53	395
	14.94%	*33.42%*	*38.23%*	*13.42%*	*100%*
Pearson Chi-Square	10.86		Sig.		.285
Cramer's V	.096		Contingency Coefficient		.164

Source: Computed
****significant*

Table 5.26 shows that in cross-tabulating annual premium and personality and decision-making, there is no statistically significant association between the two as indicated by the Pearson Chi-square test (p=0.285). Of the total policies, the owners of 204 policies (51.65%) show traits associated with personality and decision-making. Roughly half of the respondents showed these traits for every category of annual premium except for the policies with annual premiums less than Rs.10,000: 57.14% for annual premiums of Rs.1,00,000-Rs.5,00,000, 52.38% for annual premiums of Rs.10,000-Rs.50,000, and 50% for annual premiums of Rs.50,000-Rs.1,00,000.

Table 5.27: Annual premium with opinions and habits

Premium amount	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Less than Rs.10,000	3	13	25	6	47
	6.38%	*27.66%*	*53.19%*	*12.77%*	*100%*
Rs.10,000-Rs.50,000	28	66	106	52	252
	11.11%	*26.19%*	*42.06%*	*20.63%*	*100%*
Rs.50,000-Rs.1,00,000	7	13	25	9	54
	12.96%	*24.07%*	*46.30%*	*16.67%*	*100%*
Rs.1,00,000-Rs.5,00,000	6	10	17	9	42
	14.29%	*23.81%*	*40.48%*	*21.43%*	*100%*
Total	44	102	173	76	395
	11.14%	*25.82%*	*43.80%*	*19.24%*	*100%*
Pearson Chi-Square	4.566		Sig.		.870
Cramer's V	.062		Contingency Coefficient		.107

Source: Computed
****significant*

Looking at the opinions and habits of policyholders, almost two thirds (63.04%) show the traits associated with opinions and habits, and the distribution across different categories of annual premium does not vary by much; 65.96% for annual premium less than Rs.10,000, 62.70% for annual premium of Rs.10,000-Rs.50,000, 62.96% for annual premium of Rs.50,000-Rs.1,00,000, and 61.9% for annual premium of Rs.1,00,000-Rs.5,00,000. The results of Chi-square statistic imply that there is no statistically significant association between annual premium and opinions and habits of policyholders (p=0.870).

The contingency table 5.28 shows that the Pearson Chi-square is 26.605 and is statistically significant at 5% level of significance (p=0.002). This implies that there is an association between the annual premium and risk-taking attitude of policyholders. The effect sizes, Cramer's V and contingency coefficient, are 0.150 and 0.251 respectively, both indicating that there is a strong relationship between the two variables. Out of the total policies, half of the policyholders (50.89%) show traits of risk-taking behaviour. The policyholders paying annual premium of Rs.1,00,000-Rs.5,00,000 show the highest risk-taking behaviour (61.9%), followed by policyholders paying annual premium of Rs.10,000-Rs.50,000 (51.59%). On the

other hand, majority of the policyholders paying premium less than Rs.10,000 (55.32%) and policyholders paying annual premium of Rs.50,000-Rs.1,00,000 (55.56%) do not show traits of risk-taking behaviour.

Table 5.28: Annual premium with risk-taking attitude

Premium amount	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Less than Rs.10,000	5	21	20	1	47
	10.64%	*44.68%*	*42.55%*	*2.13%*	*100%*
Rs.10,000-Rs.50,000	33	89	104	26	252
	13.10%	*35.32%*	*41.27%*	*10.32%*	*100%*
Rs.50,000-Rs.1,00,000	7	23	16	8	54
	12.96%	*42.59%*	*29.63%*	*14.81%*	*100%*
Rs.1,00,000-Rs.5,00,000	2	14	12	14	42
	4.76%	*33.33%*	*28.57%*	*33.33%*	*100%*
Total	47	147	152	49	395
	11.90%	*37.22%*	*38.48%*	*12.41%*	*100%*
Pearson Chi-Square	26.605***		Sig.		.002
Cramer's V	.150		Contingency Coefficient		.251

Source: Computed
****significant*

The contingency tables, Pearson Chi-square and symmetric measures of Chi-square test for policy duration and the three extracted behavioral bias components are given in Table 5.29, 5.30 and 5.31. Table 5.29 shows that according to the Pearson Chi-square results, there is no statistically significant association between annual premium and heuristics and herding (p=0.093). Of the 395 policies, 50.89% of the policies owned by respondents show traits of heuristics and herding. Around two-thirds (64.29%) of the respondents paying an annual premium of Rs.1,00,000-Rs.5,00,000 and half (51.19%) of respondents paying an annual premium of Rs.10,000-Rs.50,000 show traits of heuristics and herding.

Table 5.29: Annual premium with heuristics and herding

Premium amount	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Less than Rs.10,000	9	19	12	7	47
	19.15%	*40.43%*	*25.53%*	*14.89%*	*100%*
Rs.10,000-Rs.50,000	36	87	95	34	252
	14.29%	*34.52%*	*37.70%*	*13.49%*	*100%*
Rs.50,000-Rs.1,00,000	8	20	21	5	54
	14.81%	*37.04%*	*38.89%*	*9.26%*	*100%*
Rs.1,00,000-Rs.5,00,000	10	5	17	10	42
	23.81%	*11.90%*	*40.48%*	*23.81%*	*100%*
Total	63	131	145	56	395
	15.95%	*33.16%*	*36.71%*	*14.18%*	*100%*
Pearson Chi-Square	14.934		Sig.		.093
Cramer's V	.112		Contingency Coefficient		.191

Source: Computed
****significant*

Table 5.30: Annual premium with affect and information biases

Premium amount	Neutral relevance	Moderate relevance	High relevance	Total
Less than Rs.10,000	3	14	30	47
	6.38%	*29.79%*	*63.83%*	*100%*
Rs.10,000-Rs.50,000	14	86	152	252
	5.56%	*34.13%*	*60.32%*	*100%*
Rs.50,000-Rs.1,00,000	6	19	28	53
	11.32%	*35.85%*	*52.83%*	*100%*
Rs.1,00,000-Rs.5,00,000	5	7	30	42
	11.90%	*16.67%*	*71.43%*	*100%*
Total	28	126	240	394
	7.11%	*31.98%*	*60.91%*	*100%*
Pearson Chi-Square	8.746	Sig.		.188
Cramer's V	.105	Contingency Coefficient		.147

Source: Computed
****significant*

Since the number of observations was too few (n<5) for low relevance to meet the criteria for Chi-square analysis, the column was removed from Table 5.30.

It is clear that most policyholders show traits associated with affect and information biases, as 92.89% of them lie in moderate to high relevance. The Pearson chi-square statistic is 8.746, and there is no statistically significant association between annual premium and affect and information biases (p=0.188).

Table 5.31: Annual premium with framing and confidence biases

Premium amount	Low relevance	Neutral relevance	Moderate relevance	High relevance	Total
Less than Rs.10,000	4	20	15	8	47
	8.51%	*42.55%*	*31.91%*	*17.02%*	*100%*
Rs.10,000-Rs.50,000	33	120	61	38	252
	13.10%	*47.62%*	*24.21%*	*15.08%*	*100%*
Rs.50,000-Rs.1,00,000	19	14	14	7	54
	35.19%	*25.93%*	*25.93%*	*12.96%*	*100%*
Rs.1,00,000-Rs.5,00,000	5	16	16	5	42
	11.90%	*38.10%*	*38.10%*	*11.90%*	*100%*
Total	61	170	106	58	395
	15.44%	*43.04%*	*26.84%*	*14.68%*	*100%*
Pearson Chi-Square	25.108***		Sig.		.003
Cramer's V	.146		Contingency Coefficient		.244

Source: Computed
****significant*

Table 5.31 shows that the Pearson chi-square statistic is 25.108, and there is a statistically significant association between annual premium and framing and confidence biases (p=0.003). The symmetric measures, Cramer's V and contingency coefficient, are 0.146 and 0.244 respectively. This indicates that there is a strong relationship between the two variables. Of the total 395 policies, the owners of 164 policies (41.52%) show traits associated with framing and confidence biases. About half of the respondents exhibit these characteristics; 50% paying an annual premium of Rs.1,00,000-Rs.5,00,000, 48.94% paying an annual premium less than Rs.10,000. On the other hand, 61.11% of respondents paying an annual premium of Rs.50,000-Rs.1,00,000 and 60.71% of respondents paying an annual premium of Rs.10,000-Rs.50,000 do not exhibit these traits.

Thus, it can be concluded that among the psychographic and bias variables, there is a significant association between annual premium and risk-taking attitude, as well as framing and confidence biases. The amount a policyholder pays towards his/ her life insurance policy may be affected by their risk-taking attitude in general domains, risk-taking attitudes in financial domains, framing of the policies at time of purchase and overconfidence in oneself.

5.7. Impact of Psychographics and Biases on Life Insurance Policy Selection

The associations between the details of life insurance policies and different psychographic and behavioral biases have been examined using Chi-square tests. However, the tests only assess associations between categorical variables and do not provide any inferences about causation. As such, to further explore and understand the direction and influence of these variables, the study uses binary logistic regression to estimate the probabilty of selecting a particular type of policy based on the extracted psychological factors, which are measured on a 5-point Likert scale. The dependent variables (type of policy) are coded as binaries, i.e., term policy is a binary variable which takes a value of 1 if the respondent owns a term life insurance 0 otherwise, whole life is a binary variable which takes the value of 1 if a respondent owns a whole life policy and 0 otherwise, etc. Model evaluation tests, the Likelihood Ratio and Hosmer–Lemeshow test, are included in the analysis.

Table 5.32: Impact of psychological factors on term policy

Independent Variables	β	**Sig.**	**OR**
1. Personality and decision-making	-0.126	0.543	0.882
2. Opinions and habits	-0.141	0.487	0.869
3.Risk-taking behaviour	0.026	0.865	1.026
4. Heuristics and herding	0.018	0.932	1.018
5. Affect and information biases	0.018	0.949	1.018
6. Framing and confidence biases	0.636***	0.001	1.889
Constant	-2.511	0.006	0.081
Model evaluation	**Chi-square**	**Sig.**	

Likelihood Ratio test	146.416***	.000
Hosmer and Lemeshow Test	20.145	.010

Source: Computed

****significant at 1%, **significant at 5% level, *significant at 10%*

Table 5.32 shows the estimated logistic regression function of the psychological factors (psychographic and bias factors) on term policy. The Likelihood Ratio test indicates that the model with independent variables is more effective than the null model, and the Hosmer and Lemeshow test indicate that the model is a poor fit for the data. Among the factors considered, framing and confidence biases are a statistically significant indicator of term policy ownership (p=.001). The OR (1.899) reveals that the odds of selecting term policy increases by 1.899 when there is a unit increase in framing and confidence bias. This indicates that term life insurance policyholders are prone to framing biases, i.e., there was an offer at the time of purchase which made the policy more appealing to the customer. The policyholders are also bounded by confidence bias, i.e., they are overconfident about their knowledge of life insurance products. This indicates that respondents with term policies may not optimize their purchase decision as they are significantly influenced by biases under bounded rationality.

Table 5.33: Impact of psychological factors on whole life policy

Independent Variables	β	**Sig.**	**OR**
1. Personality and decision-making	0.949*	0.073	2.583
2. Opinions and habits	-0.209	0.679	0.812
3.Risk-taking behaviour	-0.245	0.482	0.783
4. Heuristics and herding	-0.380	0.428	0.684
5. Affect and information biases	-0.596	0.371	0.551
6. Framing and confidence biases	0.592	0.229	1.808
Constant	-4.178*	0.078	0.015

Model evaluation	**Chi-square**	**Sig.**
Likelihood Ratio test	80.594	.338
Hosmer and Lemeshow Test	8.812	.358

Source: Computed

****significant at 1%, **significant at 5% level, *significant at 10%*

The Hosmer and Lemeshow Test indicate that the model is a good fit for the data (p>0.05). Among the independent variables, personality and decision-making has a statistically significant impact on whole life policy (p=0.073). The high Odds Ratio (2.583) indicates that the odds of selecting whole life policy is more than doubled with one unit increase in personality and decision-making when all other independent variables are constant. Whole life insurance policy selection is impacted by socialization preference, past experience, price consciousness and health-conscious behaviour. Then, policyholders with whole life policy are more likely to prefer socializing with others, make decisions based on past experiences, make purchase decisions based primarily on price and actively engage in activities to take care of their health and fitness.

Table 5.34: Impact of psychological factors on endowment policy

Independent Variables	β	Sig.	OR
1. Personality and decision-making	-0.428**	0.022	0.652
2. Opinions and habits	0.230	0.215	1.258
3.Risk-taking behaviour	-0.116	0.414	0.890
4. Heuristics and herding	-0.085	0.671	0.918
5. Affect and information biases	0.425*	0.085	1.530
6. Framing and confidence biases	-0.171	0.312	0.842
Constant	-0.634	0.449	0.530

Model evaluation	Chi-square	Sig.
Likelihood Ratio test	123.232***	.000
Hosmer and Lemeshow Test	8.472	.389

Source: Computed

****significant at 1%, **significant at 5% level, *significant at 10%*

Table 5.34 shows that our model with independent variables is more effective than the null model, and the Hosmer and Lemeshow Test shows that the model is a good fit for the data. Among the selected variables, personality and decision-making (p=0.022) and affect and information biases (p=0.085) are significant determinants of endowment policy selection. Contrary to whole life policy, there is a negative relationship between endowment selection and personality and decision-making, i.e.,

with a one unit increase in personality and decision-making factor, the odds of selecting an endowment policy decreases by 0.652. Then, policyholders with endowment policy are more likely to prefer being alone, do not make decisions based on past experiences, do not make purchase decisions based primarily on price and do not actively take care of their health and fitness.

