E-Procurement Practices in Life Insurance India

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Abstract-The IRDA (Insurance Regulatory and Development Authority) opened the market in August 2000 following an invitation to register. Foreign companies were allowed to own up to 26%. The supervisory authority IRDA can issue regulations under section 114A of the Insurance Act 1938. Since 2000 it has issued various regulations ranging from the registration of companies to the pursuit of insurance activities and the protection of insurance policy holders' benefits. Today, there are 24 life insurance companies serve, out of which 23 are private life insurers and one public sector life insurance corporation of India

The insurance sector is enormous and growing rapidly by 15-20%. Together with banking services, insurance services will increase by about 7% of the country's GDP. A well-developed and advanced insurance sector is a blessing for economic development, as it provides long-term funds for infrastructure development while strengthening the country's risk-taking capacity. The Procurement function operated as a support function instead of a strategic function as core processes, and policy issuance did not involve procurement activities (GEP Knowledge Bank). Insurers implemented traditional procurement processes without exploring the appropriate framework specific to the Insurance industry along with leveraging technology since procurement function was not a focus and priority; Research problems arise because many businesses still rely on traditional procurement, and literature has provided limited results on the specific framework and procurement effectiveness specific to life insurance leveraging technology. However, there are numerous challenges in developing an effective sourcing and acquisition program for insurance companies. Suppliers are usually deeply involved in the core processes of insurance companies. Switching suppliers can be difficult while maintaining customer service and ensuring an effortless compensation experience for policyholders. It is also essential for profitability growth and sustainability of the life insurance business for new business collection and renewal collections.

The degree of maturity of procurement in the insurance industry has traditionally lagged far behind other sectors, such as manufacturing, packaged consumer goods, and energy and energy supply (Source: GEP knowledge bank). As economic pressures increase, insurance companies have begun to look for ways to reduce costs. The IRDA regulation in June 2009 ULIP 500bps reduction brought the procurement organization to the forefront to sustain or lower costs. Procurement organizations across life insurance needed an application that supports spending by providing self-service solutions for requesting and ordering goods and services to the regular user to lower or sustain costs. Insurers switched to e-procurement without fully understanding the nuances involved in E-procurement. *This paper aims to research the determinants of e-procurement, how it influences e-procurement adoption, and how it impacts procurement effectiveness of cost and Leadtime at life insurance India. It also examines the effect of IRDA (Regulator) on procurement effectiveness*. There is also inadequate preliminary research on E-procurement and its significance in life insurance industries. There is a research opportunity to contribute to life insurance in India.

E-procurement, a new way to buy direct and indirect goods and services, is efficient in shopping circles. The service provider plays a crucial role in procuring solutions that meet customer needs and add value to the service. In the past, traditional procurement methods offered little transparency and less satisfaction with negotiations with suppliers. E-procurement provides transparency, a wider geographical dimension, less trade time, and better pricing. Sustainable savings can also be achieved with automated, easy-to-use purchasing, invoice management, and supplier opportunities. There is no point in expecting higher revenues each year from the same business areas or panel. They also need to diversify and bring in new products as a more significant number of customers. Also, compliance with customer agreements must be ensured.

E-procurement is an application that supports indirect spending by providing self-service solutions for requesting and ordering goods and services to the regular user who is not a professional procurement user (Gartner, 2012). However, various definitions of e-procurement exist. Tatsis et al. (2016) define e-procurement as the integration, management, automation, optimization, and empowerment of an

organization's procurement process through equipment, Technology, electronics, and web-based applications.
E-commerce allows shoppers to automate transactions and focus on more strategic activities. E-procurement solutions also help improve an organization's performance by reducing costs and time by ordering from suppliers and helping achieve a well-integrated delivery chain. While e-procurement solutions have many advantages, they also seem to have some barriers to their successful implementation. A previous study shows that many companies prefer traditional communication methods and exchanges with business partners (Manohar Giri, 2018). Therefore, businesses must understand how to implement e-procurement solutions efficiently and effectively.
For all successful e-procurement, the system needs suppliers' willingness and ability to trade electronically. Their cooperation is crucial to procurement success. However, such openness and transparency are new to most organizations. It requires significant cultural changes and high trust between participants (Harris & Dennis, 2014).
This research paper's primary focus is on E-procurement and its effectiveness on Leadtime and Cost. The secondary focus is how the determinants of E-procurement, i.e., E- sourcing, E-tendering, E-Negotiation, E-Invoicing, E-Design, and E- Informing influences E-procurement adoption, and finally, how IRDA (regulator) policies influence/impact the procurement organization and its performance.
A research method was essential to identify and study the Problem. This work will help better address the issues suppliers, and life insurers face in implementing e-procurement. The researcher intended to apply a quantitative approach to enablers and barriers affecting Life insurance companies in India to use e-procurement

Key Words: E- Tendering, E-Procurement, E- Sourcing, E-Informing, E- Negotiations, E-Invoicing, E-Informing, E-Procurement adoption, Procurement effectiveness, Life insurance India, category experts, financial services, PLS-SEM (Partial least square structural equation modeling)

1.INTRODUCTION

1.1. Life insurance Industry in India

The insurance industry of India has 57 insurance companies 24 are in the life insurance business, while 34 are non-life insurers. Life Insurance Corporation (LIC) is the sole public sector company among the life insurers. There are six public sector insurers in the non-life insurance segment. In addition, a sole national re-insurer, the General Insurance Corporation of India (GIC Re). Other stakeholders in the Indian Insurance market include agents (individual and corporate), brokers, surveyors, and third-party administrators servicing health insurance claims

1.1.1. Market Size

In India, the overall market size of the insurance sector is expected to be US$ 280 billion in 2020. The life insurance industry is expected to increase at a CAGR of 5.3% between 2019 and 2023. India's insurance penetration was pegged at 3.76% in FY20, with life insurance penetration at 2.82% and non-life insurance penetration at 0.94%. Regarding insurance density, India's overall density stood at US$ 78 in FY20.
The market share of private sector companies in the general and health insurance market increased from 47.97% in FY19 to 48.03% in FY20. Private players held a market share of 33.78% in premium underwritten services in the life insurance segment in FY20.In FY22 (until May 2021), premiums from new businesses of life insurance companies in India stood at US$ 3.0 billion. In India, gross premiums written by non-life insurers reached US$ 26.52 billion in FY21 (between April 2020 and March 2021), from US$ 26.49 billion in FY20 (between April 2019 and March 2020), driven by solid growth from general insurance companies. The gross direct premium of non-life insurance companies rose 11.4% every year to Rs. 12,316.50 crores (1.6 billion) in May 2021. The general insurance industry is expected to increase by 7-9% in gross direct premium income in FY22, backed by healthy growth from the health and motor segments. Six standalone private sector health insurance companies registered a jump of 66.6% in their gross premium at Rs 1,406.64 crore (US$ 191.84 million) in May 2021, as against Rs. 844.13 crores (US$ 115.12 million) earlier.
In March 2021, health insurance companies in the non-life insurance sector increased by 41%, driven by rising demand for health insurance products amid the COVID-19 surge.
According to S&P Global Market Intelligence data, India is the second-largest insurance technology market in Asia-Pacific, accounting for 35% of the US$ 3.66 billion insureTech-focused venture investments made in the country.

1.1.2. Road Ahead

The future looks promising for the life insurance industry with several changes in the regulatory framework, which will lead to further changes in how the industry conducts its business and engages with its customers. The insurance industry is expected to reach US$ 280 billion by the end of 2020. The life insurance industry in the country is expected to increase by 14-15% annually for the next three to five years. The scope of IoT (internet of things) in the Indian insurance market continues to go beyond telematics and customer risk assessment. Currently, 110+ InsureTech start-ups are operating in India. Demographic factors such as the growing middle class, the young insurable population, and growing awareness of the need for protection and retirement planning will support the growth of Indian life insurance.

Note: The conversion rate used for July 2021 is Rs. 1 = US$ 0.01346

(Source: https://www.ibef.org/industry/insurance-sector-india.aspx)

1.2. Background of the study

After the Insurance Regulatory & Development Authority (IRDAI, formerly IRDA) was established as an autonomous body under the IRDA Act 1999, private sector companies promoted insurance companies. There is 24 life insurance company today in India, with 23 private and one public sector. There is fierce competition between these companies for market share and the acquisition of new customers. The procurement function's effectiveness and efficiency are the critical factors determining success and bringing competitive advantage to the organization's functioning. Given the fierce competition in today's environment, companies have invested significantly in advanced techniques, tools, and strategies to ensure growth. Technology has played a vital role in helping businesses, ensuring continuity, and serving customers as remote work changed the service and sales ecosystem

E-Procurement was introduced in India in FY 2003 and 2004. Andra Pradesh was the first state to roll out E-procurement in government procurement. A pilot project was launched in January 2003, and the operations were rolled out to all state government departments in July 2004 (R Raguveer Chapter 22). This research paper examines the determinants of e-procurement impact on E-procurement adoption at Life insurers India, the impact on procurement performance specific to Cost and lead times, and finally, the impact of govt policy (IRDA) on E-procurement adoption and Procurement effectiveness of cost and lead-times. Though E-procurement has its advantages, there are various challenges in implementing E-procurement. Kalakoda, R & Robinson, M. (2001) listed the five key challenges procurement managers are facing in the increasingly competitive business world are:

[1] Reducing order processing costs and cycle times
[2] Providing enterprise-wide access to corporate procurement capabilities
[3] Empowering desktop requisitioning through employee self-service
[4] Achieving procurement software integration with the company's back-office systems
[5] Elevating the procurement function to a position of strategic importance within the organization

The current study also recommends administrative allegations to improve organizational and procurement performance. In line with the objective of the present research to investigate and understand the issue, the current study aims to provide practical implications for procurement managers, leads, and practitioners

1.3. Role of Information Technology

According to Min, H. & Galle, W. P. (1999), information technology (IT) has helped to solve several issues in the public sector, and electronic Procurement (E-Procurement) has been introduced as a method to attain higher, more value-effective procurement systems. The execution and usage of information technologies have a powerful impact on business processes. E-Procurement technology is defined as the usage of network technologies and practices that facilitate the exchange of information with the help of public or non-public networks.

Trauth, T. (2001) said that companies had modified purchasing goods and services due to the availability of Internet technologies. Organizations have introduced a technology referred to as E-Procurement. The Organizations that initially adopted the concept of e-procurement systems were Dell, IBM, etc., in 1990.

Min, H. & Galle, W. (2003) found that the extent of information technology infrastructure integration between organizations directly affects the savings and benefits of the procurement process. Lack of

information technology integration has constrained the benefits developed through E-Procurement employment owing to operations like the need for critical information.

Singh A. et al. (2006) said that information technology plays an essential role in India and has transformed India's image from a slow-moving bureaucratic economy to a land of innovative entrepreneurs. The IT sector in India generates 2.5 million direct employees. India is now one of the biggest IT capitals of the modern world, and all the major player in the world who belongs to the IT sector are present in the country. The use of Information Technology (IT) has made the world small, and through it, business transactions are conducted globally at a faster pace. The age of connectivity has reduced distances and brought people closer. Today many companies use Information Technology as a strategic tool to compete with others.

1.4. Problem statement

Many developing countries are undergoing the primary modernization process. There are 622 million internet users in India from a massive population of 1.39 billion. The number of users may increase to 900 million by 2025 (https://economictimes. Indiatimes. com/tech/technology/india-to-have-900-million-active-internet-users-by-2025-says-report/articleshow/83200683.cms). Procurement is a combination and collection of processes that involve many steps and interactions with the other departments of an organization, suppliers, and third-party. Because procurement costs typically run more than 50% of operational costs (Indrė Lapinskaitė, 2014), the procurement process provides many opportunities for saving costs that can significantly affect a company's profits.

The rule of thumb is that a 5% savings in purchasing costs can increase profit by 50% and increase Revenue by approximately 50% or reduce overhead costs by about 20% (Patel Prakash Kumar Hasmukh Bhai, 2014).

Traditionally at life insurance India, Procurement was paper and conversion-based, usually with procurement officers interacting with long-time partners or well-known suppliers and purchasing at fixed prices. In recent years, this has changed to a certain extent to become a strategic function. Procurement officers seek suppliers that fit a company's overall strategy (Patel Prakashkumar Hasmukh Bhai, 2014). Life insurance companies over the years have moved from e-mail-based procurement operations to P2P platforms like oracle, Ariba, GEP, Expenzing, and SAP modules (Source: Public disclosures) without knowing the nuances and how to derive the value of such systems. Workload analysis at one sizeable industrial company found that less than 40 percent of the procurement manager's time was spent on core strategic activities (John Wiley, 2020). The daily focus was filling out reports and completing administrative-type tasks. It is *an* excellent example of manual processes in an automated P2P process. To remain competitive, procurement professionals must step up and embrace their new roles as enablers of business strategy, agility, innovation, and cost reduction.

So, the more a company can reduce staff involvement in purchasing by quickly issuing a purchase order, the more it can concentrate on operational costs and bring strategic focus to the procurement function. E-Procurement involves moving the procurement process online to cut out steps and save money. In business, time is money. The Internet has made the world smaller, and business transactions are conducted globally faster (Patel Prakashkumar Hasmukhbhai, 2016). The age of internet connectivity has reduced distances and brought businesses closer. Today many companies use E-Procurement as a strategic tool to compete with others. Research problems arise because many businesses still rely on traditional procurement, and literature has provided limited results on E-procurement practices.

This research paper focuses on addressing this problem and bringing a specific E-procurement framework and the most practical combination of variables involving E-sourcing, E- Tendering, E-invoicing, E-Design, E-informing, and Government policies in Life insurance in India. It also examines how these determinants impact the E-procurement adoption and procurement performance of Cost and lead times. It is also worth noting that there is a lack of adequate research material on Life insurance India procurement maturity, e-procurement, and adaptation framework.

Exhibit 1: Search results in top 5 search engines for lack of research material on life Insurance India Procurement maturity

Top 5 Search Engines	Search Key – Procurement in Life Insurance India	Related search results -12th Oct 2021
Goggle /Google Scholar	One on the first page	GEP Knowledge bank, rest on Policy buying and tenders
Bing	None	Tenders and Policy buying
Yahoo India	None	Tenders and Policy buying
Yandex	Two	GEP and SAP-based. Others are Tenders
DuckDuckgo	None	Tenders and Policy buying

There is only one paper found on E-procurement's electronic reverse auction part. (Shalev, 2010) Findings indicated that competition among suppliers, the complexity of the purchase, and how well the purchase was specified strongly correlated with E-Negotiations success. These factors are purchasing management-related conditions only. The other factors of E-procurement have not been studied in detail in India. Therefore, the researcher has selected to study the E-Procurement practices in Life insurance industries covering Pan India branches and a few abroad locations.

1.5. Research Questions

a) What are the determinants of E-Procurement adoption, and identify the effective one?
b) What is the effect of E-procurement determinants on E-procurement Adoption?
c) What is the mediating effect of E-procurement Adoption on the path of Procurement performance?
d) What is the moderating effect of government policies on the path of E-procurement adoption and Procurement performance?

1.6. Research Objectives

This research paper examines the determinants of E-procurement's impact on Life insurance in India and its impact on procurement performance specific to Cost and lead times. It studies the association between electronic procurement practices and their impact on procurement performance. In detail, the present study finds the determinants of electronic procurement. It investigates their impact on e-procurement and procurement performance.

a) Examine the determinants of E-Procurement adoption and identify the effective one
b) Examine how the determinants of E-Procurement impact E-procurement Adoption
c) Examining the relationship between E-procurement and its impact to cost and Lead times
d) To examine the moderating effect of government policies on the path of E-procurement adoption and Procurement performance

The present research also recommends administrative allegations to improve organizational and procurement performance. In line with the objective of the present research to investigate and understand the issue, the present research aims to provide practical implications for procurement managers, Procurement leads, and practitioners

1.7. Scope of the study

The life insurance sector in India comprises 24 life insurance companies covering most of the cities and towns in India. The scope of the study is E-Procurement determinants in life insurance in India impacting E-procurement adoption, which uses E-Procurement. The scope also includes E-procurement adoption impact on Cost and delivery and how government policies impact the Life insurance procurement environment. The focus is the Life insurance industry, including private or public life insurers. General insurance, health insurance, and other insurance sectors are out of the scope of the study. Life insurance is categorized in Banking and financial services category in India. The research is conducted by the quantitative method by utilizing both primary and secondary data.

1.8. Chapter Summary

The chapter summarized the following

a. Economic scenario and Procurement state - Focused on the evolution of life insurance in India since 2000, the Role of IRDA and the Life insurance India market, its prospects, the combination of private and publicly owned companies, and how the insurance sector is a blessing to the country with its contribution to infrastructure. It was also imperative to describe the role of Procurement and how the procurement function was not a focus and operated as a support function instead of a strategic function unless economic pressures brought procurement to the

forefront. Procurement function effectiveness was also essential for profitability growth and sustainability of the life insurance business for new business collection and renewal collections.

b. Opportunity -The chapter is also engrossed in the adoption of e-procurement and how it can be an enabler in the procurement life cycle and thus negate the challenges of procurement maturity in the Insurance industry. The research paper is also in resonance with the current Pandemic situation, where companies are striving for digital transformation to mitigate the business challenges of the pandemic environment as an opportunity. To generate research in this area is also an opportunity as there is inadequate preliminary research in E-procurement and application in life insurance industries.
c. E-Procurement and Role of IT- The IT sector in India is generating 2.5 million direct employees. Today, India is one of the biggest IT hubs/capitals of the modern world, and all the major players in the world belonging to the IT sector are present in the country. E-procurement is an application that supports indirect spending by providing self-service solutions for requesting and ordering goods and services to the regular user who is not a professional procurement user (Gartner, 2012).
d. Background of the study-There is 24 life insurance company today in India, with 23 private and one public sector. There is fierce competition between these companies for market share and the acquisition of new customers. The procurement function's effectiveness and efficiency are critical factors determining success and bringing competitive advantage to the organization's functioning. E-Procurement practices in life insurance in India can bring that competitive advantage with the proper framework and combination of determinants. In detail, the present study finds the determinants of electronic procurement practices. It investigates their impact on e-procurement adoption and procurement performance.
e. Problem Statement -This research paper focuses on addressing this problem and bringing a specific E-procurement framework and the most practical combination of variables involving E-sourcing, E-Tendering, E-invoicing, E-Design, E-informing, Procurement processes, and Government policies in Life insurance India. It also examines how these determinants impact the E-procurement adoption and procurement performance of Cost and lead times. It is also worth noting that there is a lack of adequate research on Life insurance India procurement maturity, e-procurement, and adaptation framework.
f. Scope of the Study - E-Procurement practices in the life insurance industry in India are using E-Procurement platforms. The focus is the Life insurance industry, including private or public life insurers. General insurance, health insurance, and other insurance sectors are out of the scope of the study.

2. LITERATURE REVIEW

This section provides an overview of the literature directly or indirectly related to the research. The first part of the literature review contains theoretical literature linking e-procurement and procurement performance. The second part contains the empirical literature presented thematically in line with the study's objectives. The literature has been obtained from various sources, such as peer-reviewed journals, books, and published research reports

2.1. E-Procurement Adoption and Procurement effectiveness

2.1.1. Procurement and E-Procurement definition

Procurement- deals with purchasing goods, works, and services (Baily et al., 2008). It encompasses "the business management function that ensures the identification, sourcing, access, and management of the external resources that an organization needs or may need to fulfill its strategic objectives" (Kidd, 2013).

E-Procurement- is the business-to-business or business-to-consumer, or business-to-government purchase and sale of supplies, work, and services through the Internet (Tassabehji and Moorhouse, 2008). E-procurement describes electronic methods, typically over the Internet, to conduct transactions between awarding authorities and suppliers (Rotich and Okello, 2015). Public e-procurement has been defined as the use of information and communication technology, such as the Internet, by governments in the procurement relationship with bidders to acquire goods, works, and services required by the public sector (Davila et al., 2003).