The relationship between selection of endowment policies and affect and information biases is such that policyholders with affect and information biases are more likely to hold endowment policies, i.e., the policyholders' decision was impacted by affect bias, confirmation bias and asymmetric information. The odds of selecting an endowment policy increases by 53% when there is a unit increase in this affect and information biases. Policyholders with endowment policies believe that life insurance policy is good for everyone, the good reputation of the company (LIC) or sales agents informed their buying decision, and they trust in the company due to other people's opinions. Moreover, information asymmetry is a component of this factor, and endowment policyholders were more likely to state that their sales agent did not tell them all important information before buying the policy. The impact of affect and information biases can be connected to the fact that endowment policies are among the most popularly owned. It may be construed that the promotion of life insurance policies and the good reputation of LIC significantly impacted the purchase decision and convinced consumers to become policyholders even when they do not have enough of the relevant information regarding the purchase.

Table 5.35: Impact of psychological factors on moneyback policy

Independent Variables	β	**Sig.**	**OR**
1. Personality and decision-making	-0.026	0.882	0.974
2. Opinions and habits	0.210	0.236	1.234
3.Risk-taking behaviour	-0.059	0.662	0.943
4. Heuristics and herding	-0.094	0.619	0.910
5. Affect and information biases	0.173	0.459	1.189
6. Framing and confidence biases	-0.204	0.211	0.815
Constant	-1.009	0.211	0.365
Model evaluation	**Chi-square**	**Sig.**	

Likelihood Ratio test	119.485***	.001
Hosmer and Lemeshow Test	5.564	.696

Source: Computed

****significant at 1%, **significant at 5% level, *significant at 10%*

Table 5.35 shows that although the model with independent variables is more effective than the null model and the model is a good fit for the data, none of the factors considered in the study have a significant impact on moneyback policy selection. This indicates that the policyholders with moneyback policies are not significantly affected by the psychological variables considered in the study.

Table 5.36: Impact of psychological factors on ULIP policy

Independent Variables	β	**Sig.**	**OR**
1. Personality and decision-making	1.045***	0.000	2.843
2. Opinions and habits	-0.734**	0.004	0.480
3.Risk-taking behaviour	0.602**	0.003	1.826
4. Heuristics and herding	0.364	0.163	1.439
5. Affect and information biases	-1.039**	0.002	0.354
6. Framing and confidence biases	-0.198	0.420	0.820
Constant	-2.353**	0.045	0.095

Model evaluation	**Chi-square**	**Sig.**
Likelihood Ratio test	176.943***	.000
Hosmer and Lemeshow Test	11.352	.183

Source: Computed

****significant at 1%, **significant at 5% level, *significant at 10%*

Table 5.36 shows the estimated function of psychological factors on ULIP policy selection. The Likelihood Ratio test suggests that our model with independent variables is more effective than the null model, and the Hosmer and Lemeshow Test shows that the model is a good fit for the data ($p>0.05$). It is evident that the policyholders are more affected by the selected indicators than any other policy. The selection of ULIP policy is significantly impacted by personality and decision-making ($p<0.001$), opinions and habits ($p=0.004$), risk-taking behaviour ($p=0.003$) and affect and information biases ($p=0.002$). We discuss the implications of each of

these factors. The Odds Ratio for ULIP policy indicates that there is a 1.045 increase in the odds of selecting ULIP policy when there is a one unit increase in personality and decision-making. Then, the policyholders are impacted by socialization preference, past experience, price consciousness and health-conscious behaviour in such a way that they are more likely to prefer socializing with others, make decisions based on past experiences, make purchase decisions based on price and engage in activities to take care of their health and fitness.

The ownership of ULIP policies is negatively impacted by opinions and habits of the policyholders in such a way that a unit change in opinion and habits will lead to a decrease the odds of selecting ULIP policy by 0.480. Policyholders are impacted by fatalism, information-seeking behaviour and community involvement. The ULIP policyholders are less likely to believe in fate/ God, seek information out before purchase and involve themselves in community works. Risk-raking attitude significantly impacts ULIP policies, such that a one-unit change in risk-taking attitude increases the odds of ULIP ownership by 82.6%. Since ULIP policies involve higher premiums and risks than other policies, it is evident that these policyholders are more likely to be risk-taking individuals in general and financial domains.

Among the behavioral biases, affect and information biases have a significant impact on ULIP ownership. There is a negative relation between the two such that a one-unit change in affect and information biases decreases the odds of ULIP selection by 0.354. The policyholders are impacted by affect bias, confirmation bias and asymmetric information. This relationship indicates that ULIP policyholders do not make purchase decisions based on the reputation of the company (LIC) or sales agents. They are less likely to have confirmation bias, as their decision is not informed by previous knowledge and belief about life insurance policies and companies. Moreover, they are not affected by information asymmetry, i.e., they know all important information about the policy before purchase. This further corroborates the findings in Section 4.6 which examined the purchase motivations behind each policy type and found that ULIP policyholders are motivated by coverage and investment motives. It was found that policyholders with ULIP policies

had a good understanding of life insurance policies and were likely to choose their life insurance policies to fit their purchase motivations.

Table 5.37: Impact of psychological factors on pension policy

Independent Variables	β	Sig.	OR
1. Personality and decision-making	-0.335	0.392	0.716
2. Opinions and habits	0.549	0.177	1.732
3.Risk-taking behaviour	-0.159	0.619	0.853
4. Heuristics and herding	0.350	0.443	1.418
5. Affect and information biases	-0.363	0.478	0.695
6. Framing and confidence biases	-0.443	0.224	0.642
Constant	-1.998	0.282	0.136

Model evaluation	Chi-square	Sig.
Likelihood Ratio test	69.959	.673
Hosmer and Lemeshow Test	11.424	.179

Source: Computed

****significant at 1%, **significant at 5% level, *significant at 10%*

Table 5.37 shows that none of the psychological factors considered in the study have a significant impact on pension policy selection.

Thus, it can be concluded that the selection of life insurance policies is significantly affected by not just socio-economic factors, but psychographic and behavioral bias factors as well. Aside from the first behavioral component, heuristics and herding, it is found that all the extracted components have an influence in the selection of different life insurance policies and significantly impact the decision-making process. Policyholders are impacted by their personality and decision-making, opinions and habits, risk-taking attitude, affect and information biases and framing and confidence biases in their decision to purchase a life insurance policy. These findings clearly prove Hypothesis 3, i.e., behavioral biases have a significant impact on life insurance policy selection.

5.8. Summary

From the respondents' psychographic profile, it can be seen that many policyholders are information seekers who make purchase decisions based on past experiences. They are usually assertive, risk- averse in financial decisions and have a fatalistic attitude. The policyholders are affected by the behavioral biases considered in the study to varying extents, and herding effect was the most common bias exhibited by the policyholders as 65.97% formed their opinion of their life insurance provider (LIC) based on the opinions of other people.

There is a strong association between the particulars of life insurance policies such policy type, duration and premium and the psychological variables in the study, viz. opinions and habits, framing and overconfidence biases and risk-taking attitude. The psychographic and behavioral bias factors taken in the study have a significant impact on life insurance policy ownership. Policyholders with ULIP policies are more affected by the selected indicators than any other policy. ULIP ownership is impacted by personality and decision-making, opinions and habits negative, risk-taking behaviour and affect and information biases. Personality and decision making, opinions and habits, risk-taking attitude, affect and information biases and framing and confidence biases all have causal relationship with ownership of life insurance and are significant determinants of policy ownership, although their significance varies depending on the policy in question. Hypothesis 3 is proven, i.e., behavioral biases have a significant impact on life insurance policy selection.

CHAPTER 6

SUMMARY OF FINDINGS AND RECOMMENDATIONS

6.1. Outline of the Study

The development of a life insurance sector plays an important role in economic development for developing economies (Hal et al., 2010) and India is a developing country with the tenth largest life insurance market in the world (IRDAI, 2022). With continued efforts from the Government to increase financial inclusion with the objective of fulfilling the Sustainable Development Goals (Reserve Bank of India, 2020), a consumer's purchase decision regarding a life insurance policy is an important one. Demographic and socio-economic characteristics of consumers can affect their decision to own a policy (Zietz, 2003; Ulbinaite et al.., 2013). Moreover, consumers make decisions under bounded rationality (Simon, 1955) and many studies have found that behavioral biases significantly impact life insurance purchase decisions (Bhatia et al.., 2020). Thus, the study examines the life insurance market to understand its relation to economic development, holding patterns among the policyholders, the significant socio-economic factors that influence its demand, and the decisions involved in insurance selection are examined using a behavioral framework. Essentially, consumer behaviour in the life insurance market is explored for the life insurance policyholders in North-East India. Since Life Insurance Corporation of India is the largest life insurance provider with about 64.02% of the market share (IRDAI Annual Report, 2022), policyholders with an LIC policy were approached for the purposes of the study. The study covers 335 policyholders and 401 policies. This chapter is concerned with the major findings of the study and recommendations based on the results.

6.2. Summary of Major Findings

The main findings of the study are discussed below:

6.2.1. Life insurance and economic development

1. There is a bilateral causal relationship between life insurance consumption (represented by total premium) and economic development (represented by GDP). The growth of the economy and life insurance sector are highly related with a lagged relationship, i.e., economic development causes lagged impact on insurance sector growth and vice versa. The results of Vector Autoregression suggested that the causation from GDP to total premium is in the fourth year and from total premium to GDP is in the second year. *This proves Hypothesis 1, i.e., the growth of insurance increases with increase in economic growth.*
2. Different macroeconomic indicators were included in the study to examine the demand for life insurance. Due to a multicollinearity problem, Principal Component Analysis was used to extract and construct variables, viz., the variables 'Economic growth' and 'real interest rate.' The study found that the demand for life insurance is influenced by macroeconomic factors in such a way that the demand for life insurance increases with increase in factors related to economic growth, i.e., Gross Domestic Product, Gross National Income, Gross Domestic Savings, Financial Assets of the Household Sector, Financial, Real Estate & Professional Services, Consumer Price Index, Per Capita Income, population and life expectancy.

6.2.2. Holding patterns of life insurance policies in North-East India

3. On examination of the basic demographic profile of policyholders in North-East India, it was found that the demand for life insurance and age of policyholders are related non-linearly, as the demand for life insurance increases as individuals age and start families and decreases when they

decline in age. The majority of life insurance policyholders (79.4%) are in the working age group, and the biggest contributors (35.52%) are between the ages of 25 and 34. The average family size is 2.25, and half of the policyholders (51.3%) have nuclear families (4-5 family members). People with dependents are more likely to purchase insurance as 64.5% of policyholders, single or married, had dependents and the average policyholder has less than 4 dependents. Most policyholders (77.3%) are graduates and after a certain point, i.e., after Rs.1,00,000, the policyholders with higher income do not necessarily buy more life insurance, indicating that consumption does not increase with increase in income after a certain threshold.

4. Half of the policyholders (53.7%) are salaried employees and 26% of the policyholders are self-employed, making up a large majority (79.9%). The senior agents with experience of 15-40 years from LIC revealed that there may be two big reasons for life insurance ownership being relatively high for salaried employees. First, salaried employees have regular income which makes a big difference in the capacity to regularly make premium payments. Second, there was a conscious effort from the life insurance agents in Mizoram and Meghalaya to sell to salaried employees, as this cohort is identified as the main target demographic. The agents had faced problems with lapsation due to irregular income of policyholders, after which they made concerted efforts to target salaried employees to avoid this problem. The study found that more than two-fifths (46.11%) of the salaried employees bought a life insurance policy due to the influence of agents.
5. Most policyholders (83%) only have one life insurance policy and 95.26% purchased the policy for themselves, showing the significance of the purchase decision. The most common policies are moneyback (30.2%), endowment (26.9%) and term policies (21.7%), which was further corroborated by the agents in their interviews. Half of the policies (53.11%) have a policy duration less than 15 years, and the number of policies decreases as the duration increases, indicating that most policyholders do not opt for long-term policies. The average annual premium for policyholders is highest for

ULIP policies (Rs.110340), and most policyholders (74.56%) pay an annual premium below Rs.50,00. The average sum assured for the policyholders across different policies is Rs.1448125.25, and the average sum assured is highest for pension policies at Rs.4688235.29.

6. The policyholders purchased a life insurance policy for different reasons, and the most significant purchase motivations are life coverage for risk mitigation (79.1%), saving for a specific purpose in the future (73.14%) and investment for wealth creation (47.46%). In examining the relationship between expected returns and policy selection, the positive and significant coefficient of binary logistic regression indicates a positive relationship for ULIP, term and endowment policies. This indicates that there is a direct relationship between expected returns and policy selection for consumers with ULIP, term and endowment policies. These policyholders made their purchase decisions based on the designed utility of the policies, i.e., the expected use of these policies aligned with the purchase motivation for the policyholders. *This proves Hypothesis 2, i.e., there is a direct relationship between expected returns and policy selection of consumers.* The same cannot be said for policyholders with moneyback, whole life and pension policies.
7. There is a significant relationship between life insurance policy selection and the demographic and socio-economic variables considered in the study, viz., the sex, marital and family status, number of dependents, employment status and income of the policyholders. Men are more likely to select term policies and women are more likely to select ULIP policies. The policyholders with dependents, whether single or married, choose policies that incentivise saving and investment, i.e., endowment and moneyback policies. On the other hand, policyholders without dependents or with independent children opt for term policies or ULIP policies, which are designed for coverage and investments. While moneyback policies (34.40%) and endowment policies (30.28%) are the most common policies among employed policyholders, term policies (25.47%), and endowment and ULIP policies (23.58% each) are most common for self-employed policyholders. Out of the 46 total ULIP policies, 25 policies (54.35%) are held by self-employed policyholders and are the

only policy type for which self-employed respondents buy proportionally more policies than employed respondents. Policyholders in the lowest category of monthly income (Rs.10,000-25,000) opt for ULIP policies proportionally more than other income groups. 25.29% of policyholders in this income group chose ULIP policies, a higher proportion than other groups. It is reasoned that more policyholders in this income bracket choose ULIP policies as they are designed for profit and investment motives.