2.1.2. E-Procurement Adoption relation to procurement effectiveness

Electronic procurement uses digital technologies in purchasing (De Boer, L.; Harink, J.; Heijboer, 2018). It is more than online shopping events because it includes several activities to strategically reconfigure and integrate buyer and supplier business processes into a unique digital environment (Li, X.; Pillutla, S.; Zhou, H.; Yao, 2018). It is a central activity because of the growing concern about efficiency and the impact of companies on society (Dotoli, M.; Fanti, M.P.; Meloni, C.; Zhou, M.C, 2018) through three main issues: environmental (Walker, H.; Brammer S, 2012), economic and social (Santoyo-Castelazo, E.; Azapagi,2013) criteria that allow organizations to achieve a long-term competitive advantage. In particular, electronic procurement adoption aims at sustainability goals in the procurement and supply chain, allowing organizations to optimize the underlying transactions. It primarily affects the different business results. Some researchers emphasize its effects on transparency by making the organization more sustainable from a social point of view; In fact, every relationship between people is tracked on the platform and is thus more balanced because every employer has access to the same information (Vaidya, K.; Sajeev, A.S.M.; Callender, G, 2012) and thus the information asymmetry between people involved in the procurement process is reduced. It, in turn, leads to the availability of information, facilitating the evaluation of procurement performance and thus reducing corruption through effective reporting mechanisms between procurement authorities and suppliers. E-procurement adoption affects quality by improving customer service, usability, professionalism, flexibility, and costs that are reduced by avoiding many unnecessary activities, such as at the company's inventory level (Cabras, I, 2010) by shortening the whole purchasing process, avoiding unnecessary activities and bureaucracy, also by combining or centralizing purchases so that, for example, the supply of production inputs by a multinational company, which is used by all branches, is purchased through a centralized purchase and not from an outlier associated with each branch. Such a process can reduce unnecessary activities, shorten the process, and reduce costs.

E-procurement adoption also affects organizational sustainability (Srivastava, S.K, 2017) by integrating requirements, specifications, and criteria compatible with environmental protection, social development, and economic development, namely striving for resource efficiency, improving the quality of products and services, and ultimately cost optimization. It can also reduce the company's carbon footprint and environmental waste, improve the public image, extend the useful life of materials, and reduce the costs of waste disposal and cleaning (Ramkumar, M.; Jenamani,2014). E-procurement adoption can prevent the growing deterioration of the environment, lack of raw material resources, and increasing pollution; its implementation allows companies to reduce paper-based activities throughout the dematerialization process, such as digital archives, reduce inventory levels by getting materials at the right time, and connecting companies and their business processes directly to suppliers while eliminating all interactions between them (Dotoli, M.; Fanti, M.P.; Meloni, C.; Zhou, 2013). An effective e-procurement system helps the company organize its interactions with its leading suppliers, reduce problems with suppliers and improve customer service, shorten the entire purchasing process, and improve its quality.

E-procurement adoption also improves efficiency on the supplier side (Belisari, S.; Appolloni, A.; Cerruti, C, 2019). It allows organizations to eliminate poorly rated suppliers through, for example, vendor rating tools and better supplier information, thereby reducing problems and the collusion between them by improving the chances of having "longer-term relationships" (Smart, A.; Harrison, 2013). However, the effect of introducing e-procurement is not always considered beneficial: this is a somewhat controversial topic in the literature. While some studies show positive effects on firm performance, others show the opposite and different evidence. Collins and Vincent-Jones emphasize that even though e-procurement aims to reduce or eliminate traditional procurement disadvantages by enabling more integrated and efficient processes, it sometimes costs more than its benefits. One of the main reasons is related to the change management problems that such a project faces, and in particular, the resistance to changing attitudes and practices of people within the organization. If the people working inside the company avoid accepting e-procurement tools and try to resist the changing process and the balancing of intra-company relationships, the benefits of e-

procurement tools will be hampered by change management barriers, and the linked investment may have sunk costs higher than the benefits.

2.1.3. Procurement effectiveness

Many industries adopt e-procurement technologies to improve performance and growth opportunities (Caniato et al., 2009; Oliveira and Martins, 2010). Strategic decisions for a project are made in a shorter time (Piotrowicz and Irani, 2010) with cheaper, higher quality (El-Saboni et al., 2009) and improved business opportunities (Kabugumila et al., 2016). It also provides opportunities for companies to connect and partner with other companies globally and pave the way for synergies and investments (Oliveira and Martins, 2010). E-procurement is becoming strategic popularity for a company's competitive advantage and cost minimization (Hong and Kwon, 2012). Wider choices of products, suppliers, and negotiations are made online (Baladhanadyutham and Venkatesh, 2012). It is primarily used in large project-oriented companies (Vitkauskaite and Gatautis, 2008). In addition, it provides accurate information, the constant movement of goods (Cotteleer and Bendol, 2006; McAfee, 2002), and makes the business process smoother (Piotrowicz and Irani, 2010). E-procurement facilitates the movement of documents such as purchase orders, shipping receipts, and delivery confirmation (Rushton et al., 2010) and facilitates bidding procedures and documents (Bauasa et al., 2013). E-tendering, an e-procurement tool, is another Internet-based application that reduces time, paperwork, and bidder risk and increases tendering transparency (Al-Yahya and Panuwatwanich, 2018). It enables the participation of suppliers (Hanson, 2018) and positively affects the company's results (Ayatse, 2012; Belisari et al., 2019).

United Nations e-Procurement Study 2011 towards transparency and efficiency in public service delivery revealed that electronic tendering is possible. The federal government saves more than $ 6 million by outsourcing manual duplication and distribution of documents. The study showed that implementing e-procurement is not guaranteed success in procurement. The success of this system requires regulations and practices if the system succeeds. The study also found that several procurement programs fail due to poor Technology and a lack of leadership. Other factors that lead to such failures are lack of awareness, resistance to change, poor coordination of functions, and ineffective implementation of programs.

Brazel and Dang (2008) found that introducing ERP is more efficient flexibility, which means better revenue management. As part of flexibility, ERP systems improve management accounting and decision-making, which improves management's ability to manage accruals and other factors that may constrain the organization's abilities. He and Thuraisingham (2007), in their study of Enterprise Resource Security Planning Systems, noted that e-procurement improves the security of management information which can improve procurement performance. The above observation agrees

Martinez's (2008) findings on procurement objectives, E-procurement, and supplier coordination in competition and the global environment show that E-procurement systems improve customer delivery and enable collaboration with suppliers and customers. It also facilitates better supplier and customer relations and enhances the achievement of strategic procurement objectives. Nah and Santiago (2006), in their research on critical success factors in implementing enterprise resource planning; and updates, revealed that the deployment of E-Procurement requires critical factors such as a business plan and direction, change management, communication, appropriate technical skills, project, and implementation management, senior management commitment, and leadership and systems management.

2.2. Effect of Government policies on E-Procurement adoption

The Insurance Regulatory and Development Agency is the primary organization or supervisory body that regulates the country's insurance industry. It lays down rules and regulations for the operation of the insurance sector. Its sole purpose is to protect policyholders' interests and develop the industry (Source: https://www.irdai.gov.in/ annual reports).

IRDA or IRDAI regularly advises insurance companies if rules and regulations change. The regulator directs the insurance industry to promote the efficiency of the insurance business while overseeing premiums and other activities. They also regulate outsourcing and procurement practices to ensure that insurers follow prudent practices on managing risks arising out of outsourcing to prevent negative systemic

impact and protect the interests of the policyholders. IRDA also ensures sound and responsive management practices for effective oversight and adequate due diligence concerning outsourcing activities by Insurers.

The life insurance sector is plagued with dynamic regulatory changes to meet the governance requirements and policyholders' interests. IRDA has announced more than 150 such regulations in the last ten years. K. Mahajan 2013, in her journal regulatory changes and their impact on the life insurance business, an analytical study concluded that the premium size collected is significantly lower after the regulatory changes. These changes directly or indirectly impact the procurement organization through the need for an additional service, changes in the core system, or new processes that need to be implemented. The impact of the dynamic regulatory changes is yet to be studied on E-procurement, and it is an opportunity for the researcher to examine the impact. Government policy will be the regulatory change impact identified as an intervening/moderating variable. The intervening variable will affect the relationship between the independent and dependent variables based on a study already conducted (David Chesire Barngetuny, 2015; Geoffrey Rotich et al., 2015).

The IRDA Act 1999 provided some guidance on the assets and expenses of insurance companies. It was clarified here that insurance companies maintain a fund called The Insurance Regulatory and Development Authority of India Fund (Khera and Divya,2020). All government grants and payments and the payments received by the authority shall be deposited. This fund should be used exclusively by members, officials, and others with the authority staff and bear the other costs of its discharge for this Act (Insurance and Regulatory Authority of India, 2007). Previously, the IRDA Act limited the fees or commissions paid to insurance agents in any form in the life insurance business by type of insurance, duration, and year of insurance in 2014. This clause was deleted; instead, it was found that when giving instructions on the remuneration of intermediaries, factors such as the nature and term of office of the policy, particularly the interests of the representatives and other intermediaries concerned, shall be taken into account. Thus, the premiums are combined with the insurance premium collected on insurance products. In addition, it has been found that in the case of individual premium products, fees or commissions intended to procure all individual policies for all distribution channels except direct marketing may not exceed 2% of the individual premium. Instructions for administrative expenses have also been included in the 2015 IRDA Act. Here, certain administrative expenses are based on factors such as the insurance company's size, age, and business segment. For example, private insurance companies with high initial-stage installation costs are exempted from these costs for five years from the start of the business to comply with the said rules (CUTS, 2016). Companies were habitual for sales expenses without a cap and restriction on acquisition cost, suddenly had to switch to evaluating the company's size, age, and business segment and restrict marketing cost to less than 2%. It brought the procurement unit to the forefront, and companies started various initiatives to offset the Cost due to new regulations. Procurement and E-procurement were some of the levers to tackle dynamic regulatory changes.

2.3. E- Sourcing

The E-Sourcing has been presented as a purchase request and approval of the purchase request. Both terms refer to the purchasing process from selected vendors via e-mail or intranet using any enterprise resource planning (ERP). In an electronic procurement procedure, teleworkers can also apply efficiently. Remote ordering can be promoted by providing employees with some devices, such as personal digital assistants (PDAs) and other wireless devices, that make it easier for employees to request an order and determine the place of delivery.

According to Mose (2012), the private and public sectors have historically used information technology (IT) systems to streamline, stabilize, and automate their purchasing and other processes. E-Sourcing is not new; Thai (2007) has had many attempts to automate the procurement process for the buyer through electronic procurement systems (EPS), workflow systems, and connections to suppliers via electronic data interchange (EDI). Electronic procurement refers to the electronic integration and management of all procurement activities, including purchasing requests, authorization, order, delivery, and payment between the buyer and the supplier (Lysons,2013).

Lewis (2018) conducted a study on e-sourcing requirements: a practical guide to processing RFX(Request for quote/information) Technology in the "E" atmosphere of the partner. The study found that e-procurement can be used to reduce the time of the method, raise reserves, and pressure modern income. It increased infrastructure results in returns. He mentioned more the implementation of e-sourcing starts from favoring the partner's e-device (e-closeout, e-following, e-supply, e-RFX) to decorating the strengths of the partner's shape, which involves adjustment, managing, and directing staff and various stakeholders anywhere. Once the correct concept of the territorial unit of such problems is, procurement becomes the cheapest, fastest and clean and affects performance afterward.

Jacob Gorm Larsen (2021) and Vaidya and Callender (2016) also studied significant variables influencing winning e-procurement practices in the open area. They decided that the successful implementation of E-procurement would have the necessary impact on the infrastructure. In addition, McManus (2016) Concentrate, a regional unit for e-procurement tools, is necessary in implementing mega-infrastructure because they tend to control the progress of different document styles, for example, machining the method of creating the documents or submitting the documents electronically to the journalists.

2.4. E- Tendering

Electronic tendering is an electronic procurement system with a broader scope than e-business. E-business implements digital technology via the Internet (or extranet) (Piderit et al., 2011). E-procurement can improve the efficiency of business processes and supply chain transparency (Ochara, 2011). Ribarsky (2013) also defines electronic tendering as the electronic integration and management of all supply chain functions, including purchase requisitions, authorizations, delivery ordering, and payment, between the buyer and the supplier. An electronic tendering system will likely reduce operating costs, enabling a more comprehensive range of products by reducing manual order processing and administrative costs. Electronic tendering is an electronic system used to automate all functions in the supply chain by enabling the scanning, storage, and retrieval of invoices and other documents, as well as management approvals; routing of authorization requests, According to Connolly and Olson (2010), e-procurement is one of the biggest drivers of change. While e-business technologies have great potential to influence an organization's productivity, willingness to accept is influenced by several factors such as reducing transaction costs, improving customer service quality, introducing a defensive response to a competitor, customer requirement for suppliers to link their systems as a business condition, Thong (2011). the external environment of companies. Supply chain complication refers to the number of companies interacting with a particular company. In addition, it considers their proximity, the number of suppliers, and the complexity of the events. The critical mass of users reflects the number and importance of supply chain partners using ICT (Information and Communication Technology) applications (Markus, 2013). The level of cooperation is another important factor. Konsynski & McFarlan, 2011).

Pavithra et al. (2018) analyzed the effectiveness and challenges of the E- Tendering marketing system. The significant findings were that the E-Tendering system could increase competition and transparency in agricultural markets and reduce trade costs for buyers and sellers without negatively affecting trade relations and revenues. Farmers benefit from E-Tendering, and there is a need to create awareness of the benefits of e-trading among farmers and build their capacity in online banking and grading of produce at the farm level. E-Tendering is successful in larger markets but not in smaller ones. It is because of several issues related to the capacity of the market committee and fear among traders that, with automation, they would lose their business to large traders

2.5. E- Negotiation and Reverse E-Auction

E-negotiation is 'the process of conducting negotiations between business partners using electronic means' Jacob Gorm Larsen (2021). The interest in e-negotiation is motivated by its potential to provide business partners with more efficient processes, enabling them to draft better contracts in less time. Most of today's e-marketplaces support some form of E-negotiation. Thus, E-negotiation implementation makes significant savings in purchasing goods and services through the Internet (Scot & Morrison 2007:332). Therefore, e-procurement, if appropriately maintained, will allow

the company to establish and maintain competitive advantages and reduce staff time and paperwork (Tai 2011:5397).

E-reverse auction is the most popular auction utilized in B2B transactions. An electronic reverse auction, commonly referred to as eRA, has given a facelift to e-business (Gaggero, 2012; Standaert et al., 2015). In a typical eRA, the buyer puts forth his request online for a commodity. The sellers participate in a competitive bidding process by quoting the prices they are willing to accept for the ones offered for sale (Smeltzer and Carr, 2003, 2002). Thus, the buyer is a 'price maker' rather than a 'price taker.' Such an arrangement also ensures expeditious procurement due to the brevity of time involved in negotiations.

The concept of the reverse auction was introduced by Free Markets, a company acquired by Ariba in 2004 (Giampietro and Emiliani, 2007). It was a landmark development in the history of e-business as it was a movement from a conventional procurement process to an avant-garde procurement process. However, eRAs are yet to realize their full potential (Shil et al., 2013; Shil and Mouhoub, 2014). During the implementation phase, specific issues have emerged, such as the lack of standardization in the auction process across companies and regions. Therefore, eRA as an area of discussion cannot be treated in isolation (Shil and Mouhoub, 2014; Muylle and Standaert, 2016). It depends on various aspects like organizational structure, managerial decisions, format, and assumptions for a specific requirement (Muylle and Standaert, 2016; Hawkins and Gravier, 2014; Shil et al., 2013; Ray et al., 2013). The difference also lies in supply characteristics, ranging from supplier relationships, contractual power, business impact, supply/ market complexity, leverage opportunities, and other constraints (Davide et al., 2012). Studying the eRA(E- Reverse action) process is indispensable for successful implementation.

Research has indicated that negotiation systems should show sufficient concern for users' needs and expectations (Bichler et al., 2003; Kersten and Lai, 2007). Empirical studies indicate that elements of a negotiating behavior, such as initial bid price and concessions, are closely related to the negotiating parties' preferences (Vetschera 2007). Kersten and Lai (2007) point out that the principal's (i.e., human's) characteristics or preferences must be considered by an organization to be perceived as valuable. Research has shown that software agents may achieve higher utilities and better agreement rates than human negotiators (Vahidov et al., 2014). Furthermore, users perceive the system with agent support to be more beneficial than without (Vahidov et al., 2013).

2.6. E-Invoicing

The European Commission defines the electronic invoice as an electronic transfer of invoicing information (billing and payment) between business partners (supplier and buyer). It is essential to an efficient financial supply chain and links enterprises' internal processes to the payment systems". E-invoicing has been recognized as an important development all over the world. E-invoicing is not a totally new concept. Sending invoices in electronic format has been implemented very well in many countries. The need is to develop the process further to increase the volumes of electronic invoices out of total invoices (Penttinen, Hallikainen, and Salomäki 2009). The benefit of E-invoicing is that it eliminates many steps of paper invoicing.

E-Invoicing involves electronically receiving invoices from suppliers, processing the same, and finally making electronic payments to suppliers via a Bank Automated Clearing System (BACs) Rasugu, D. (2021). E-invoicing has the potential to improve buyer-supplier relationships significantly. Since both parties can screen/ monitor the processing of invoices at the click of a button, it makes it effortless to monitor what stage in the approval process an invoice has reached at any given time (Akibate, 2015; Orina, 2013; Moon, 2005). Besides, an electronic invoice is cheaper to create and administer than its paper predecessor, mainly because it is automated. Compared to paper invoices, e-invoices can be processed with ease. They reach the customer faster and are stored centrally at a meager cost (Hsao & Teo, 2005). Doherty et al. (2013) revealed a positive relationship between e-invoicing and procurement performance. They explained that e-invoicing facilitates faster retrieval of money from customers by reducing the time an invoice or payment is in the post; enhances reduced printing and postage costs; enables quicker and cheaper processing as the information in electronic invoices can be fed directly into a company's payment and accounting systems and lower storage costs. It leads to efficiency and effectiveness

in the procurement process leading to enhanced performance.

An electronic payment system and E-invoicing enable the business to deliver, receive and process electronic invoice submissions for accounts payable and accounts receivable departments. Although most accounts payable departments can process electronic payments, studies reveal that two-thirds of invoices still arrive from vendors on paper. However, firms that go paperless by implementing an electronic payment system realize enormous process efficiencies and cost savings benefits (Akibate, 2015; Kamotho, 2014; Moon, 2005; Hsiao & Teo, 2005). Firstly, processing cost reduction: a feature-rich electronic payment system lowers associate process time by automatically initiating and processing payments. Secondly, minimize overdue payments: a best-in-class electronic payment system accelerates credit and collections by giving customers, collections groups, and internal customer service departments greater visibility into payment status. Thirdly, simplify dispute management: with an electronic payment system, companies benefit from automated disbursement, improved data accuracy, receipt, and payment processing to streamline vendor dispute management (Akibate, 2015; Gunawardhana et al., 2012; Kakwezi & Chinyere, 2007). Fourthly, increased compliance: an electronic payment system makes tracking and monitoring data easier to ensure adherence to complicated compliance regulations and all business rules. Fifthly, enhanced security: an electronic payment system is highly secure, safeguarding cardholder data and preventing payment fraud better than paper-based payments (Kamotho, 2014). Improved workflow efficiencies: increased automation is a crucial feature of a robust and seamless electronic payment system, enabling less reliance on time-consuming and costly manual business processes. Finally, greater visibility into the financial supply chain: with access to reports and comprehensive corporate financial history, an electronic payment system gives management and other authorized users easy access to snapshots and detailed reports to improve decision-making and process efficiency. E-payment significantly contributes to procurement performance (Kamotho, 2014; Dohert et al., 2013; McConnell, 2009; Moon, 2005).

2.7. E- Informing

E-informing is the gathering and distributing of purchasing information from and to internal and external parties using Internet technology (Rotich, 2011). Most organizational spending uses internet technology to buy goods and services from several known or unknown suppliers during the procurement process. The adaptation of web-based electronic procurement has been considered a 'revolution' because of its potential to reduce the total cost of acquisition. The e-procurement revolution envisaged enhancing the status and influence of the purchasing function within organizations (Saleemi, 2000).