8. Agents play a crucial role in the distribution of life insurance policies. While only 22.1% of the policyholders actively chose to look for a policy themselves, as much as 40.9% of policyholders purchased a policy because it was brought to them by agents, i.e., 28.4% bought a policy when they were approached by an agent and 12.5% bought a policy when they were approached by an agent they knew personally. It is interesting to note that the agents are crucial not just to introduce policies to customers, but the personal connection with policyholders goes a long way in motivating them to purchase policies, i.e., agents are not just how policies are bought, it is also why they are bought. The agents are an important purchase motivation for the policyholders as 33.14% bought a policy because an agent convinced them to do so and for 26.27% of the respondents, it was important that the policy was sold by someone they knew personally. This relationship is cultivated by the agents, and the agents interviewed in the study confirmed that they gave priority to building a good relationship with their customers, establishing a sense of trust with the company, and providing after-sales services.
9. Digitization has played a big role in catering to the responsibilities of agents and changed the work culture of the life insurance industry. The ease of communication afforded by increasing telecommunication and online platforms has positively evolved their relationship with clients and helped to resolve prominent pre-existing issues with clients such as late payments and misplaced insurance documents. The agents also noticed that more policyholders prefer automatic deduction and online methods of payment in the aftermath of the COVID pandemic, which had led to increased use of the LIC application, LIC Digital. The agents also observed that in the last few

years, the increasing use of internet has led to increased awareness of consumers, as more people reached out to them for advice after learning about life insurance themselves.

10. The managers and agents interviewed for the study were very protective of LIC, and it was found that there was a strong sense of competition with the private sector. They observed that the increasing number of private companies in the last few years have affected their business, and it was harder to find new clients. There was a distrust of private companies due to previous experiences of poaching of agents and leaking of sensitive information to private companies. This resulted in extra security measures undertaken by the company to prevent further unethical practices.
11. The most common reason for lapsation of policies was active lapsation, i.e., the policyholders actively let the policy lapse due to mis-selling in the form of incomplete information about policies (38.46%) and payment terms (34.62%). This case of asymmetric information was confirmed by insurance agents who were also of the opinion that one of the most common reasons for lapsation was mis-selling by agents when they do not do enough research before convincing a client to buy a policy. Some agents purposely give policies that are not suitable for clients due to pressure to reach sales targets and bring in more clients, which often results in policies that the clients cannot afford. Although the agents emphasized their practise of recommending policies based on the individual customer because "*Different people have different needs*," it was found that 43.88% of the policyholders were not asked about their needs and purchase motivations before buying a policy. Moreover, policyholders are not thorough with their purchase decisions to make fully informed decisions. Many do not read the life insurance paperwork (34.63%), compare different policies to find the optimal choice (52.24%) or take the time to fully understand the risks (31.34%) before committing to a policy. Additionally, the agents also had experiences where clients did not disclose relevant information such as health conditions and lifestyle practices before the purchase of a policy. This indicates that

there is a dimension of asymmetric information in life insurance purchases on the part of both agents and policyholders.

6.2.3. Bounded rationality and life insurance policy selection

12. There are significant psychological factors at play in the decision-making of policyholders. The psychographic profile of policyholders showed that many policyholders were information seekers (77.31%) and made decisions based on past experiences (77.01%) when it came to purchase decisions. It was also observed that the policyholders commonly displayed behavioural biases related to other people in their purchase decisions. They based their decisions on other people's good opinions about the company (65.97%), the reputation of the sales agent or company (51.01%) and other people who had benefitted from life insurance policies (53.73%). This shows the significance of biases and other people's role in the policyholder's decision-making process, as policyholders will base their decisions on other's experiences without observing how their cases and circumstances may differ.
13. Policyholders make decisions not just to purchase a life insurance policy, but also on what type of policy to buy, duration of the policy, annual premium amount, etc. The study considered several psychographics and biases to examine their effect on these policy selection decisions. The dimensional structure of these variables was analysed using factor analysis and Principal Component Analysis was used for component extraction. Six variables were extracted, i.e., personality and decision-making, opinions and habits, risk-taking attitude, heuristics and herding, affect and information biases, and framing and confidence biases. The relationship between these extracted variables and selection of policy details was examined using Chi-square test of independence.

    The study found that the policyholders' decisions on selection of policy details is affected by these variables, viz., there is an association between the type of policy they choose and their beliefs on fatalism, habits of information-seeking behaviour and community involvement, overconfidence and the

framing of the policy that was sold to them. Policyholders with term policies show high overconfidence and susceptibility to framing biases, and policyholders with pension and endowment policies have a high belief in fatalism, are more involved in the community and exhibit information-seeking behaviour. When it comes to selection of policy duration, policyholders with high risk-taking attitudes tend to prefer shorter policy durations (less than 10 years). In the selection of premium amount, policyholders paying higher annual premiums (Rs.1,00,000-Rs.5,00,000) have high risk-taking attitudes and show traits associated with overconfidence and framing biases.

14. Psychographic traits and behavioural biases have a significant impact on life insurance policy selection, i.e., which type of policy they choose to take. Policyholders are significantly impacted by their personality and decision-making, opinions and habits, risk-taking attitude, affect and information biases, and framing and confidence biases in their decision to purchase a life insurance policy. This positive relationship is indicated by the positive and significant coefficient of binary logistic regression. *This proves Hypothesis 3, i.e., behavioural bias has a significant impact on life insurance policy selection.*

    Term policyholders are more likely to be overconfident and take discounts/offers, whole life policyholders are more likely to be health and price conscious, and endowment policyholders are more likely to make emotional decisions and trust external sources of information such as other people, agents and companies even when the information is incomplete. ULIP policyholders are more affected by the psychological factors than other groups, and they are more likely to be health and price conscious and have high risk-taking attitudes. Contrary to endowment policyholders, they do not make decisions based on emotion or with incomplete/ asymmetric information. Since it was also found that policies taken for investment motives and wealth creation were less likely to lapse, it can be understood that ULIP policyholders make more careful decisions in their purchase decisions.

6.3. Conclusion

The growth of life insurance sector is closely related to economic development, and the two share a positive bilateral causal relationship. Economic development causes lagged impact on insurance sector growth, and the growth of life insurance sector growth causes lagged impact on economic development, i.e., their effects on each other may not show in the first year, but the causation can be observed in the next years. The demand for life insurance is significantly affected by macroeconomic indicators such that an increase in Gross Domestic Product, Gross National Income, Gross Domestic Savings, Financial Assets of the Household Sector, Financial, Real Estate & Professional Services, Consumer Price Index, Per Capita Income, population and life expectancy will lead to an increase in the demand for life insurance.

The most common policies are moneyback, endowment and term policies and most policies are bought for life coverage, saving and investments. The majority of policyholders have one life insurance policy and have dependents relying on them. Agents play a crucial role in the distribution of life insurance and influence consumers to make purchase decisions. Many agents target salaried employees as they have stable regular income streams, and thus, employed policyholders account for a large portion of the policyholders. Demographic and socio-economic profile of policyholders have a significant impact on the selection of life insurance policies. Policyholders with dependents prefer policies for designed saving and investment, while policyholders without dependents prefer policies designed life coverage and investments. Policyholders who are self-employed and in the lower income bracket prefer ULIP policies.

It is clear that policyholders are bounded rational as purchase decisions and policy selections are significantly impacted by the psychographics and behavioural biases of the policyholders, i.e., their personality and decision-making, opinions and habits, risk-taking attitude, affect and information biases, and framing and confidence biases. Policyholders with ULIP policies make more informed and careful decisions compared to policyholders with other policy types. Agents play a

crucial role in the distribution of policies, and influence how and why many policyholders purchase life insurance policies. There is a dimension of asymmetric information on the part of agents who sell policies without properly informing consumers about their policies and policyholders who do not make the effort to understand and know about the policies they purchase.

6.4. Recommendations

A few recommendations based on the findings discussed above and for further research are discussed below:

A few recommendations based on the findings discussed above are discussed:

1. The issue of asymmetric information for agents and policyholders has to be addressed. The role of agents is crucial and accountability for unethical business practices such as knowingly selling unfit policies to customers has to be improved. There is a need to create proper norms and checking mechanisms for policy disclosure to avoid mis-selling due to incomplete information of policies or payment schedules. The Government can institute mandatory disclosure norms to be followed at the time of sales by all life insurance agents and providers.

   It is undeniable that part of this responsibility has to be undertaken by consumers as well. Insurance policies have a wide range of properties and financial concepts, and it is a daunting task for many consumers to understand them and make optimal choices. Policyholders are also overconfident in their knowledge of insurance products. The continuous efforts for insurance awareness can simplify these concepts for easier understanding and to encourage more customers to be fully informed before making purchase decisions. There can also be more attention in these awareness efforts to sensitise the consumers about the advantages of choosing a right policy based on their needs and goals, and the pitfalls of blindly choosing a policy without independent research. The Government can utilise the increased use of telecommunication and internet and create content for the

consumers in this regard. This may take the form of educational infotainment that simplifies the concepts of life insurance for the average consumer and incentivises information-based decision making, in addition to their ongoing advertisements and awareness programmes.

2. The findings of the study can be substantiated by further research on related concepts and methodologies not included in the study. The ownership and selection of life insurance policies can be studied in relation to financial literacy and consumption habits of policyholders. Since the study is the first to look at psychological factors such as psychographic profiles and behavioural biases significant to the purchase of life insurance in North-East India, it is mainly concerned with finding which factors are associated with these purchase decisions. The significant factors in the study can be further investigated with existing models of behaviour and purchase decisions such as Expected Utility Theory, Life Cycle Model, Theory of Reasoned Action, etc. to construct theoretical frameworks and models of life insurance purchase decisions using Structural Equation Modelling, ANOVA, Probit regression, etc.
3. Since it was found that psychographic traits of policyholders are significant to the purchase decisions and policy selection of policyholders, research can be conducted on a larger scale to be utilized in market research and sales techniques. A model of psychographic segmentation can be developed to classify the customers based not on socio-economic factors but psychological profiles and behaviours. This marketing method can provide a better understanding of consumers which can be used by life insurance providers for new marketing techniques and by the Government to increase the impact of their awareness efforts. This has been effectively used by other industries for effective targeting of the desired demographic of customers.
4. The agents revealed that digitisation has played a major role in changing the market and practices associated with life insurance policies from sales to after-sales services. The relationship between the rise of digitisation and the growth of life insurance is a topic that can be further explored to find cause and effect relationships and further implications on future business practices.

5. Policy lapsation is a loss for both policyholders and insurers. The scope of the study does not include effective ways to combat policy lapsation, which is an area that should be further researched. The issue of mis-selling and the causes of policy lapsation can be further studied on a larger scale with a bigger sample size to find the best solutions for prevention.

APPENDIX-1

QUESTIONNAIRE

Name (optional):

Phone Number (optional):

City/ Town:

State:

Number of family members:

Number of earning members:

Number of dependents (non-earning members):

Age:

- Under 18 years old
- 18 - 24 years old
- 25 - 34 years old
- 35 - 44 years old
- 45 - 60 years old
- Above 60 years old

Sex

- Male
- Female

Marital and Family Status

- Single without dependents.
- Single with dependents.
- Married without children.
- Married with dependent children.
- Married with independent children.

Education: What is the highest degree you have completed?

- Illiterate
- Under-matriculate
- Matriculate
- Higher Secondary (including diploma).
- Graduate and above (including professional degree).

Employment status

- Student
- Not in the labour force
- Looking for work
- Homemaker
- Employed (salaried)
- Self-employed (business/ freelance/ others)
- Part-time/ casual employment
- Retired
- Others, specify _____

Monthly household income

- Less than Rs.10,000/month
- Rs.10,000 – Rs.25,000 /month
- Rs.25,001 – Rs.50,000/month
- Rs.50,001 – Rs.1,00,000/month
- Rs.1,00,001 – Rs.2,00,000/month
- More than Rs.2,00,000/month

How did you come to purchase life insurance policy?

- I actively looked for an insurance policy that suited my needs.
- It was offered by my bank/ workplace.
- It was recommended by family/ friends.
- It was being sold by someone I knew.
- I was approached by a salesperson from the company.

Insurance policy	No. of policies purchased	Who was the policy bought for?	Name of policy/ policy number	Duration of policy	Sum assured	Premium	Frequency of premium payment
Term policy		○ Self only ○ Dependents only ○ Both					
Whole life policy		○ Self only ○ Dependents only ○ Both					
Endowment policy		○ Self only ○ Dependents only ○ Both					
Money back policy		○ Self only ○ Dependents only ○ Both					
Unit Linked Insurance Plan (ULIP)		○ Self only ○ Dependents only ○ Both					
Pension policy		○ Self only ○ Dependents only ○ Both					
Group policy		○ Self only ○ Dependents only ○ Both					
Do not know		○ Self only ○ Dependents only ○ Both					

Given below are several reasons why people buy life insurance. Please pick the ones which were important to you when buying insurance and give a score from 1-5.
Rating Scale: 1: Not Important at all / Strongly disagree-- 5: Very important/ Strongly agree

Reasons for purchasing life insurance policy	1	2	3	4	5
1. To save for future needs like children's education/ retirement.					
2. To save some amount regularly so that I do not spend it all.					
3. It helps to secure the future of my family in case of death.					
4. For use as an investment tool for wealth creation.					
5. To save income tax.					
6. The life insurance agents convinced me that I should take a policy.					
7. Knowing the life insurance agent personally, I felt an obligation to buy an insurance policy.					
8. Life insurance purchase was needed in order to get some other loans/services.					

Please tick the most suitable option from the following statements with reference to your insurance purchase decision.

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I read the paperwork thoroughly before buying the policy.					
2. I fully understand the risks and returns associated with the policy.					
3. I looked at other policies and compared them before buying the policy.					
4. I was asked about my needs before purchasing the plan.					
5. The policy has fully met my expectations.					
6. I am happy with the policy I have purchased.					
7. I would recommend the same company to friends/family.					
8. I have an overall positive experience with the insurance company.					

Individual Lifestyle Construct

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I am willing to take risks if there is a scope for profit.					
2. If there is a 50% chance of gaining Rs. 1000 but there is a 50% chance of losing Rs. 500, I will take the chance.					
3. I am ready to share my opinions with others even when they may disagree.					
4. I believe life is decided by fate/ God and is outside of human control.					
5. When buying something, I look at different options to compare price and quality.					
6. I am regularly involved in community works.					
7. I prefer spending time with others than alone.					
8. I usually make decisions based on my past experiences.					
9. I actively take care of my body for good health and fitness.					
10. When buying something, price is the most important factor.					