In his study, Gichuhi, R. W Editon Cons (2021), and J Stonebraker (2006) argue that E-informing is a form of Enterprise Resource Planning (ERP) not directly related to a stage in the purchasing process, such as a contract or order. E-Informing is a process for collecting and sharing purchasing information from internal and external parties' Internet technology. Li et al. (2005) mentioned that information sharing suggests how critical and dedicated information is transferred to the supply chain partner, which is more efficient and has higher supply chain performance. Sharing information shares information with partners and provides adequate, timely, and accurate information. In other words, data sharing should include the concept of data quality. The data quality includes, among other things, accuracy, timeliness, adequacy, and credibility of the information exchanged.

Information sharing includes both formal and informal information sharing with partners, and Data must ensure quality with accuracy, timeliness, adequacy, credibility, and criticality of remarkable supply chain performance (Croom, 2003). Ensuring the quality of shared information has become a critical issue of effective supply chain management (Cagiano et al., 2003). Support for this Internet or the Internet tool can facilitate data sharing and collaborate more with its partners. E- informing is a kind of Internet tool in his article. Eng (2004) also said that the e-Marketplace provides a shared Internet-based infrastructure that allows participating organizations to communicate efficiently. Data sharing concerns the flow of information, the timeliness of access to information, and openness and transparency. It affects performance. For example, an e-marketplace offers a mechanism by which companies can manage, coordinate and save on transaction costs as it improves

information flows and helps reduce uncertainty (Eng, 2004). The use of information technology makes it possible to expand much larger information distribution, and in terms of the ability to provide access to large supplier lists, product ranges and the services available to employees have been reported to offer a much greater range of flexibility (Evans & Wruster,2001).

2.8. E- Design

Dr. Danish Ahmed Siddiqui and Muhammad Faheem, 2020 analyzed four prime practices of e-procurement that are known as electronic design, electronic sourcing, electronic negotiation, and electronic evaluation. Data was collected from 239 respondents doing jobs related to supply chain management using the adopted Likert scale Questionnaire (Chang, Tsai, & Hsu, 2013). The Data was analyzed using Structural Equation Modeling and Confirmatory Factor analysis. The results suggested that electronic design and evaluation positively and significantly impacted supply chain performance. Hence, the findings, electronic design has more effect on supply chain performance. The administration must focus more on electronic design.

Furthermore, the study advocates that integration among supply chain members is equally important as focusing on joint learning practice because it leads to augmenting supply chain performance. In addition, the study advocates that electronic procurement is at the side of the input of the supply chain system. Therefore, it is more valuable for the industry to develop an innovative and effective process that satisfies all the needs of the organizational supply chain.

According to Davila et al., using E-procurement technologies and E-design helped companies save 42 percent of their purchasing transaction costs (A. Davila, 2003). The reduction is rooted in less paperwork, resulting in fewer mistakes and a more efficient purchasing process. Moreover, simplifying the purchasing process also has an interesting impact on the purchasing cycle time. Faster cycle time provides increased flexibility and more up-to-date information when placing a purchasing order. E-procurement users also report a reduction in the number of suppliers, lower organizational complexity, better prices, and a headcount reduction in the purchasing process (A. Davila, 2003). The following issues are considered as main benefits of E-procurement (A. Gunasekaram, 2009; Bendoly and T. Schoenherr, 2005; M.J. Moon, 2005):

Decreasing transactional costs

a) Expedited ordering
b) Wider ranges of buyers
c) Efficient procurement processes
d) Better control over procurement spending
e) Reduced duplication in paperwork and tasks
f) Reengineered procurement workflows.

2.9. Conceptual Framework

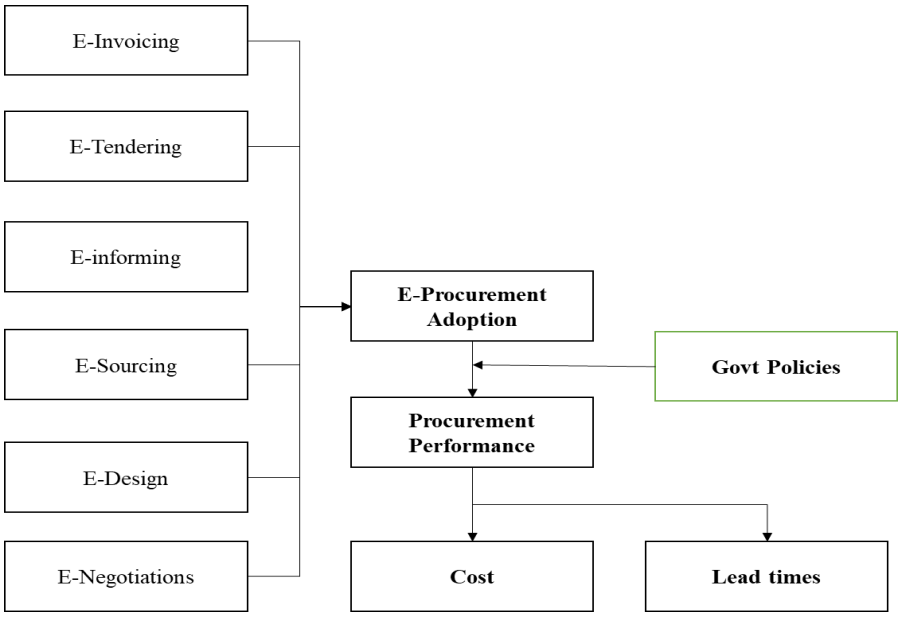

Exhibit 2 -Research Framework

A conceptual framework explains graphically or narrative the main things to be included in the study regarding critical factors, concepts, or variables and their relationship (Mathieson, 2001). The study focused on independent variables: E-sourcing, E-Tendering, E-Negotiations, E-invoicing, E-Informing, E- Design and how they relate to the dependent variable, which is E-procurement Adoption and procurement performance (Lead time and Cost) in Life insurance India. The moderating variable is Government policies (IRDAI).

The framework is derived from various literature and journals. The most suitable and relevant literature list is shortlisted, and information is extracted for the subject matter expert deliberation and identifying the correct variables for Life insurance procurement. Life insurance industry key procurement professionals, i.e., category experts, procurement heads, and finance professionals, were identified with the aid of the life insurance council, and the opinion of relevant drivers for procurement was sought for the final framework. Also, the literature provides several e-procurement processes that form a unique procurement system comprising high and low operational activities. This particular system is well-known for articulating and identifying the areas where an organization can enhance organizational and Procurement performance (Kim & Shunk, 2004). However, the models which are the most representative in the available literature are based on six phases of business transactions and processes, which have been calculated as, Supplier sourcing, Tendering, information collection, negotiation process, settlement of the agreement, and after Invoicing (Kim & Shunk, 2004, Gebauer & Scharl, 1999; Kraut, Steinfield, Chan, Butler, & Hoag, 1998, Elisha Kendo,2016,). This research has just extended the proposition of (Schmid 1993) and presented these six phases of electronic business transactions for procurement.

2.10. Theory

Oliveira & Martins (2010) explained that combining more than one theoretical model is essential to understanding the e-procurement adoption phenomenon. As such, the researcher in this study is convinced that a mixture of various theories will adequately cover the concept of e-procurement practices on procurement performance in Life insurance in India

2.10.1. The unified theory of acceptance and use of Technology

In 2003, Venkatesh and his research group reviewed the following eight theories of technology acceptance: The theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), the Technology Acceptance Model (TAM), the combined form of TAM and TPB (C-TAM-TPB), Model of PC Utilization (MPCU), Innovation Diffusion Theory (IDT), Motivational Model (MM), and the Social Cognitive Theory (SCT). As a result, they proposed a new theory named the unified theory of acceptance and use of Technology (UTAUT) to be a suitable form benefiting from the unique characteristics of all other older mentioned theories and models. For more understanding of the development stages that led to the development of the UTAUT, the evolution stages of all theories mentioned above have been summarized in the form of a chronological graph, as shown in Exhibit 3.

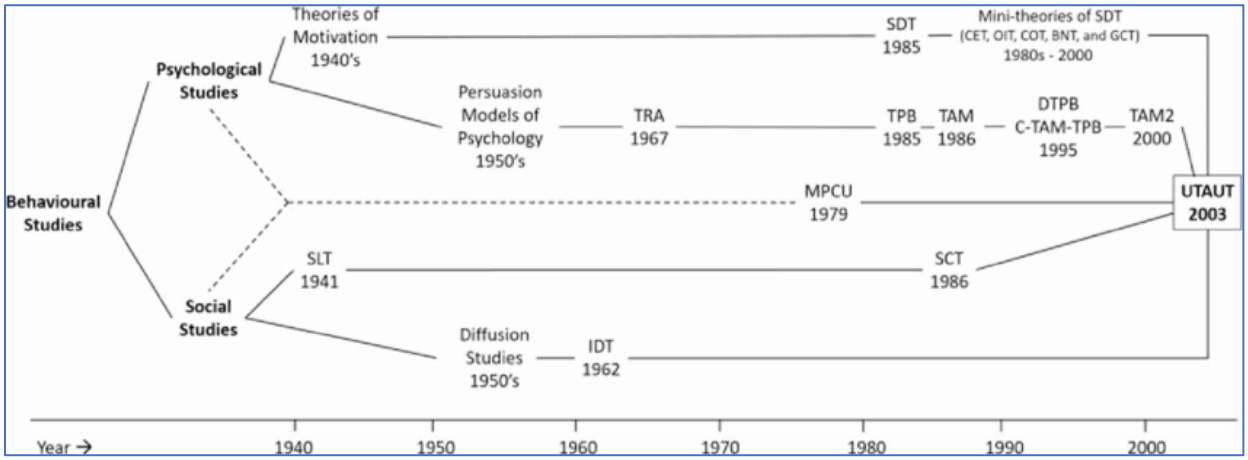

Exhibit 3- Evolution Stages of UTAUT

This graph chronologically illustrates the evolution and development stages in four primary paths according to the behavioral field and the timeline of this evolution. These theories have resulted from human behavioral studies since the beginning of the 20th century, which were later branched into two streams, psychological and sociological studies (Momani and Jamous, 2017).

Technology acceptance theories and models have discussed individuals' behaviors and their acceptance and ability to adopt new technologies according to some constructs and variables. These theories have been focused on the psychological and behavioral viewpoints of the users of Technology. However, each theory has its limitations and frameworks, which are considered the main reason for their development operations. For example, TPB, DTPB, and TAM theories are developed from the TRA. However, some problems still exist within these theories. According to Qingfei, Shaobo, and Gang (2008), there are two major issues related to acceptance theories; first, each theory uses different terminologies in its constructs, but they are essentially within the same concepts. Second, according to the complexity of behavior research and the researchers' limitation, no single theory covers all behavioral factors. In other words, each theory has its limitations and does not complement the other.

The researchers examined the influence of the moderating variables of the eight theories on the decision of information technology usage. They summarized them in four moderators: gender, age, experience, and voluntariness of use. They noted that the theories' predictive capability had increased after including the moderating variable for most of the theories. For instance, age got very little attention in the previous research literature on older theories and models. At the same time, Venkatesh et al. (2003) showed that age moderates all of the relations in the UTAUT model between the key-constructs and behavioral intention and usage behavior.

Furthermore, gender, which takes attention in sociology and social psychology studies, influences the relations between critical constructs and behavioral intention in the UTAUT model. After that, the researchers also tested 32 constructs stated in the eight tested theories. They examined the common characteristics of all of them and found that the seven constructs may determine the behavioral intention or usage behavior. Thus, they hypothesized four as the most significant and direct effect on behavioral intention, usage behavior, and user acceptance. These constructs were: Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions. The rest of the seven constructs were hypothesized to not directly affect behavioral intention or usage behavior (Fuksa, 2013). These constructs were: the attitude toward behavior, computer self-efficacy, and anxiety (Hauser, Paul, and Bradley, 2012). The researchers mentioned that the attitude towards behavior is defined as users' emotional reaction to using Technology or the information system. They noted that the attitude factor indirectly affects all four determinants of the UTAUT. In addition, self-efficacy and anxiety are already included in the concept of effort expectancy. UTAUT is the closest relation to the researcher's topic

The predictor's performance expectancy, effort expectancy, and social influence drive the behavioral intention. The E-procurement determinants of E-sourcing, E- Tendering, E-Negotiations, E-Invoicing, E-Design, and E-informing drive E-Procurement. The behavioral intention drives the user behavior in UTAUT, and in the current study, E-procurement drives procurement lead time and Cost. Gender, age, and experience are the moderating variables in UTAUT, while government policies are moderating variables in the current study. The present study could be examined for the qualitative basis of the above relation.

2.10.2. Technology Acceptance Model (TAM)

Davis (1986; 1989; 1993) developed and validated the technology acceptance model (TAM) to explain the mechanisms influencing and shaping users' acceptance of new information technology. According to TAM, two specific variables are fundamental determinants of users' attitudes toward using information technology and actual use of the system: perceived usefulness and ease of use relative to new information system design features. Usefulness is the degree to which someone believes that using a system will enhance his performance, and ease of use is the degree to which the user believes that the benefits of the system's use are outweighed by the efforts for using it (Davis, 1993). E-procurement adoption entails changes that include reengineering the existing system within the organization that will ultimately impact

how tasks are conducted (Kaliannan et al., 2008). Primary procurement operations carried out within a state corporation that can be significantly changed due to e-procurement adoption include the ordering process, which involves tasks like order preparation, order approval, and order transmission to the supplier. As such, employees' and suppliers' perception of the usefulness and ease of use of the e-procurement system is critical in realizing the full benefits of e-procurement adoption, especially in implementing E-sourcing. Thus, this model was employed in answering all research questions pertaining to the effect of E-sourcing on procurement performance in life insurance in India

2.11. Research Hypotheses

a) H1: Adoption of e-procurement significantly reduce the cost and lead times of procurement and impacts procurement performance positively?
b) H2: Is there a mediating effect of the Adoption of e-procurement towards the cost and lead times of procurement and impacts procurement performance positively?
c) H3: Government Policies (IRDAI) impact significantly positively or negatively on procurement performance of Cost and lead times at life insurance companies in India?
d) H4: E-Invoicing is one of the determinants of E-procurement adoption and impacts E-Procurement adoption at life insurance companies in India?
e) H5: E-design is one of the determinants of E-procurement adoption and impacts E-Procurement adoption at life insurance companies in India?
f) H6: E-Informing is one of the determinants of E-procurement adoption and impacts E-Procurement adoption at life insurance companies in India?
g) H7: E-Tendering is one of the determinants of E-procurement adoption and impacts E-Procurement adoption at life insurance companies in India?
h) H8: E-Sourcing is one of the determinants of E-procurement adoption and impacts E-Procurement adoption at life insurance companies in India?
i) H9: E-Negotiations is one of the determinants of E-procurement adoption and impacts E-Procurement adoption at life insurance companies in India?

2.12. Chapter summary

The chapter summarizes the definition of procurement, E-procurement, the impact of government policies on procurement performance, E-procurement, and its determinants E- sourcing, E-Tendering. E- Negotiations, E-Informing, E- Design, and E-Invoicing. The chapter also summarizes various literature supporting the rationale behind selecting the determinants. The conceptual framework is derived from literature review, subject matter expertise, and with aid or theories Institutional theory, transactional cost theory, technological acceptance model, and diffusion innovation theory. The researcher has also framed the hypothesis required for the following research stage.

3. RESEARCH METHODOLOGY

This chapter presents the research method used in the study. Kothari (2019) explained that research methods are the steps a researcher takes to study a research problem logically. The section looks at the study's research design, data sources, data planning, data measurement, data collection & scaling technique, variables, location, target group, sampling techniques, sample size, research tool, competence, reliability, data collection methods, and data analysis. An extensive literature review was carried out to create the framework of the study. Even though it was difficult to find literature on Life insurance Indian context because there has not been much research done on this area, the research done in other countries was explored. They were used as the foundation to create the questionnaire. The following key themes were extracted during the literature review. Accordingly, the types of E-Procurement systems that are used generally were identified, and this includes factors such as

a) E-Sourcing
b) E- Tendering
c) E-Invoicing
d) E-Negotiations
e) E- Design
f) E- Informing
g) Government Policies
h) E-Procurement Adoption

Post the factor selection and questionnaire design. Two surveys were conducted with the life insurance India procurement professionals to register the opinions of the contracting authorities on the new electronic paradigm. The first survey was a pilot of 30 responses, and the following survey was based on the sampling plan. A survey is a non-experimental, descriptive research method extensively used to assess attitudes and characteristics concerning a wide range of subjects. In this paper, two surveys are conducted, and one is presented. The first was conducted in July 2021 with very selective subject matter experts to understand and correct the errors. The preliminary questionnaire, and the cover message, were first piloted by the researchers' work colleagues involved in e-procurement research. It was further tested in a limited and controlled set of questions to verify its effectiveness in collecting information and eliminating misunderstandings or ambiguities. The second survey was conducted in August 2021, about one month after, to applicable procurement professionals of life insurance India. This paper provides valuable insight into Life insurance India's experience with E-procurement.

3.1. Research Design

Research design is a blueprint indicating the techniques and processes a researcher(s) to gather and analyze data for their research. In general, the research designs used by researchers may be exploratory, descriptive, and causal. According to Reis, H.T & Judd, C.M. (2000), Research Design can be defined as the systematic planning of research to achieve a given set of objectives. Malhotra, N & Dash, S. (2011) said that the research design of any research study is a combination of Descriptive as well as Exploratory Research. Descriptive research is a type of conclusive research that has as its primary objective the description of something- usually market characteristics or functions.

Polit, D.F. et al. (2001) defined a research design as "the overall plan for collecting and analyzing data including specifications for enhancing the internal and external validity of the study." Research design focuses on how the research is to be conducted. It includes all main fractions of the research study, such as the samples or groups, measures, treatments, or programs, and works together to address the research questions. Exploratory analysis is significant for getting a good hold of the phenomena of interest and advancing knowledge through good theory-building and hypothesis testing. Exploratory research is meaningful when the researcher does not understand enough to proceed with the research project. Exploratory research is characterized by flexibility and versatility because formal research protocols and procedures are not employed.

Malhotra, Y. (2005) states that Descriptive Research usually is more proper and ordered than Exploratory Research. A descriptive research design describes the characteristics of the relevant group. This research is based on the newness of the Technology involved. The search of the literature concerning India has provided limited results. So, the research will contain a descriptive design to study E-Procurement Practices in Life insurance companies in India.

3.2. Research Sampling

Population refers to the larger group from which a sample is taken (Orodho, 2003). The study focuses on a procurement population working across Life insurance in India. A target population refers to a specific group of individuals with the researcher interested in generalizing conclusions (Catillo, 2009). The study focuses on 130 employees, the target population working in the procurement department as managers and procurement department heads at life insurance India. The choice of this group of respondents was appropriate in this study since they are directly involved in implementing the E-procurement policy in the corporation. A list containing the staff at various levels was sourced from the procurement forum (An informal group formed for best practices of Life Insurance). Simple random sampling is used in the research from the family of Probability sampling.

One of the best things about simple random sampling is the ease of assembling the sample. It is also considered a fair way of selecting a sample from a given population since every member is given equal opportunities to be selected (Gagan Preet Sharma, 2017). Another critical feature of simple random sampling is its representativeness of the population. Theoretically, the only thing that can compromise its representativeness is luck. The random variation is called sampling error if the sample is not representative of the population. An unbiased random selection and a representative sample are important in concluding the results of a study.

The sample size was determined based on Robert v. Krejcie & Daryle w. Morgan,1970 estimation as illustrated in Table 1 Table 1: Rationale of Sample estimation

Category	Target Audience description	Count	Justification
A	Total Insurers	24	Data Source IRDA (Regulator)
B	Total Procurement Heads	24	Key users and decision-makers
C	Managers and executives	106	Upstream e-procurement users
D	Total Population	130	Total Population Maximum
E	Minimum Required Sample	96	Robert v. Krejcie & Daryle w. Morgan,1970

3.3. Sources of Data

The researcher categorized Sources of data as primary sources or secondary sources. According to Malhotra N. (2009), primary data originated by a researcher to address the problem. In the present study, the researcher collected primary data by administering a structured questionnaire and getting it filled out by the respondents. Post the questionnaire design, the researcher posted a questionnaire link to the specific social media group containing the life insurance procurement managers and executives for the response.