Individual Behaviour Construct

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. I bought life insurance due to past experience/ knowledge of other people who had benefitted from it.					
2. I bought life insurance after someone I knew passed away due to an accident/ unforeseen circumstance.					
3. I bought insurance because the salesperson spoke of the benefits others had received and the same benefits I could receive.					
4. I looked at products that were more expensive before choosing the current policy.					
5. There was a discount/offer at the time when I purchased insurance.					
6. The reputation of the company/ sales agent helped in my decision to buy the life insurance policy.					
7. I think life insurance policy is good for everyone.					
8. I know people who had a negative experience with their insurance policy.					
9. I follow recommendations/ advice from others regarding decisions on financial products.					
10. I trust the company because many people have good opinions about it.					
11. I was persuaded to buy the insurance policy by the salesperson.					
12. I am confident in my knowledge of insurance policies.					
13. I know the difference between Term Plan, Endowment Plan and ULIP.					
14. I feel that the salesperson did not tell me all important information before I bought the policy.					

Have you had an insurance policy that lapsed?

- Yes
- No

If yes, how many policies have lapsed and what kind of insurance policy was it?

_____

How long after buying the policy did it lapse?

- Less than two years
- 2-5years
- 5-8 years
- More than 8 years
- Do not know.

What was the reason it lapsed? (Please tick all that apply)

- I was unable to make the necessary payments.
- I forgot to pay the premium.
- The agent forgot to remind me/ collect the premium.
- It was too inconvenient to make payments.
- The payment information was not clearly explained at the time of purchase.
- The policy was not clearly explained to me at the time of purchase.
- The reason for purchasing insurance plan was not relevant anymore.
- I found a better and more suitable policy.
- Other, please specify _____

Has your experience with life insurance policy been satisfactory?

Yes No

Have you faced any challenges with life insurance products?

Yes No

In your opinion, do you think consumers of life insurance take careful decisions to fully understand the policy documents, risks and returns?

Yes No

Do you think advertisements by agents and life insurance companies are safe enough for consumers to make purchase decisions?

Yes No

APPENDIX- 2

INTERVIEW SCHEDULE

Interview Schedule for Life Insurance Agents

Contact information:

Work experience:

Number of clients:

1. How do you usually find customers?
2. What do consumers usually give importance to when buying insurance?
3. How do they usually buy insurance?
4. In your opinion, do you think consumers of life insurance take careful decisions to fully understand the policy documents, risks and returns?
5. What has been your experience with claim settlements?
6. Have you faced any challenges in selling/ providing service to customers?
7. Have you experienced any cases of lapsation?
8. What are the usual reasons for lapsation?
9. What is your opinion of the life insurers in the private sector?
10. How does the private sector affect your market?
11. How do people generally perceive the company?
12. What do you think of the life insurance sector in (state)/North-East India?
13. Have you witnessed any trends during your career? E.g., which policies are popular, what clients want, etc.
14. What challenges have you faced as a life insurance agent?

APPENDIX-3

INFORMATION SHEET AND INFORMED CONSENT FORM

The study is being conducted as a Ph.D. thesis under the Department of Economics at Mizoram University. The title of the study is "Behavioral Study of Life Insurance Policy Selection in North-East India", with the objective of examining the profile of life insurance policy holders, policy choice and behavioral biases in life insurance purchase decisions.

The questionnaire is composed of questions on socio-economic profiles, decision making and purchase of life insurance policy. There are no questions that require identifiers or sensitive personal information. *Participation in this research is entirely voluntary, and any and all information in the questionnaire is strictly confidential and used solely for the purpose of the study.*

If there are any questions regarding the questions or the study itself, participants can contact the following:

Ashley Lalremruati

Email id: ashleyzls12@gmail.com

CONSENT

I have read and understood the information provided above. I understand that my participation is voluntary and that I am free to withdraw at any time. I voluntarily agree to take part in this study.

Participant's signature: _____

Date: _____

Investigator's signature: _____

Date: _____

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BIO-DATA OF THE CANDIDATE

Name	:	Ashley Lalremruati
Father's Name	:	Zoliansanga (L)
Date of Birth	:	04.01.1997
Nationality	:	Indian
Marital Status	:	Single
Address	:	MV-140, Mission Veng, Aizawl.
Phone Number	:	9774967904
e-mail Address	:	ashleyzls12@gmail.com

Educational Qualification

1. HSLC (2013)	:	Distinction L (English, Mizo, Social Science, Mathematics, Science, Information Technology) St. Paul's Higher Secondary School, Aizawl.
2. HSSLC (2015)	:	Distinction L (Physics, Chemistry, Biology) St. Paul's Higher Secondary School, Aizawl.
3. B.A (2018)	:	Triple Major (Economics, Psychology, Sociology) Christ University, Bangalore.
4. M.A (2020)	:	Economics (Gold Medalist) Mizoram University, Aizawl.
5. NET, JRF (2019)	:	University Grand Commission, New Delhi.
6. Ph.D. Scholar	:	2021-ongoing

Certificate Course

Job Skills Training (2015-2016), Christ University, Bangalore

Certificates And Awards

1. Lalthanzauva Memorial Proficiency Award (2011-2012)
   St. Paul's Higher Secondary School, Aizawl
2. Lalthanzauva Memorial Proficiency Award (2013-2014)
   St. Paul's Higher Secondary School, Aizawl
3. Best Speech Award, Job Skills Training on Communication, Human Relation and Attitude Development (2015-2016)
   Christ University, Bangalore
4. 2nd place, Arthanomics- National Economics Competition (2017)
   Jai Hind College, Mumbai
5. Student of the Year Award (2020)
   Mizoram University, Aizawl

Teaching and Working Experience

1. Volunteer Teacher (2016-2017) at Meru Government School, Bangalore.
2. Host and Organiser of Mizoram Kailawn (2019), by IIM Calcutta and Planning and Programme Implementation Department, Aizawl.
3. Guest lecturer (2020-2021), Department of Economics, Pachhunga University College, Aizawl.
4. One year teaching M.A. Economics (2021-2022), Mizoram University.
5. Research Associate, Endline Survey of Project on "Capacity Enhancement for Sustainable Agriculture and Irrigation Development in Mizoram" (2021-2022), funded by Japan International Cooperation Agency (JICA), Tokyo.
6. Research Associate, Project on "The Study on the Use of Natural Resources by the People in Mizoram" (2023), funded by Japan International Cooperation Agency (JICA), Tokyo.
7. Eshaas Woman of Mizoram, Prabha Khaitan Foundation, patron Shree Cement Limited (2023-ongoing).

Papers Published

1. “Fund Devolutions to the Rural Local Governments and their Expenditure Patterns in Mizoram”, published in Man and Society, Vol XIX, Summer 2022
2. “Assessment of the Municipal Finances in the North-Eastern Indian State of Mizoram”, published in Res Militaris, Vol.13, No. 2, January Issue 2023.
3. “Tax and Non-Tax Revenues of the Autonomous District Councils in Mizoram and their Dependence on the State Government Fund Transfers”, published in Social Change and Development, Vol.XX, No.1, 2023
4. “Relationship Between Economic Growth and Life Insurance: The Determining Factors of Life Insurance Policy Demand in India”, published in Journal of Law and Sustainable Development, 2023, Vol.11, No.9
5. “Agent’s roles and perspectives of life insurance market in North-East India”, published in The Scientific Temper, 2024, Vol. 15 (3): 2839-2845

Academic Participation in International, National Workshop, Seminar/ Webinar

1. Best Research Presentation Award (2018)
   Christ University, Bangalore
2. Participated in “Aura: Sharing the Bizdom of Entrepreneurs” (2020)
   United Nations Development Programme
3. Participated in “"MSME Sector in the North-East India: Challenges and Opportunities Post COVID-19” (2020)
   United Nations Development Programme
4. Participated in “5 Days FDP on Behavioral Finance” (2024)
   Panipat Institute of Engineering and Technology
5. Participated in “Inclusive and Collaborative Leadership” (2024)
   Centre for Humanities and Social Science Research, The White Dot Solidarity Network, Full Life Access Trust, In Lehkha

6. Paper presentation on “Relationship between Economic Growth and Life Insurance: The Determining Factors of Life Insurance Policy Demand in India”, 2023, National Seminar on Sustainable Development Goals in India, Department of Economics, Mizoram University.
7. Paper presentation on “Agent’s roles and perspectives of life insurance market in North-East India”, 2024, Entrepreneurship and Innovation for Development, Annual Business cum Academic Conference, Mizoram Economic Association.

PARTICULARS OF THE CANDIDATE

NAME OF THE CANDIDATE	:	ASHLEY LALREMRUATI
DEGREE	:	DOCTOR OF PHILOSOPHY
DEPARTMENT	:	ECONOMICS
TITLE OF THESIS	:	BEHAVIORAL STUDY OF LIFE LIFE INSURANCE POLICY SELECTION IN NORTH- EAST INDIA
DATE OF ADMISSION	:	31.08.2021

APPROVAL OF RESEARCH PROPOSAL

1. DRC	:	12.04.2022
2. BOS	:	31.05.2022
3. SCHOOL BOARD	:	06.06.2022

MZU REGN.NO.	:	1800166
Ph.D. REGN NO.& DATE	:	MZU/PH.D./1785 of 31.08.2021
EXTENSION (IF ANY)	:	NIL

Head

Department of Economics

ABSTRACT

BEHAVIORAL STUDY OF LIFE INSURANCE POLICY SELECTION IN NORTH-EAST INDIA

AN ABSTRACT SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

ASHLEY LALREMRUATI

MZU REGISTRATION NO. 1800166

Ph.D. REGISTRATION NO. MZU/Ph.D./1785 of 31.08.2021

DEPARTMENT OF ECONOMICS

SCHOOL OF ECONOMICS, MANAGEMENT

& INFORMATION SCIENCES

DECEMBER, 2024

BEHAVIORAL STUDY OF LIFE INSURANCE POLICY SELECTION IN NORTH-EAST INDIA

BY

ASHLEY LALREMRUATI

DEPARTMENT OF ECONOMICS

SUPERVISOR

PROF. JAMES L.T. THANGA

SUBMITTED

IN PARTIAL FULFILLMENT OF THE REQUIREMENT OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN ECONOMICS OF MIZORAM UNIVERSITY, AIZAWL

1. Overview of the Study

The development of the life insurance sector plays an important role in economic development for developing economies and India is a developing country with the tenth largest life insurance market in the world (IRDAI, 2022). With continued efforts from the Government to increase financial inclusion with the objective of fulfilling the Sustainable Development Goals (Reserve Bank of India, 2020), a consumer's purchase decision regarding a life insurance policy is an important one. Demographic and socio-economic characteristics of consumers can affect their decision to own a policy (Zietz, 2003; Ulbinaite et al., 2013). Moreover, consumers make decisions under bounded rationality (Simon, 1955) and many studies have found that behavioural biases significantly impact life insurance purchase decisions (Bhatia et al., 2020). Thus, it is important to examine the life insurance market to understand its relation to economic development, holding patterns among the policyholders, the significant socio-economic factors that influence its demand, and the decisions involved in insurance selection using a behavioural framework.

Life insurance is a protection against the risk of premature death of an income earning member of a household. It is a contract between an insurer and policyholder for the insurer to pay the designated beneficiary a sum of money upon the insured individual's death (National Council of Applied Economic Research, 2011). In traditional societies like India, the joint family system itself could be considered an insurance umbrella for surviving family members. But in modern times, this safety net is increasingly made through the market mechanism by 'buying insurance'. Thus, individuals pay a price or premium to the insurance company for the contractual arrangement and the insurance company provides compensation if the specified event occurs. Individuals essentially pool their risks which gives insurance a social characteristic (Ranade & Ahuja, 1999).

The life insurance sector is of quantitative importance to the development of financial institutions (Outreville, 1996) and the development of a life insurance sector plays an important role in economic development for developing economies (Guérineau et al., 2018). Insurance contributes to the economy by promoting financial

stability, facilitating trade and commerce, mobilizing savings, allowing efficient capital allocation, and enabling better risk management and loss mitigation (Skipper, 1997). India is one of the fastest growing economies and ranked 10th on global life insurance business. The insurance sector has seen steady and consistent growth and is one of the fastest growing insurance sectors in the world owing to strong economic growth, regulatory developments, a young population with increasing disposable incomes and digital penetration (IRDAI, 2022). Thus, the study is concerned with understanding consumer behaviour and purchase decisions in the life insurance sector.

According to traditional economic theory, it is assumed that consumers are rational and make decisions to maximise their expected utility. On the other hand, behavioral economics proposes that consumers do not perfectly optimize their decision and fail to maximise utility due to limited time, knowledge and cognitive ability (Simon, 1955; Kahnemann & Tversky, 1979). Then, purchase decisions are made under bounded rationality and insurance policies, being financial products, can be difficult to understand. Consumers need a certain level of financial aptitude and knowledge to make fully informed decisions, and it had been found that financial literacy is not high even among educated individuals (Hung et al., 2009; Huston, 2010). Taking all of this into consideration, the study attempts to present a holistic understanding of the life insurance market in North-East India and examine the purchase decisions, holding patterns and psychological factors that may be at play for policyholders making life insurance purchases.

2. Life Insurance in India: Institutions and Market Overview

In 1956, the government decided to nationalize 245 Indian and foreign insurance companies, and the Life Insurance Corporation of India (LIC) was formed by an Act of Parliament, i.e., the Life Insurance Corporation Act, 1956. LIC was meant to provide a social security cover for all sections of society and act as an important mechanism to channel the savings of people for national development programmes (Kumar, 1991). LIC maintained a monopoly until the late 1990s when India liberalised its economy and the Insurance Regulatory and Development Authority (IRDA) Act, 1999 was passed as an Act of Parliament to establish IRDAI, a statutory body to

regulate and develop India's insurance sector, safeguard the interests of insurance policyholders and sustain orderly growth in industry (Rao, 1999).