The researcher collected Secondary Data for purposes other than the Problem at hand. Secondary sources in the study included information from the Life insurance forum India, journals, Regulator IRDA, books, thesis/ dissertations, website references, and Governmental / Institutional Reports or Publications and Directories.

3.4. Data Planning

According to Malhotra, N. (2009), Survey Method collects primary data/ information by asking questions from the respondents. This research study will collect data from 24 Life insurance companies through Survey Method. Respondents would be asked various questions on E-Procurement. Data would be managed with the help of a structured questionnaire. In this method, a formal questionnaire having questions prearranged in order will be used.

3.5. Data Measurement

The online survey contained questions that were grouped into ten sections. The first section contained twelve questions designed to collect information to develop a profile of the respondents and their organizations. The second to tenth section consisted of seven or eight questions per section designed to elicit information to test the research hypotheses and the validity of the proposed E-Procurement model.

E-Procurement Adoption	Source
E-Procurement Adoption Benefits enhanced the level of efficiency in job delivery	Mohammed Suleiman, 2015 Eziyi Offia Ibem, 2016
E-Procurement Adoption Benefits by elimination of geographic barriers in procurement	
E-Procurement Adoption Reduces errors associated with paper-based methods	
Does E-Procurement Adoptions Ease the coordination of procurement activities?	
Does E-Procurement Adoption Reduce time spent on the procurement process?	
Does E-Procurement Adoption increase Fairness and Transparency?	

Cost and Leadtime	Source
Does the implementation of e-procurement reduce the Cost of operations in your firm?	Sheila n. Makala, 2013
Does the implementation of e-procurement reduce communication costs in your firm?	
Does the implementation of e-procurement reduce overhead costs in your firm?	
Does the implementation of e-procurement reduce the Cost of delivery in your firm?	
Does the implementation of e-procurement improve order processing in your firm?	
Does implementing e-procurement reduce the lead time of materials & services in your firm?	
Does the implementation of e-procurement has reduced delays in suppliers delivering goods?	
Does implementing e-procurement platforms help integrate different departments or branches, reducing your firm's requisition time and product delivery times?	

Govt Policies (IRDA Regulator)	Source
Govt Policies (IRDA /Statutory) on procurement have reduced the speed with which goods and services are procured?	David Chesire Barngetuny, 2015
Govt Policies (IRDA /Statutory) on procurement have improved the quality of projects undertaken by your firm?	
Govt Policies (IRDA /Statutory) on procurement have improved the capacity of staff involved in procurement processes?	
Govt Policies (IRDA /Statutory) on procurement have fostered ethical standards in the procurement processes at your firm?	
Govt Policies (IRDA /Statutory) on procurement have provided room for procurement dispute resolution at your firm?	
Govt Policies (IRDA /Statutory) on procurement have increased transparency among suppliers in your firm?	
Govt Policies (IRDA /Statutory) on procurement have affected positively or negatively procurement processes at life insurance India?	

E- Sourcing	Source
Does your firm use online requests for quotations to reduce the lead time?	Carolyn Masheti, 2016 (4.8)
Does your firm use e-sourcing to reduce costs and improve efficiency in the procurement process?	
Does your firm use e-sourcing to reduce per-policy costs?	
Does your firm use internet-based supplier evaluation?	
Does your firm select the most appropriate supplier through an information System?	Dr. Danish Ahmed Siddiqui, 2019 (4.6)
Does your firm releases procurement requirements via an information system?	
Does your firm notify the supplier on the arrival of an authorized procurement contract via an information system?	

E- Tendering	Source
Does E-tendering reduce paperwork during the procurement process by encouraging keeping software data or soft copies in your firm?	Carolyn Masheti, 2016 (4.7)
Does E-tendering improve suppliers' choice by stating in advance the specification of tender performance in your firm?	
Does E-tendering have dramatically reduced costs associated with the tendering process in your firm?	
Does E tendering make the process of procurement transparent in your firm?	
E- tendering allows staff more time to focus on the issues relating to procurement strategy?	
E- tendering minimizes the materials procurement time at your firm?	
Does your firm experience lesser bidding time due to e-tendering?	

E-Invoicing	Source
Does E-Invoicing reduce the Cost per invoice in your firm?	C. Marinagi, P. Trivellas, Panagiotis Reklitis, and C. Skourlas,2015
Does E-Invoicing accelerate the process of invoicing in your firm?	
Does E-Invoicing improve the relationship with suppliers in your firm?	
Does E-Invoicing improve the quality of invoices received in your firm?	
Does E-Invoicing improve the auditing/compliances in your firm?	
Does E-Invoicing reduce invoicing errors from suppliers in your firm?	
Does E-Invoicing (New premium collection and Renewal of policy) better cash flow and working capital management in your firm?	
Does E-Invoicing (New premium collection and Renewal of policy) bring less uncertainty on cash flow in your firm?	
Does E-Invoicing bring operational efficiency to your firm?	
Does E-Invoicing reduce overall purchasing costs in your firm?	

E-Negotiations	Source
Does your firm negotiate with the supplier through the Internet?	Dr. Danish Ahmed Siddiqui, 2019
Does your firm negotiate the general procedures of purchasing with the supplier through the Internet?	
The advantage of the new e-negotiation method compared to in-person meetings is transparency in your firm?	

The advantages of the new e-negotiation method compared to in-person meetings are time and money-saving in your firm?	(4.6)
Compared to in-person meetings, the advantages of the New e-negotiation method make the proposal decision easier in your firm?	
The disadvantage of e- negotiations is you cannot add further proposals to your firm?	
The disadvantage of e- negotiations is that there is no way to comment on the Proposal in your firm?	

E-informing	Source
Does E-informing is practiced for all communication to prospective and existing suppliers in your firm?	Uddin (2015) and Brian (2018)
Does information gathering is done through appropriate methods utilizing E-information in your firm?	
Does E-information Electronically gather information on previous supplier clientele in your firm?	
Does your procurement team Electronically distribute information about pricing and any other information online in your firm?	
Does your procurement team Electronically gather information for suppliers' experiences in your firm?	
Does E- informing improve the performance of the Procurement function in your firm?	

E-Design	Source
Does your firm use an electronic system to gather information at the procurement request stage?	Pityfaith Nyokabi, 2021 and Charles Omondi Oliech and Dr. Patrick Mwangangi, 2019
Each department within the organization shares the same network platform for purchasing requests in your firm?	
Each department within the company requests purchases from one specific department unit in your firm?	
Does your company design the format of marketing demands using the information system in your firm?	
Does in your firm is electronically linked with vendors on E-sourcing to a very high degree?	
Does your firm IT strategy be coordinated at your firm system level on E-contract management to a very high degree?	
Does your firm's centralized procurement link to the system level on E-payment at your firm to a very high degree?	

3.6. Data collection technique and scaling technique

The questionnaire is a prearranged method for data collection consisting of a sequence of written or verbal questions. According to Malhotra, N. (2009), Questions in the questionnaire are the key to the survey research, so they must be developed with caution as it is vital to the survey. Hague, P. N. (2004) said that the main advantage of close-ended questions was that they were pre-coded. Hence they are suited for self-completion questionnaires as it saves time to write the answer. Therefore, the close-ended questions were used in this study to collect the response by asking them to choose a given option. In this study, the questionnaire begins with getting the basic details of the Companies. The structured questionnaire focused on the present status of E-Procurement which includes E-sourcing, E- Tendering, E-Negotiations, E-Invoicing, E-Design and E-informing, Procurement effectiveness (cost & lead time), and impact of IRDA policies. The researcher considered the extent to which Information Technology is used to carry out procurement functions, which led to E-Procurement implementation.

The questionnaire of this study is framed based on the available literature. It is based on the research tabulated in Table 2. The identified construct was deliberated with the procurement professionals for its relevance to the life insurance Industry. The construct was planned and validated through a pilot study of 30 samples based on the outcome and corrections. The researcher distributed it to the Target population.

Table 2: Determinants of E-Procurement and selection of determinants for the research

Construct	Source	Life Insurance relevance	Type of Variable	Final Selection
Cost	V. Karthik And S. Kumar,2013	Yes	DV	✓
Leadtime	Sheilah N. Makali, 2013	Yes	DV	✓
Customer Satisfaction	Sheilah N. Makali, 2013	No	DV	✗
Quality Supplies	Dorcas Wanjiru Muhia, 2015	No	DV	✗
E- Informing	Nancy Chepkurui Chepkwony, 2017	Yes	IV	✓
E- Sourcing	Sheilah N. Makali, 2013	Yes	IV	✓
E- tendering_	Elly Ochieng Osir,2016	Yes	IV	✓
E-Negotiations	Assem O. Ali Mmar & Abdul Manaf Bohari, 2012	Yes	IV	✓

E-design	Charles Omondi Oliech And Dr. Patrick Mwangangi, 2019	Yes	IV	✓
E-invoicing	C. Marinagi, 2015	Yes	IV	✓
E-Procurement Adoption	Mohammed Suleiman, 2015 Eziyi Offia Ibem, 2016	Yes	Med V	✓
Govt Policy	David Chesire Barngetuny, 2015	Yes (IRDA)	MV	✓
Size of the Organization	Oojung Oha , Hongsuk Yanga & Soo Wook Kim, 2013	No	MV	✗
Information Quality	Muthoka Cynthia Ndunge, 2015	No	MV	✗
Top Management Support	Pratik Kumar Singh, 2020	No	MV	✗
Procurement Procedures	A. F. Smart, 2010	No	MV	✗
Resource Allocation	Elly Ochieng Osir,2016	No	MV	✗

The Data was collected through close-ended questions using by Itemized scale. Itemized scale is another essential technique under the non-comparative scales. It emphasizes choosing a particular category among the various given categories by the respondents. The researchers briefly define each class to facilitate the such selection. The researcher selects the Likert scale out of the three itemized scales. The researcher has also used one dichotomous scale of two-point to six-point Likert Scales for demographic questions and a five-point Likert scale for the detailed study on E-procurement determinants, effectiveness, and impact of Government policies. According to Prayag G. (2007), five-point scales help reduce frustration among the respondents and will also improve the rate and quality of data collected from respondents. Malhotra, N. (2009) added that the five-point Likert Scale was effortless to construct and administer. Moreover, respondents readily understand how to use the scale, which is more suitable for mail and personal interviews. The researchers have utilized the specific social media group 'Life insurance procurement professional group

3.7. Data collection procedures

The data collection procedure gathers information from all available sources using research tools (Cooper, 2008).