Today, the life insurance industry in India is one of the largest in the world both in terms of total premium expenditure as well as number of policies sold. During 2022-23, the industry recorded a premium income of Rs.7.83 lakh crore with 12.98% growth, and there were 284 lakh new individual policies. India has the tenth largest insurance market in the world with a 1.9% share in global insurance premium. (IRDAI Annual Report, 2022). There are presently 24 life insurance companies registered in India among which LIC is the only public sector company. Although private companies have created stirring competition and innovation, LIC remains the single largest insurance provider in the country with about 64.02% of the market share of first year premium. Insurance intermediaries in the form of individual agents are the most effective way of distributing life insurance, as they create an awareness and a demand for the policies. Agents have been the major channel of distribution for insurance policies for the LIC since its inception in 1957. There are a total of 2628208 individual agents across the public and private sector, and they contributed to 52.76% of new individual business premium in 2023 (IRDAI Annual Report, 2023).

Even with consistent upward growth in the life insurance sector, the market is still underserved with insurance penetration still at 3% in 2022-2023 (IRDAI Annual Report, 2023). The awareness of life insurance itself still low (National Council of Applied Economic Research, 2017), and there exists a need to effectively promote life insurance ownership across the geographical and economic spaces in India through financial inclusion. Financial inclusion is positioned prominently as an enabler of developmental goals in the 2030 Sustainable Development Goals (SDGs) and the government has taken initiatives on banking, insurance, pension, market development, strengthening infrastructure, increasing financial and literacy awareness and consumer protection. In its efforts for financial inclusion, the Government of India introduced ‘Pradhan Mantri Jeevan Jyoti Bima Yojana’ (PMJJBY) in 2015 to provide low-cost life insurance and IRDAI also introduced ‘Saral Jeeva Bima’ in 2021 to meet the key needs of large number of customers with uniform terms and conditions across insurers. Some other key initiatives include increasing awareness among citizens on the benefits

and appropriateness of insurance, enabling greater availability of insurance and micro-insurance through increasing the number of delivery channels, creating Web Aggregators and Insurance Repositories to facilitate access and storage of insurance policy details, and creating the Insurance Ombudsman for quickly addressing grievances and mitigating problems of the insured customers (Reserve Bank of India, 2022).

3. Conceptual Framework

The study includes various concepts which can be broadly divided into concepts from life insurance and concepts from psychological factors.

3.1. Life insurance concepts

Since the study is mainly concerned with the purchase and selection of life insurance policies, it is important to define the terminologies and concepts used in life insurance policies. The policyholders were asked to give information regarding how many policies they owned, what kind of policy they chose, who it was bought for, premium amount, sum assured, policy duration, etc. These concepts and terminologies are explained below:

- Premium- The amount of money paid for an insurance policy. The premium can be paid in different intervals, e.g. monthly, quarterly, annually.
- Sum assured- Sum assured is chosen by the policyholder at the time of purchase, it is a fixed amount paid to the nominee of the plan in the event of the policyholder's demise.
- Policy duration- It is the duration of the life insurance policy which is chosen at the time of purchase. Policyholders choose different durations based on their needs and expected outcome.
- Term policy- It is the most basic policy which offers life coverage, i.e., the sum assured is paid to the beneficiary if the policyholder dies during a specified period. Term policies have lower premiums and there is no maturity benefit.
- Whole Life policy- It provides insurance coverage to the insured for their entire life, up to 100 years of age. The sum assured is paid to the beneficiary in the

event of the policyholder's demise. Unlike term policy, there is an addition of maturity benefit, which is paid to the policyholder if they cross 100 years of age.

- Endowment policy- It provides a combined benefit of life insurance and savings. They provide life coverage and help in saving money regularly over a period to get a lump sum at maturity. It is used to help fulfil long-term goals as the sum assured/ maturity is paid to the policyholder at the end of the policy duration/tenure.
- Moneyback policy- It combines life coverage and investment by paying a percentage of the sum assured throughout the duration of the policy and provides a way to plan life with an expected sum of money at regular intervals. It is more expensive as beneficiaries also receive the remaining portion of the sum assured and accrued bonus if the policyholder does not survive the tenure.
- Unit Linked Insurance Plan (ULIP)- It provides the dual advantage of life coverage and investment. A portion of the premium is invested in market-linked funds and investment assets chosen by the policyholder, while the rest provides life insurance coverage. It is considered a long-term investment instrument that comes with risk protection.
- Group policy- It covers a group of people under one master policy. The premiums are lower, and they are generally provided as part of an employment benefit.
- Pension policy- It is designed to provide a regular income scheme to policyholders after retirement. Policyholders accumulate a sum during their working years, which is then used to provide a steady income after pension. It provides financial security and helps with wealth creation after retirement.

3.2. Psychological concepts

The study is concerned with purchase decisions from the perspective of behavioural economics, i.e., how life insurance purchase decisions and selections are made under bounded rationality. Bounded rationality makes the assumption that individuals do not optimise their decisions because of limitations in cognition and price of gathering information. Under bounded rationality, i.e., rationality bounded by

human abilities, individuals rely on certain cognitive functions for decision-making. The theory of bounded rationality is concerned with the concept of decision-making called ‘satisficing’, which combines the words ‘satisfy’ and ‘suffice’ (Simon, 1955). Contrary to classical economists, Herbert Simon argued that consumers do not necessarily attempt to maximise utility when they make economic decisions. Due to constraints with cognitive ability and informational costs, people make decisions to find something that is good enough or satisfactory (Channa, 2016). Expanding on this theory, Tversky and Kahneman (1974) posited two systems of reasoning- System 1 and System 2. The operation of System 1 is quick and automatic, and there is no use of voluntary control and very little effort. On the other hand, the operation of System 2 is slow, requires more effort and demands deliberate mental activities (Ogaki & Tanaka, 2017). Essentially, System 1 responds to intuition and System 2 responds to reasoning. Tversky and Kahneman (1974) introduced three types of heuristics, or intuitive judgement used by System 1, viz., representativeness, availability, and anchoring, when they examined decision making under uncertainty. The use of System 1 in decision-making can also result in the influence of behavioural biases. Behavioural biases refer to systematic patterns of deviation from rationality in decision-making. They often lead individuals to make irrational choices or judgmental errors, as they base their decisions on cognitive factors such as emotions, beliefs, or social influences, rather than purely objective analysis (Chira et.al, 2008). Since it is the theoretical basis of the study that consumers act under bounded rationality, it is important to study the different heuristics and behavioural biases that influence decision-making. These concepts are explained below:

- Psychographics- It is the study of consumer personality traits in an attempt to understand and predict patterns in consumer behaviour. It includes the traits, values, attitudes and lifestyle of the consumer (Niosi, 2021).
- Risk-taking behaviour- It is the likelihood of consumers to take risks in general and financial domains. Individuals may be risk averse, risk neutral or risk lovers depending on the situation (Ding et al., 2010).
- Assertiveness- Assertiveness is a quality in individuals who more likely to voice both positive and negative opinions. Assertiveness includes admitting

personal shortcomings, giving and receiving compliments, initiating and maintaining interactions, and expressing feelings (Zeigler-Hill & Shackelford, 2016).

- Fatalism- Fatalism is the notion that individuals believe they lack the ability to determine their own outcome. They believe that their life is determined not by themselves but by God, fate or other external divinities (Burnett & Palmer, 1984).
- Information seeking behaviour- Information seeking behavior involves a set of actions including seeking information, evaluating and selecting relevant information and finally using this information (Kumar, 2021). It is the behaviour of individuals to actively pursue these steps before making decisions.
- Community involvement- It is the involvement of individuals in various community activities (Burnett & Palmer, 1984).
- Socialization preference- It is the tendency of individuals to prefer either socialising with other people or spending time alone (Burnett & Palmer, 1984).
- Past experience- It is the tendency of consumers to make decisions based on past experience. Past experience includes previous experience of product, service quality, branding and other marketing dimensions (Gronroos, 2000).
- Price consciousness- Price consciousness is the degree to which the price of a product affects a consumer's purchasing behaviour. The product's price is the main determinant of their purchase intentions and behaviour for these individuals (Rihn et al., 2018).
- Health-conscious behaviour- Health consciousness refers to the extent to which an individual tends to undertake health actions. They strive to improve and/or maintain their welfare by engaging in healthy behaviours, such as eating healthy food, physical activity, caring for prevention, etc. (Gould, 1988).
- Heuristic- Heuristics are simple rules enabling smart choices to be made using minimal information and exploiting the structure of information given the environmental context. They are essentially common-sense rules of thumb derived from experience, and they may be procedurally rational because they

are used by people to make relatively quick decisions in uncertain situations when a full assessment of available information is difficult and/or time-consuming (Tversky & Kahneman, 1974; Gigerenzer & Goldstein, 1996).

- Availability heuristic- It is a mental short-cut in which events that can be easily recalled are deemed to occur with higher probability and more attention is given to the most easily recalled information (Tversky & Kahneman, 1974). Individuals mistake the likelihood of an event for the number of times they have seen it.
- Representativeness heuristic- The representativeness heuristic involves the estimation of likelihood of an event by comparing it to an existing prototype in our minds. This prototype is what individuals think is the most relevant or typical example of the event in question. It can make people see pattern that is not there (Tversky & Kahneman, 1974).
- Anchoring and adjustment- It is a heuristic that involves making an initial estimate of a probability called an anchor, and then revising or adjusting it up or down in the light of new information. This typically results in assessments that are determined by an anchor value or reference point (Tversky & Kahneman, 1974).
- Affect- Affect is the instinctual reaction to a stimulus when people let their likes and dislikes determine their beliefs or preferences and refer to affective feelings when judging the risks and benefits of an activity (Channa, 2016).
- Halo effect- Halo effect is when favourable first impressions influence judgements. It causes people to look at a single quality to produce a positive or negative impression and obstructs people's view of the true characteristics of a person, product or organisation (Sum & Nordin, 2018).
- Confirmation bias- It is the tendency of people to overlook information that is contrary to their views in favour of information that confirms their views. When an individual supports or opposes a particular issue, he will not only seek information that confirms his beliefs, but also interpret new information in a manner that upholds his existing ideas and recall things in a way that it reinforces these ideas (Channa, 2016).

- Herding effect- It is a form of cognitive bias that is defined as a person's obvious intention to copy the behaviour or action of other people. Individuals decide to follow others and imitate group behaviours rather than decide independently on the basis of their own private information (Baddeley, 2009; Kurniawan & Murhadi, 2018).
- Social pressure- It is the tendency of people to conform to social pressure, real or imaginary (Channa, 2016).
- Overconfidence- It is a biased aspect that arises when a person exaggerates his ability. Most people display unrealistically rosy views of their abilities and prospects (Weinstein & Klein, 1996).
- Framing effect- If decisions are rationally made, how the same contents are communicated should not affect the decisions. But when the frame of communication changes, the perception of the same contents can change. For this reason, decisions can change depending on the frame of communication for the same contents. This is called the framing effect (Tversky & Kahneman, 1974).
- Asymmetric information- It is when one party to an economic transaction possesses greater material knowledge than the other party. This typically manifests when the seller of a good or service possesses greater knowledge than the buyer; however, the reverse dynamic is also possible (Akerlof, 1970). The concept of asymmetric information is especially relevant in the case of insurance because the role of information is more important in insurance than other markets. The asymmetric information problem may manifest in two ways, adverse selection and moral hazard. The term 'adverse selection' itself originated in the context of insurance, and the insurance market has been the focus for some of the earliest economic theories about it. Adverse selection exists in an insurance market when buyers of insurance have information about their risk that the insurers who underwrite their policies lack and use this information in making their insurance purchases. The policyholder may be better informed about either the probability of a loss, the distribution of the size of the loss in the event that a loss occurs, or both (Pauly, 1974). Moral hazard

is a change in behaviour after the purchase of insurance due to a sense of safety, wherein the insured may indulge in more reckless or careless behaviours due to the insurance coverage (Rothschild & Stiglitz, 1976).

4. Literature Review

The existing literature on life insurance has consistently found evidence that the development of the insurance sector is related to economic growth (Ward & Zurbruegg, 2000; Lee, 2019) and in almost all studies considering insurance demand at the country level, GDP shows up as by far the most important driver of growth (Outreville, 2012). An economy with a high level of GDP has a well-developed insurance market and high levels of the household income which results in a positive influence of GDP on life insurance demand (Emamgholipour et al., 2017; Mitra, 2017). The reviewed works found that life insurance is highly dependent on national income and per capita income as life insurance becomes more affordable and the need for insurance to protect dependents increases (Beenstock et al., 1988; Truett & Truett, 1990; Enz, 2000). Since one of the main purposes of life insurance was to protect dependants against financial problems in the case of a wage-earner's premature death, the dependency ratio substantially effects life insurance demand (Hammond et al., 1967; Ampaw et al., 2018). The real interest rate has a positive effect on the demand for life insurance as the increase in the interest rate increases the return of the investments by life insurance companies, which in turn increases the demand for life insurance (Sliwinski et al., 2012; Zerriaa & Noubbigh, 2016). In addition to these economic factors, studies have also shown that the demand for life insurance is positively affected by the savings which increases affordability (Sen & Madheswaran, 2013; Mitra, 2017), inflation which makes life insurance desirable to cover losses (Mathew & Sivaraman, 2017; Zerriaa & Noubbigh, 2016), life expectancy which induces consumers to cover longevity risk (Alhassan & Biekpe, 2015; Li et al., 2007), and growth of the financial sector and banking sector (Beck & Webb; 2003; Li et al., 2007; Alhassan & Biekpe, 2015).

In examining the life insurance market, it is crucial to understand the determinants of life insurance demand to the individual consumer. Zietz (2003), Outreville (2012) and Bhatia et al. (2021) have each presented a comprehensive survey

of the available empirical literature concerning demographic, social, cultural, economic, institutional and market structure factors affecting the demand for life insurance. Studies have found that the consumers' age and the demand for life insurance are related non-linearly (Chen et al., 2001; Brighetti et al., 2014; Sauter, 2014; Luciano et al., 2016), masculine societies tend to purchase less life insurance (Chui & Kwok, 2007; Luciano et al., 2016), marital status of the head of the household impacts the willingness to insure (Eisenhauer & Halek, 2001; Sauter, 2014), and the number of dependents determines the demand for life insurance (Li et al., 2007; Beenstock et al., 1988; Brighetti et al., 2014; Ampaw et al., 2018). In addition, educated consumers are more probable to purchase life insurance products (Gandolfi & Miners, 1996; Eisenhauer & Halek, 1999; Li et al., 2007; Frees & Sun, 2010; Mahdzan & Victorian, 2013) and the occupation of the head of household effects life insurance ownership (Kakar & Shukla, 2010; Brighetti et al., 2014; Luciano et al., 2016; Buric et al., 2017).

Despite the growing body of empirical literature regarding determinants of insurance demand, the role played by personality and emotions has attracted limited attention. Consumers are influenced by their personality, values, habits, desires they possess and the opportunities they think they have, even if these beliefs are incorrect. These subjective features are generally referred to as psychography or psychographic variables and they have been employed successfully in a few insurance-related empirical studies (Burnett & Palmer, 1984; Heo et al., 2022). It has been posited that psychographic profiles may be better able to differentiate consumer segments than traditional demographics (Sandy et al., 2013). Among the different facets of individual personality, the demand for life insurance is affected by a consumer's risk-aversion level as insurance is concerned with financial risk (Chang, 2004; Chen et al., 2006; Han & Hung, 2017; Wang, 2019). Strong emotional involvement can increase demand for insurance and lead to a less than optimal choice (Hsee & Kunreuther, 2000; Sunstein, 2002, Buzatu, 2013) and a consumer may base their demand decisions on their past experiences (Burnett & Palmer, 1984; Kunreuther et al., 2013). Gill et al. (2018) pointed out that religious belief is associated with the consumer's risk- taking behaviour and is positively correlated to the demand for life insurance.

In addition to an individual's psychography, behavioural economics posits that consumers act under bounded rationality and are influenced by a myriad of psychological factors in their purchase decisions. Individuals are bounded rational due to the absence of comprehensive information and facts, and consumers acting under bounded rationality use mental short-cuts to make decisions. They are also influenced by biases or judgemental errors that may prevent them from making optimal decisions. Onsomu (2014) and Mallick (2015) found that the heuristics of representativeness, availability, and anchoring are relevant to life insurance purchase decisions. Song et al. (2019) found that the experience of the family member's death is positively correlated with life insurance ownership as the death results in the arousal of negative emotions, stimulating the demand for life insurance. The reviewed works have found that life insurance policyholders are significantly affected by biases in their purchase decisions, viz, information bias, overconfidence, confirmation bias and framing effect (Veeraraghavian & Anbalagan, 2011; Bashir et al., 2013; Qadri & Shabbir, 2014; Kurniawan & Murhadi, 2018). Consumers are also influenced by their affect, displaying biases like the halo effect in which favourable first impressions influence judgements (Sum & Nordin, 2018; Kapoor et al., 2022). There are also cases of herding effect, where insurance buyers feel they are making correct decisions by following the decision of the majority (Chang et al., 1999; Pece, 2014; Demirer & Kutan, 2006; Sum & Nordin, 2018).

In the presence of these biases, many consumers make mistakes in their financial choices and poor financial decisions result in substantial financial losses to customers (Agarwal et al., 2009). This is especially relevant in the case of the insurance market as asymmetric information is inherent to the market and many studies have found the existence of asymmetric information and adverse selection in the national life insurance market of different countries (He, 2009; Colquitt et al., 2012; Chen et al., 2008). Moreover, in the case of a country like India, insurance agents are the most influential factor for selecting life insurance policy (Kumar, 2012) and the majority of policyholders came to know about life insurance policies through agents (Balaji, 2015). The foundation of this relationship is trust, as trust in insurance companies, as well as a company's image and reputation, has a positive relation with

insurance ownership (Guiso, 2012; Mutlu & Tas, 2012; Tanwar & Prasad, 2016; Siddiqui et al., 2023). This reliance on agents can lead to cases of mis-selling, the primary reason for lapsation of insurance policies in India (Subashini & Velmurugan, 2012; Nithiyalakshmi et al., 2016). Halan & Sane (2014) found that the total loss to customers in India on account of mis-selling of life insurance was estimated to be around USD 28 billion. Agents, with the motive of higher commissions, promote endowment policies even when term policies are more suitable for a consumer. Evidently, an insurance agent's failure to maintain a code of ethics may result in consequences such as policy lapse, breach of trust with the customer and a negative public image of the agent and the company (Surana & Gaur, 2013; Anagol et al., 2017).

It is evident that the life insurance purchase decision and selection is a complex one, and may be influenced by many demographic, socio-economic and psychological factors. Although research on these issues is fairly common and in-depth for other countries, they are relatively limited in the Indian context. There is little information about the insurance market in North-East India, where the financial system is considerably weak and financial inclusion is still low (Bhanot et al., 2012). The study addresses these gaps in literature and attempts to contribute to the existing knowledge by providing a holistic picture in studying the life insurance market in relation to economic growth, the holding patterns of life insurance policies, the determining factors of policy selection using a behavioural framework and the role of agents in the market.

5. Significance of the Study

Life insurance is a tool for financial security, saving, investment and loss reduction. It enables economic activities and contributes to the economy in terms of its size, employment and managed assets. In fact, economic growth of a country is characterised by the soundness of a national insurance market (UNCTAD, 1964; Skipper, 1997; Outreville, 1996). Life insurance can increase productivity and reduce the demand for liquidity by shifting from unproductive use to more productive use of resources (Webb et al., 2002). As it is, insurance penetration in India is still low despite its crucial role in improving financial well-being. Given its place in a developing

economy striving towards financial inclusion and economic growth, it is important to study the life insurance market and the understand its dimensions.

The purchase decision for a life insurance policy is a difficult one as insurance policies are often complex (Schwarcz, 2010). Buying a life insurance policy is not one decision alone; consumers have to select what type of policy to buy, how much premium to pay, how long they want the policy for, etc. Fully informed decisions require a good knowledge and aptitude for financial products. This is why consumers often make mistakes in their financial choices which result in substantial financial losses (Agarwal et al., 2009). Consumers are bound by time, information and knowledge limitations when they make these decisions. Further, since they make decisions under bounded rationality, they are also bound by cognitive limitations that can be in the form of heuristics and behavioural biases. Many studies have found that psychological factors such as biases and heuristics have a significant impact on life insurance purchase decisions (Bhatia et al., 2021). A consumer's buying behaviour is also influenced by their psychographics, i.e., their personality, values, attitudes and lifestyle (Burnett & Palmer, 1984). Thus, it is important to examine life insurance purchase and selection decisions to understand consumer behaviour and gain a more holistic view of the life insurance market.

6. Statement of the Problem

Asymmetric information is inherent to the study of life insurance as the role of information is more important in insurance than most markets and there is a potential for market failure arising from the existence of asymmetric information in insurance markets (Einav & Finkelstein, 2011). This source of incompleteness in the insurance market is viewed as a fundamental factor obstructing efficient operation of the insurance market (Cawley and Philipson, 1999). Incomplete information can affect consumers in their purchase decision, preventing them from choosing the optimal policy which can further lead to policy lapsation, a crucial issue in the life insurance industry in India. Asymmetric information can also manifest in the form of adverse selection, which is when one party has asymmetric information before a transaction and uses it to their advantage. If policyholders withhold information, the insurer cannot

accurately rate their risk of loss and if insurers withhold information, consumers cannot make informed decisions. This can lead to mis-selling, the primary reason for lapsation of insurance policies in India (Subashini & Velmurugan, 2012; Halan et al., 2014; Nithiyalakshmi et al., 2016). Consumers rely on agents to find a suitable life insurance product (Crosby & Stephens, 1987) and if consumers are not well informed, the complexity of financial decisions coupled with the prevalent collectivistic culture may lead to deceptive sales practices by agents in order to gain higher commissions (Ericson & Doyle, 2006). Since insurance purchase is a complex decision, it is important to examine how the policyholders in North-East India make purchase and selection decisions.

The available literature on the Indian life insurance market is mainly descriptive and focussed on the life insurance providers. The studies on demand are largely limited to demographic patterns of life insurance demand. However, the nature of life insurance and the risk it insures makes the purchase decision susceptible to decision limitations posed by behavioural finance. Consumer behaviour in the Indian life insurance market has remained largely unexplored and there is little knowledge about the psychographic and behavioural elements of insurance purchase, even though such studies have become common in developed countries. In efforts to promote life insurance, there are numerous advertisements and promotions highlighting the benefits of insurance which could drive the choices of consumers. Although these initiatives are desirable, there is little information regarding the right policy selection for consumer needs and little is known about the possible cognitive biases which influence decision-making. Insurance agents may use the same sales tactics and pitches that paint a desirable outcome irrespective of the differences in consumer status and goals. Thus, the study aims to fill this gap in literature and provide a more holistic view of life insurance purchase decisions in the context of bounded rationality for policyholders in North-East India.

7. Objectives of the Study

The main objectives of the study are:

1. To analyse the growth of insurance sector in relation to Gross Domestic Product (GDP).
2. To study the socio-economic and psychographic profile of life insurance policyholders and effect on subscription.
3. To analyse the relation between policy selection and expected returns of consumers.
4. To study consumers' behavioural bias in life insurance purchase.
5. To study the dimension of asymmetric information in the purchase of insurance.
6. To analyse the determining factors of policy lapsation.

8. Hypotheses

1. The growth of life insurance increases with increase in economic growth.
2. There is a direct relationship between expected returns and policy selection of consumers.
3. Behavioural bias has a significant impact on life insurance policy selection.

9. Methodology

9.1. Scope of the study

The geographical scope of the study is North-East India, which includes eight states i.e., Arunachal Pradesh, Assam, Meghalaya, Manipur, Mizoram, Nagaland, Tripura and Sikkim. With a weaker economy, the North-East region lags behind the rest of India and the status of financial inclusion is comparatively lower than the national average (Bhanot et al., 2012; Das & Guha, 2015; Maity & Sahu, 2021). The landscape, the range of communities and geographical and ecological diversity make these states quite different from other parts of the country. The region covers an area of 2,62,179 sq. km. constituting 7.9% of the country's geographical area. According to the 2011 census, the North-East region has only 45 million people or about 3.8% of

the total population in India. Assam is the most populous state and constitutes 68% of the entire North-Eastern population. The region has over 160 scheduled tribes and over 400 other tribal and sub-tribal communities and groups. The states all have long established traditions of community-based economic and social organization, and it is predominantly rural with over 84% of the population residing in the countryside.

The Life Insurance Corporation of India (LIC) is chosen for the study for several reasons. It was the only life insurance provider in India since the nationalisation of life insurance in 1956 to 1999 when IRDA was established. Till today, life insurance in India is coterminous with LIC as it is the oldest, largest and only public life insurance provider in India with about 64.02% of the market share of first year premium (IRDAI, 2022). It acts as a national insurance agency to pool and redistribute risks associated with death of policyholders in millions of households. It is also a dominant financial intermediary as a major savings institution to channel investible funds to productive sectors (Rao, 1999). LIC employs 1347325 individual agents, and these agents constitute the largest distribution channel of life insurance in India. While the individual agents sold an average 2 life insurance policies, LIC agents sold an average of 8 life insurance policies in 2022-2023. LIC covers 24.85 crore individual policies and 8.48 crore group policies, with a total income of Rs.8,53,661.86 crore. It had 204.65 lakh new business policies and accounts for 71.76% of the market share in policies in 2022-2023 (LIC Annual Report, 2023). Due to its market share and wide distribution across different states, there are no single private companies that can compete directly with LIC. Thus, LIC is chosen for the study and samples are collected from the policyholders and individual agents of LIC.

9.2. Sampling design

The study does not make attempts to have inter-state comparisons but is rather focussed on individual choices in life insurance purchase decisions. It was considered that state-wise classification is not required, and samples are selected in a staged manner. Three states out of the eight in North-east India are selected purposively, i.e., Assam, Meghalaya and Mizoram. Assam has by far the largest population, accounting for 68.25% of the North-East population. It has the largest economy and the highest

number of banks and financial institutions in the region. Moreover, the life insurance market is significantly bigger in Assam than the rest of the states, accounting for 84.98% of the total number of LIC individual agents and 61.63% of LIC offices in the region (Reserve Bank of India, 2021). While Assam is predominantly a plain area, the other two are hilly states with relatively poorer economies. While Meghalaya falls in the middle when it comes to the insurance market (9 offices with 701 individual agents), Mizoram falls on the lower end (7 offices and 150 individual agents) among the North-East states.

The selection of policyholders is done in a systematic manner using simple random sampling methods in a staged process. Firstly, the Branch Managers in the main offices of each state were approached for permission to conduct the research, after which a list of individual agents in the state was obtained. Agents are selected randomly from the list, who were further approached for a list of their clients/policyholders. Secondly, policyholders are selected with equal allocation among the selected agents, and the selected agents helped to facilitate the list and contact information of sample policyholders. The identified sample policyholders were approached for data collection. Since participation is strictly voluntary and confidential, all the policyholders were informed of the study and its parameters and they all signed consent forms before participating in the study.

The survey instrument used for policyholders is a questionnaire schedule to acquire relevant information regarding socio-economic and psychographic profiles, purchase behaviour, policy choices, expected returns and experiences of policyholders regarding their life insurance policies. The questionnaire was facilitated in-person as far as possible and was continued online according to the convenience of the selected policyholders. The selected agents and Managers were also interviewed in person using a semi-structured interview schedule to obtain information regarding their experiences as life insurance agents, with clients and with the company LIC itself. The structure of the interview was to better capture their views and opinions with open-ended questions than close ended questions and rating scales.

The sample size was calculated using the Cochran method (1963), i.e., $n = \frac{Z^2\,pq}{e^2}$, where, Z^2 is the abscissa of the normal curve that cuts off an area α at the tails, e is the desired level of precision, p is the estimated proportion of an attribute that is present in the population, and q is 1-p. The selected parameters in the study are policy selection (percentage of policies taken for life coverage), socio-economic status (percentage of policyholders who are salaried and percentage of policyholders with education above matriculate), psychographic profile (average score of the total scale) and behavioural bias (average score of the total scale). Since the number of policyholders in the region is not available and there is no secondary data for the psychological profiles, it was decided that the calculation of an efficient sample size would be undertaken after certain amount of data is collected. Then, after the first 110 samples were collected, the optimum sample size was calculated using the formula. The optimal sample size with 95% confidence and 5% precision was found to be 121. It was considered necessary to enhance the sample size in view of the need to accommodate the classification effect. It is a theoretical fact that the variance of any estimate decreases with increasing sample size. So, estimates will be closer to the true value with the increase in sample size (Gumpili & Das, 2022). It was decided that 360 samples would be collected to be equally distributed across the three states.

However, the survey could only be conducted among a total of 347 policyholders in the region and the rest could not be collected due to difficulties in locating and contacting the selected policyholders. After data cleaning and processing, another 12 cases had to be removed due to inconsistent responses such as selecting the same responses throughout the questionnaire and leaving too many questions blank. It should be noted that participation was strictly voluntary and there was no compulsion to the policyholders to answer the questionnaire in any particular way, or even at all. Then, the study had a final sample size of 335 policyholders. Since it is possible that one person holds more than one policy, the study covers 335 policyholders and 401 life insurance policies.

The study uses secondary data concerning life insurance and the economy in India from different sources. Economic data was obtained from Economic Survey and

RBI Reports on Handbook of Statistics on Indian Economy and Handbook of Statistics on Indian States. Secondary data about the life insurance industry was obtained from IRDAI Annual Reports, IRDAI Handbook of Indian Insurance and LIC Annual Reports.

9.3. Analytical framework

The study uses different statistical methods to examine its objectives and test the hypotheses. These methods are listed below:

1. The growth patterns of economic indicators and life insurance indicators was examined using Compound Annual Growth Rate (CAGR). To analyse the relationship between life insurance and economic development, GDP is used as the development indicator and annual total premium is used as the indicator for life insurance. Log regression is a common method used in previous studies, and it also showed comparative advantage over linear regression model as it revealed better model fit over the linear model by showing lower value of the Akaike information criterion (AIC) and Schwarz Information Criterion (SIC) criteria. The relationship is examined using log regression equation as presented:

$$\log Y = \alpha + \beta \log X + u_i$$

where, Y= GDP and X= Total premium

Although the results of the test confirmed the existence of a relationship between GDP and total premium, the existence of a possible two-way relationship or bilateral causality is tested using the Granger Causality test. The Granger Causality test is a test of predictive causality, or if "y_i causes y_j", which is shorthand for the more precise statement "y_i contains useful information for predicting y_j, over and above past histories of the other variables in the system. The test involves estimation of the following pairs of regression equations:

$$Y_t = \sum_{i=1}^{n} \propto_i X_{t-i} + \sum_{j=1}^{n} \beta_j Y_{t-j} + u_{1t}$$

$$X_t = \sum_{i=1}^{n} \gamma_i X_{t-i} + \sum_{j=1}^{n} \delta_j Y_{t-j} + u_{2t}$$

where, Y= GDP and X= Total premium

The results of the Granger- Causality test indicated that there is bilateral causal relationship between growth of GDP and total premium. Vector Autoregression is further used to observe the lagged relationship between the growth of economic development and life insurance. In VAR, each variable is a linear function of past lags of itself and past lags of the other variables. The variables are all treated symmetrically and modelled as if they all influence each other equally. The maximum lag length for VAR was selected using Akaike's Information Criterion (AIC) and Schwarz Information Criterion (SIC) to achieve parsimonious model.

Multiple macroeconomic factors were taken to examine the demand for life insurance, but due to high multi-collinearity, the dimensions are reduced using Principal Component Analysis (PCA). The new constructs were used to study the demand for life insurance policies using linear regression. Linear regression was commonly used in previous studies of demand for life insurance (Sliwinski et.al, 2013).

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2$$

where, Y= total premium, X_1= economic growth and X_2= real interest rate.

2. To examine the relationship between policy selection and purchase motivation, the study uses binary logistic regression. Binary logistic regression or the logistic model analyses the relationship between multiple independent variables and a categorical dependent variable and estimates the probability of occurrence of an event by fitting data to a logistic curve. The logistic regression coefficient for the i^{th} independent variable shows the change in the predicted log odds of having an outcome for one unit change in the i^{th} independent variable, all other things being equal. Logistic regression with multiple predictors takes the form:

$$logit\ (Y) = ln\left(\frac{P(Y=1)}{1-P(Y=1)}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n$$

which can be transformed into,

$$p = \frac{e^{\beta_0+\beta_1 X_1+\beta_2 X_2+\cdots+\beta_n X_n}}{1+e^{\beta_0+\beta_1 X_1+\beta_2 X_2+\cdots+\beta_n X_n}} = \frac{1}{1+e^{-(\beta_0+\beta_1 X_1+\beta_2 X_2+\cdots+\beta_n X_n)}}$$

Logistic regression calculates the probability of an event occurring over the probability of an event not occurring, and the impact of independent variables is explained in terms of odds. The model predicts the log Odds of Y as a function of X_1, X_2, … X_n. The Odds Ratio (OR) represents the odds that an outcome will occur given a particular exposure, compared to the odds of the outcome occurring in the absence of that exposure. Thus, the study uses binary logistic regression to estimate the probabilty of selecting a particular type of policy based on the purchase motivations. The dependent variables (type of policy) are coded as binaries, i.e., term policy is a binary variable which takes a value of 1 if the respondent owns a term life insurance and 0 otherwise, whole life is a binary variable which takes the value of 1 if a respondent owns a whole life policy and 0 otherwise, etc.

The relationship between policy selection and different indicators of socio-economic status was also analysed using the Chi-Square test of independence.

3. The data for consumer behaviour, psychographic profiles and behavioural biases of policyholders are collected using the Likert scale. Likert Scales are the gold standard of the psychographics industry and according to the Journal of Clinical Health Psychology, 9 out of 10 behavioural studies use a Likert-type scale (Hartley, 2014). The respondents were asked to respond to the statements regarding their attitude, opinions, behaviour and lifestyle on a five-point Likert scale from strongly disagree to strongly agree. The statements are designed to quantitatively capture qualitative details and recognize relevant aspects of the studied consumer traits (Demby, 1993). The study created a construct for the psychographic profile of consumers called ‘Individual Lifestyle Construct’ based on the available literature, shown in Table 1. Similarly, a construct for behavioural bias ‘Individual Behaviour Construct’

was also designed based on the available literature as shown in Table 2. Statements are listed with the Likert scale to reflect the concept of each variable being studied, and these statements are formulated in consultation with a psychology expert.

Table 1: Individual Lifestyle Construct

Sl.no	Psychographic Variables	Sources
1	Risk taking behaviour	Burnett & Palmer, 1984; Outreville, 2013; Ding et al., 2010; Han & Hung, 2017; Wang, 2019
2	Assertiveness	Burnett & Palmer, 1984; Nyhus & Webley, 2001; Zeigler-Hill & Shackelford, 2016
3	Fatalism	Burnett & Palmer, 1984; Beck & Webb, 2003; Omar, 2007
4	Information seeking behaviour	Burnett & Palmer, 1984; Kumar, 2021
5	Community involvement	Burnett & Palmer, 1984
6	Socialization preference	Burnett & Palmer, 1984; Nyhus & Webley, 2001; Verplanken & Herabadi, 2001
7	Past experience	Burnett & Palmer, 1984; Gronroos, 2000; De Wulf et al., 2001
8	Price consciousness	Burnett & Palmer, 1984; Rihn et al., 2018; Ndawula et al., 2024
9	Health-conscious behaviour	Burnett & Palmer, 1984, Gould, 1988; Cherry & Asebedo, 2022

Table 2: Individual Behaviour Construct

Sl.no	Behavioural biases	Sources
1	Availability	Tversky and Kahneman, 1974; Dobelli, 2014; Sum & Nordin, 2018
2	Representativeness	Tversky and Kahneman, 1974; Mallick, 2015
3	Anchoring	Tversky and Kahneman, 1974; Onsomu, 2014; Coe et al., 2016
4	Affect	Hsee & Kunreuther, 2000; Sunstein, 2002; Buzatu, 2013
5	Confirmation bias	Bashir et al., 2012; Channa, 2016
6	Herding effect	Baddeley, 2009; Sehgal & Tripathi, 2009; Kurniawan & Murhadi, 2018; Saxena & Ahuja, 2018
7	Social pressure	Channa, 2016; Giri, 2018; Lakshmi et al., 2022
8	Overconfidence	Veeraraghavan & Anbalagan, 2011; Qadri & Shabbir, 2014
9	Asymmetric information	Pauly, 1974; Chen et al., 2008; He, 2009; Colquitt et al., 2012

The dimensional structure of psychological factors (psychographic profiles and behavioural biases) is examined using Exploratory Factor Analysis, and Principal Component Analysis (PCA) is used for factor

extraction. The extracted components are further analysed using Confirmatory Factor Analysis. The new constructs are regrouped using mean and standard deviation based on relevance. 'Relevance' is an indication of how much of the trait the policyholder exhibits, i.e., if a given statement has low relevance, the policyholder gave a low score and hence does not display much of that particular characteristic. In other words, that factor is not very relevant to the policyholder. The mean (X) and standard deviation (SD) of the new constructs are used to categorise the new variables into low, neutral, moderate and high relevance as shown in Table 3.

Table 3: Grouping of new constructs

Scale	Label
Below (X-SD)	Low relevance
(X-SD) - (X)	Neutral relevance
(X) - (X+SD)	Moderate relevance
Above (X+SD)	High relevance

The relationship between the new extracted constructs for psychographics and biases and particulars of life insurance policies selection (selection of policy type, policy duration and annual premium) is examined using the Chi-Square Test of Independence. Further, the impact of psychological factors on policy selection is examined using binary logistic regression.

10. Limitations of the study

There are certain limitations in the study due to its nature and scope constraints, some of which are discussed below:

1. Some LIC branches approached for data collection were very hesitant to divulge information due to the sensitive nature of life insurance policies. There were many considerations on the part of the Managers and agents as they feared data leaks to their competitors. Although the purposes of the study and the confidential nature of information was clearly explained, and copies of the questionnaire and interview schedules were shown to them ahead of time, it was difficult to compile a client list from some agents. This led to some

structural challenges as there were difficulties and constraints in constructing a sampling frame for the policyholders.

2. Some policyholders were very reluctant to respond to the survey, and many of the selected policyholders had to be replaced from the client list after the selection was completed. Many of the policyholders who were contacted were afraid of scams and did not want to provide any information. It should be noted that these policyholders were first briefed about the study and their option to voluntarily participate, and they were clearly informed that there are no identifiers in the questionnaire such as name, phone number or address. Still, many policyholders chose not to participate not because of other limitations, but because of fear of scams. There were also difficulties in locating the sample policyholders due to challenges with geographical isolation. Since the policyholders were selected at random, canvassing proved to be a challenge for the facilitator.
3. A number of questionnaires were also returned with incomplete responses or non-responses and had to be eliminated from the study. Moreover, it was observed that many policyholders who participated in the study were not aware of their policy details. Many could not identify even what type of policy they held, and the facilitator often had to help them find this information.
4. Although the sample size is adequate, there are many classifications of different policy types. Due to this classification, the cell frequency of some policy types is compromised in the analysis.
5. Although the interviews with life insurance agents were exhaustive, the sample size is small as against the number of individuals associated with the life insurance industry in North-East India. It was also observed that some agents were hesitant to answer questions that could have negative connotations such as challenges working as a life insurance agent, challenges with claims, etc., although they were briefed about the study and the confidential nature of any information obtained from the interviews.

In spite of the limitations discussed above, sincere efforts were given to produce the best results possible and complete the study, and the results obtained in the study are also deemed to be valid, reliable and credible findings.

11. Scheme of Chapterisation

Chapter 1: Introduction

Chapter 2: Review of Literature

Chapter 3: Growth Performance of Life Insurance and Economy in India

Chapter 4: Life Insurance Holding Patterns in North-East India

Chapter 5: Bounded Rationality and Life Insurance Policy Selection: An Empirical Analysis

Chapter 6: Summary of Findings and Recommendations

Bibliography

12. Summary of Major Findings

The main findings of the study are discussed below:

12.1. Life insurance and economic development

1. There is a bilateral causal relationship between life insurance consumption (represented by total premium) and economic development (represented by GDP). The growth of the economy and life insurance sector are highly related with a lagged relationship, i.e., economic development causes lagged impact on insurance sector growth and vice versa. The results of Vector Autoregression suggested that the causation from GDP to total premium is in the fourth year and from total premium to GDP is in the second year. *This proves Hypothesis 1, i.e., the growth of insurance increases with increase in economic growth.*
2. Different macroeconomic indicators were included in the study to examine the demand for life insurance. Due to a multicollinearity problem, Principal Component Analysis was used to extract and construct variables, viz., the

variables ‘Economic growth’ and ‘real interest rate.’ The study found that the demand for life insurance is influenced by macroeconomic factors in such a way that the demand for life insurance increases with increase in factors related to economic growth, i.e., Gross Domestic Product, Gross National Income, Gross Domestic Savings, Financial Assets of the Household Sector, Financial, Real Estate & Professional Services, Consumer Price Index, Per Capita Income, population and life expectancy.

12.2. Holding patterns of life insurance policies in North-East India

3. On examination of the basic demographic profile of policyholders in North-East India, it was found that the demand for life insurance and age of policyholders are related non-linearly, as the demand for life insurance increases as individuals age and start families and decreases when they decline in age. The majority of life insurance policyholders (79.4%) are in the working age group, and the biggest contributors (35.52%) are between the ages of 25 and 34. The average family size is 2.25, and half of the policyholders (51.3%) have nuclear families (4-5 family members). People with dependents are more likely to purchase insurance as 64.5% of policyholders, single or married, had dependents and the average policyholder has less than 4 dependents. Most policyholders (77.3%) are graduates and after a certain point, i.e., after Rs.1,00,000, the policyholders with higher income do not necessarily buy more life insurance, indicating that consumption does not increase with increase in income after a certain threshold.
4. Half of the policyholders (53.7%) are salaried employees and 26% of the policyholders are self-employed, making up a large majority (79.9%). The senior agents with experience of 15-40 years from LIC revealed that there may be two big reasons for life insurance ownership being relatively high for salaried employees. First, salaried employees have regular income which makes a big difference in the capacity to regularly make premium payments. Second, there was a conscious effort from the life insurance agents in Mizoram and Meghalaya to sell to salaried employees, as this cohort is identified as the main target demographic. The agents had faced problems with lapsation due to

irregular income of policyholders, after which they made concerted efforts to target salaried employees to avoid this problem. The study found that more than two-fifths (46.11%) of the salaried employees bought a life insurance policy due to the influence of agents.

5. Most policyholders (83%) only have one life insurance policy and 95.26% purchased the policy for themselves, showing the significance of the purchase decision. The most common policies are moneyback (30.2%), endowment (26.9%) and term policies (21.7%), which was further corroborated by the agents in their interviews. Half of the policies (53.11%) have a policy duration less than 15 years, and the number of policies decreases as the duration increases, indicating that most policyholders do not opt for long-term policies. The average annual premium for policyholders is highest for ULIP policies (Rs.110340), and most policyholders (74.56%) pay an annual premium below Rs.50,00. The average sum assured for the policyholders across different policies is Rs.1448125.25, and the average sum assured is highest for pension policies at Rs.4688235.29.
6. The policyholders purchased a life insurance policy for different reasons, and the most significant purchase motivations are life coverage for risk mitigation (79.1%), saving for a specific purpose in the future (73.14%) and investment for wealth creation (47.46%). In examining the relationship between expected returns and policy selection, the positive and significant coefficient of binary logistic regression indicates a positive relationship for ULIP, term and endowment policies. This indicates that there is a direct relationship between expected returns and policy selection for consumers with ULIP, term and endowment policies. These policyholders made their purchase decisions based on the designed utility of the policies, i.e., the expected use of these policies aligned with the purchase motivation for the policyholders. *This proves Hypothesis 2, i.e., there is a direct relationship between expected returns and policy selection of consumers.* The same cannot be said for policyholders with moneyback, whole life and pension policies.

7. There is a significant relationship between life insurance policy selection and the demographic and socio-economic variables considered in the study, viz., the sex, marital and family status, number of dependents, employment status and income of the policyholders. Men are more likely to select term policies and women are more likely to select ULIP policies. The policyholders with dependents, whether single or married, choose policies that incentivise saving and investment, i.e., endowment and moneyback policies. On the other hand, policyholders without dependents or with independent children opt for term policies or ULIP policies, which are designed for coverage and investments. While moneyback policies (34.40%) and endowment policies (30.28%) are the most common policies among employed policyholders, term policies (25.47%), and endowment and ULIP policies (23.58% each) are most common for self-employed policyholders. Out of the 46 total ULIP policies, 25 policies (54.35%) are held by self-employed policyholders and are the only policy type for which self-employed respondents buy proportionally more policies than employed respondents. Policyholders in the lowest category of monthly income (Rs.10,000-25,000) opt for ULIP policies proportionally more than other income groups. 25.29% of policyholders in this income group chose ULIP policies, a higher proportion than other groups. It is reasoned that more policyholders in this income bracket choose ULIP policies as they are designed for profit and investment motives.
8. Agents play a crucial role in the distribution of life insurance policies. While only 22.1% of the policyholders actively chose to look for a policy themselves, as much as 40.9% of policyholders purchased a policy because it was brought to them by agents, i.e., 28.4% bought a policy when they were approached by an agent and 12.5% bought a policy when they were approached by an agent they knew personally. It is interesting to note that the agents are crucial not just to introduce policies to customers, but the personal connection with policyholders goes a long way in motivating them to purchase policies, i.e., agents are not just how policies are bought, it is also why they are bought. The agents are an important purchase motivation for the policyholders as 33.14%

bought a policy because an agent convinced them to do so and for 26.27% of the respondents, it was important that the policy was sold by someone they knew personally. This relationship is cultivated by the agents, and the agents interviewed in the study confirmed that they gave priority to building a good relationship with their customers, establishing a sense of trust with the company, and providing after-sales services.

9. Digitization has played a big role in catering to the responsibilities of agents and changed the work culture of the life insurance industry. The ease of communication afforded by increasing telecommunication and online platforms has positively evolved their relationship with clients and helped to resolve prominent pre-existing issues with clients such as late payments and misplaced insurance documents. The agents also noticed that more policyholders prefer automatic deduction and online methods of payment in the aftermath of the COVID pandemic, which had led to increased use of the LIC application, LIC Digital. The agents also observed that in the last few years, the increasing use of internet has led to increased awareness of consumers, as more people reached out to them for advice after learning about life insurance themselves.
10. The managers and agents interviewed for the study were very protective of LIC, and it was found that there was a strong sense of competition with the private sector. They observed that the increasing number of private companies in the last few years have affected their business, and it was harder to find new clients. There was a distrust of private companies due to previous experiences of poaching of agents and leaking of sensitive information to private companies. This resulted in extra security measures undertaken by the company to prevent further unethical practices.
11. The most common reason for lapsation of policies was active lapsation, i.e., the policyholders actively let the policy lapse due to mis-selling in the form of incomplete information about policies (38.46%) and payment terms (34.62%). This case of asymmetric information was confirmed by insurance agents who were also of the opinion that one of the most common reasons for lapsation

was mis-selling by agents when they do not do enough research before convincing a client to buy a policy. Some agents purposely give policies that are not suitable for clients due to pressure to reach sales targets and bring in more clients, which often results in policies that the clients cannot afford. Although the agents emphasized their practise of recommending policies based on the individual customer because "*Different people have different needs,*" it was found that 43.88% of the policyholders were not asked about their needs and purchase motivations before buying a policy. Moreover, policyholders are not thorough with their purchase decisions to make fully informed decisions. Many do not read the life insurance paperwork (34.63%), compare different policies to find the optimal choice (52.24%) or take the time to fully understand the risks (31.34%) before committing to a policy. Additionally, the agents also had experiences where clients did not disclose relevant information such as health conditions and lifestyle practices before the purchase of a policy. This indicates that there is a dimension of asymmetric information in life insurance purchases on the part of both agents and policyholders.

12.3. Bounded rationality and life insurance policy selection

12. There are significant psychological factors at play in the decision-making of policyholders. The psychographic profile of policyholders showed that many policyholders were information seekers (77.31%) and made decisions based on past experiences (77.01%) when it came to purchase decisions. It was also observed that the policyholders commonly displayed behavioural biases related to other people in their purchase decisions. They based their decisions on other people's good opinions about the company (65.97%), the reputation of the sales agent or company (51.01%) and other people who had benefitted from life insurance policies (53.73%). This shows the significance of biases and other people's role in the policyholder's decision-making process, as policyholders will base their decisions on other's experiences without observing how their cases and circumstances may differ.
13. Policyholders make decisions not just to purchase a life insurance policy, but also on what type of policy to buy, duration of the policy, annual premium

amount, etc. The study considered several psychographics and biases to examine their effect on these policy selection decisions. The dimensional structure of these variables was analysed using factor analysis and Principal Component Analysis was used for component extraction. Six variables were extracted, i.e., personality and decision-making, opinions and habits, risk-taking attitude, heuristics and herding, affect and information biases, and framing and confidence biases. The relationship between these extracted variables and selection of policy details was examined using Chi-square test of independence.

The study found that the policyholders' decisions on selection of policy details is affected by these variables, viz., there is an association between the type of policy they choose and their beliefs on fatalism, habits of information-seeking behaviour and community involvement, overconfidence and the framing of the policy that was sold to them. Policyholders with term policies show high overconfidence and susceptibility to framing biases, and policyholders with pension and endowment policies have a high belief in fatalism, are more involved in the community and exhibit information-seeking behaviour. When it comes to selection of policy duration, policyholders with high risk-taking attitudes tend to prefer shorter policy durations (less than 10 years). In the selection of premium amount, policyholders paying higher annual premiums (Rs.1,00,000-Rs.5,00,000) have high risk-taking attitudes and show traits associated with overconfidence and framing biases.

14. Psychographic traits and behavioural biases have a significant impact on life insurance policy selection, i.e., which type of policy they choose to take. Policyholders are significantly impacted by their personality and decision-making, opinions and habits, risk-taking attitude, affect and information biases, and framing and confidence biases in their decision to purchase a life insurance policy. This positive relationship is indicated by the positive and significant coefficient of binary logistic regression. *This proves Hypothesis 3, i.e., behavioural bias has a significant impact on life insurance policy selection.*

Term policyholders are more likely to be overconfident and take discounts/offers, whole life policyholders are more likely to be health and price conscious, and endowment policyholders are more likely to make emotional decisions and trust external sources of information such as other people, agents and companies even when the information is incomplete. ULIP policyholders are more affected by the psychological factors than other groups, and they are more likely to be health and price conscious and have high risk-taking attitudes. Contrary to endowment policyholders, they do not make decisions based on emotion or with incomplete/ asymmetric information. Since it was also found that policies taken for investment motives and wealth creation were less likely to lapse, it can be understood that ULIP policyholders make more careful decisions in their purchase decisions.

13. Conclusion

The growth of life insurance sector is closely related to economic development, and the two share a positive bilateral causal relationship. Economic development causes lagged impact on insurance sector growth, and the growth of life insurance sector growth causes lagged impact on economic development, i.e., their effects on each other may not show in the first year, but the causation can be observed in the next years. The demand for life insurance is significantly affected by macroeconomic indicators such that an increase in Gross Domestic Product, Gross National Income, Gross Domestic Savings, Financial Assets of the Household Sector, Financial, Real Estate & Professional Services, Consumer Price Index, Per Capita Income, population and life expectancy will lead to an increase in the demand for life insurance.

The most common policies are moneyback, endowment and term policies and most policies are bought for life coverage, saving and investments. The majority of policyholders have one life insurance policy and have dependents relying on them. Agents play a crucial role in the distribution of life insurance and influence consumers to make purchase decisions. Many agents target salaried employees as they have stable regular income streams, and thus, employed policyholders account for a large portion of the policyholders. Demographic and socio-economic profile of policyholders have

a significant impact on the selection of life insurance policies. Policyholders with dependents prefer policies for designed saving and investment, while policyholders without dependents prefer policies designed life coverage and investments. Policyholders who are self-employed and in the lower income bracket prefer ULIP policies.

It is clear that policyholders are bounded rational as purchase decisions and policy selections are significantly impacted by the psychographics and behavioural biases of the policyholders, i.e., their personality and decision-making, opinions and habits, risk-taking attitude, affect and information biases, and framing and confidence biases. Policyholders with ULIP policies make more informed and careful decisions compared to policyholders with other policy types. Agents play a crucial role in the distribution of policies, and influence how and why many policyholders purchase life insurance policies. There is a dimension of asymmetric information on the part of agents who sell policies without properly informing consumers about their policies and policyholders who do not make the effort to understand and know about the policies they purchase.

14. Recommendations

A few recommendations based on the findings discussed above are discussed:

1. The issue of asymmetric information for agents and policyholders has to be addressed. The role of agents is crucial and accountability for unethical business practices such as knowingly selling unfit policies to customers has to be improved. There is a need to create proper norms and checking mechanisms for policy disclosure to avoid mis-selling due to incomplete information of policies or payment schedules. The Government can institute mandatory disclosure norms to be followed at the time of sales by all life insurance agents and providers.

   It is undeniable that part of this responsibility has to be undertaken by consumers as well. Insurance policies have a wide range of properties and financial concepts, and it is a daunting task for many consumers to understand them and make optimal choices. Policyholders are also overconfident in their

knowledge of insurance products. The continuous efforts for insurance awareness can simplify these concepts for easier understanding and to encourage more customers to be fully informed before making purchase decisions. There can also be more attention in these awareness efforts to sensitise the consumers about the advantages of choosing a right policy based on their needs and goals, and the pitfalls of blindly choosing a policy without independent research. The Government can utilise the increased use of telecommunication and internet and create content for the consumers in this regard. This may take the form of educational infotainment that simplifies the concepts of life insurance for the average consumer and incentivises information-based decision making, in addition to their ongoing advertisements and awareness programmes.

2. The findings of the study can be substantiated by further research on related concepts and methodologies not included in the study. The ownership and selection of life insurance policies can be studied in relation to financial literacy and consumption habits of policyholders. Since the study is the first to look at psychological factors such as psychographic profiles and behavioural biases significant to the purchase of life insurance in North-East India, it is mainly concerned with finding which factors are associated with these purchase decisions. The significant factors in the study can be further investigated with existing models of behaviour and purchase decisions such as Expected Utility Theory, Life Cycle Model, Theory of Reasoned Action, etc. to construct theoretical frameworks and models of life insurance purchase decisions using Structural Equation Modelling, ANOVA, Probit regression, etc.
3. Since it was found that psychographic traits of policyholders are significant to the purchase decisions and policy selection of policyholders, research can be conducted on a larger scale to be utilized in market research and sales techniques. A model of psychographic segmentation can be developed to classify the customers based not on socio-economic factors but psychological profiles and behaviours. This marketing method can provide a better understanding of consumers which can be used by life insurance providers for

new marketing techniques and by the Government to increase the impact of their awareness efforts. This has been effectively used by other industries for effective targeting of the desired demographic of customers.

4. The agents revealed that digitisation has played a major role in changing the market and practices associated with life insurance policies from sales to after-sales services. The relationship between the rise of digitisation and the growth of life insurance is a topic that can be further explored to find cause and effect relationships and further implications on future business practices.
5. Policy lapsation is a loss for both policyholders and insurers. The scope of the study does not include effective ways to combat policy lapsation, which is an area that should be further researched. The issue of mis-selling and the causes of policy lapsation can be further studied on a larger scale with a bigger sample size to find the best solutions for prevention.

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