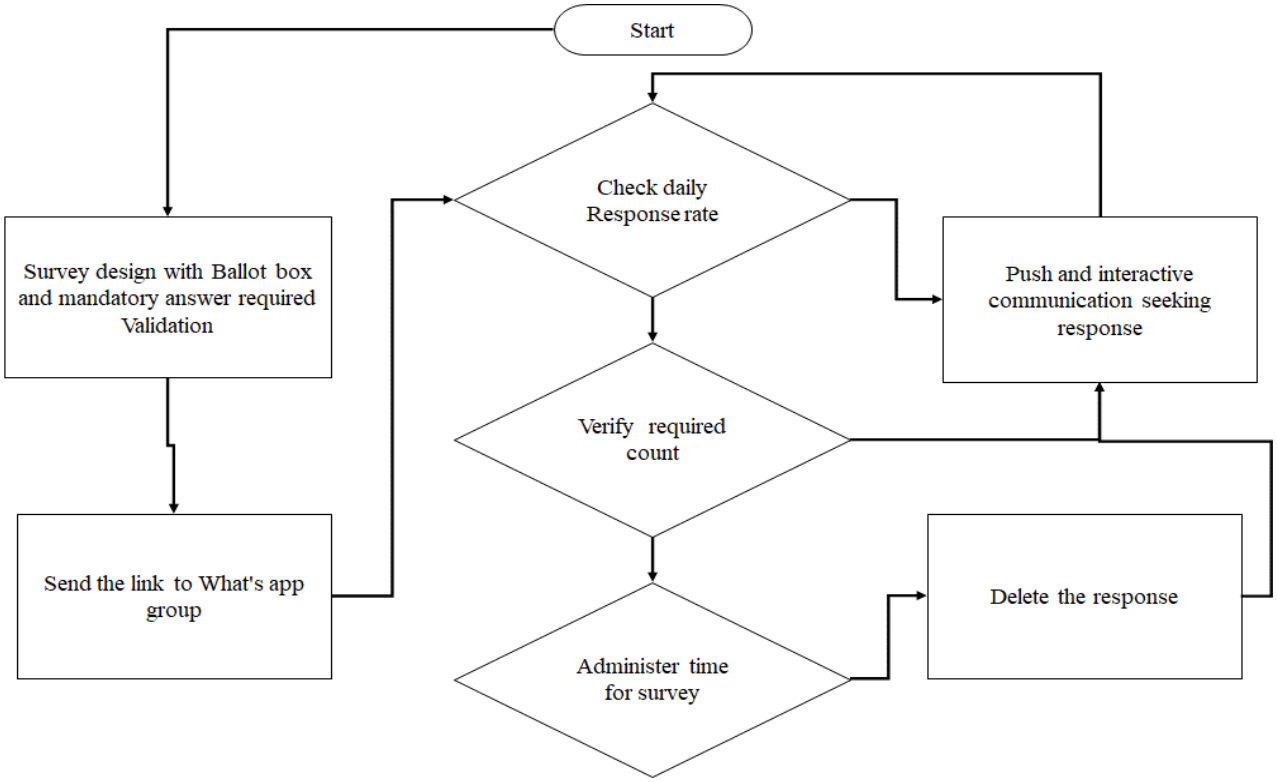

Exhibit 4-Data collection Process for response rate and achieving the sample size

The researcher designed and distributed the research questionnaires in MS forms to different respondents on their respective Mobile phones. The survey was sent in a controlled environment of only the Life insurance what's app group. The what's app group has 137 procurement professionals and actively added /deleted based on professionals' exit and joining by the procurement forum; hence the list is adequately accurate for the researcher's study. System validations were built to avoid missing answers and duplicate responses. The researcher described the Instructions for the questions and topics at the start of the survey, and the survey's design was mobile savoy. During the month-long data collection activity, the researcher continuously monitored the responses and initiated various alters of all three types of communication push, pull, and interactive. The researcher has shared survey outcomes with only the respondents as a factor for motivation to bring traction. The researcher received a total of 109 responses for further processing data analysis.

3.8. Data analysis by SMART PLS

The study examined completed questionnaires and document analysis of the completed recorded sheets. The quantitative data were analyzed by Minitab v19, SMART PLS 3.3.3, and presented as percentages, means, standard deviations, and frequencies. Data were displayed using bar graphs, charts, pie charts, and prose. It included calculating responses and calculating percentages variations in response and description and interpretation of data according to the study objectives and assumptions using SMART PLS

Selection Rationale for SMART PLS

The researcher selected SMART PLS for the data analysis basis the following rationale

a. The small population restricts the sample size by design due to only 24 insurers and 130 procurement professionals
b. The analysis is concerned with testing a theoretical framework from a prediction perspective
c. The complex structural model includes many constructs, indicators, and model relationships.
d. The research objective is to better understand increasing complexity by exploring theoretical extensions of established theories (exploratory research for theory development);
e. Since the path model includes one or more formatively measured constructs

Partial least squares structural equation modeling (PLS-SEM) allows analyzing complex inter-relationships between observed and latent variables. PLS-SEM offers much flexibility in modeling and data requirements compared to other methods. SmartPLS is one of the prominent software applications for Partial Least Squares Structural Equation Modeling (PLS-SEM). It was developed by Ringle, Wende & Will (2005). The software has gained popularity since its launch in 2005 because it is freely available to academics and researchers and has a friendly user interface and advanced reporting features. Although many journal articles have been published on PLS modeling, the number of instructional materials available for this software is limited.

PLS is a soft modeling approach to SEM with no assumptions about data distribution (Vinzi et al., 2010). Thus, PLS-SEM becomes an excellent alternative to CB-SEM (Covariance based) when the following situations are encountered (Bacon, 1999; Hwang et al., 2010; Wong, 2010):

a) The sample size is small.
b) Applications have a little available theory.
c) Predictive accuracy is paramount.
d) The correct model specification cannot be ensured.

It is important to note that PLS-SEM is not appropriate for all kinds of statistical analysis. Marketers also need to be aware of some weaknesses of PLS-SEM, including:

a) High-valued structural path coefficients are needed if the sample size is small.
b) The problem of multicollinearity is not handled well.
c) Since arrows are always single-headed, they cannot model undirected correlation.
d) A potential lack of complete consistency in scores on latent variables may result in biased component estimation, loadings, and path coefficients.
e) It may create significant mean square errors in the estimation of path coefficient loading.

Despite these limitations, PLS is helpful for structural equation modeling in applied research projects, especially when there are limited participants and the

data distribution is skewed, e.g., surveying female senior executives or multinational CEOs (Wong, 2011). PLS-SEM has been deployed in many fields, such as behavioral sciences (e.g., Bass et al., 2003), marketing (e.g., Henseler et al., 2009), organization (e.g., Sosik et al., 2009), management information system (e.g., Chin et al., 2003), and business strategy (e.g., Hulland, 1999).

3.9. Chapter Summary

The research design used by researchers is exploratory, descriptive, and causal. The study focuses on 130 employees, the target population working in the procurement department as managers and procurement department heads at life insurance India. The sample size was determined based on Robert v. Krejcie & Daryle w. Morgan,1970 estimation.

In the present study, the researcher collected primary data by administering a structured questionnaire and getting it filled out by the respondents. The researcher collected Secondary Data for purposes other than the Problem at hand. This research study collected data from 24 Life insurance companies through Survey Method. Respondents would be asked various questions on E-Procurement. Data would be managed with the help of a structured questionnaire. This method used a formal questionnaire with questions prearranged in order. The online survey contained questions that were grouped into ten sections.

The Data was collected through close-ended questions using by Itemized scale. The researchers briefly defined each class to facilitate the such selection. The researcher selects the Likert scale out of the three itemized scales. The researcher has also used one dichotomous scale of two-point to six-point Likert Scales for demographic questions & Profile questions and a five-point Likert scale for the detailed study on E-procurement determinants, effectiveness, and impact of Government policies for the study

The researcher designed and distributed the research questionnaires in MS forms to different respondents on their respective Mobile phones. The survey was sent in a controlled environment of only the Life insurance. System validations were built to avoid missing answers and duplicate responses.

4. Data Analysis

Data analysis systematically applies statistical and logical techniques to describe, illustrate, summarize, and evaluate data. According to Shamoon and Resnik (2003), different analytical approaches "provide a way to draw inductive conclusions from data and to distinguish signal (the phenomenon of interest) from noise (statistical variations)."

Although data analysis from a quantitative study may involve statistical procedures, in many cases, the analysis becomes a continuous iterative process in which Data is collected and analyzed almost simultaneously. Researchers tend to analyze patterns of observations throughout the data collection phase (Savenye & Robinson, 2004). The analysis format is determined by the specific quantitative approach (Data collection, Data coding, Descriptive Analysis, Structure Equation modeling) and the data format (Continuous and discrete).

An accurate and appropriate analysis of research results is essential to ensuring data integrity. False statistical analyses distort scientific findings, mislead random readers (Shepard, 2002), and negatively affect public perceptions of research. Integrity issues are equally important in the analysis of non-statistical data

4.1. Data coding, Data entry, and Data screening

In research, coding is "how you define what the data you are analyzing is about" (Gibbs, 2007). coding is a process of identifying a passage in the text or other data items (photograph, image), searching and identifying concepts, and finding relations between them.

Data coding was done based on the below criteria with a clear and concise coding plan with a rationale of alphabetical order incremental score, e.g., Female was coded as one and Male two, and Age group lowest age group was coded as one and highest as four (Refer Annexure 1 for complete coding details on demographics)

Table 3 – Coding of Demographic Questions

Demographic Questions in ascending alphabet order	Code Value
A	1
B	2

C	3
D	4
E	5

The researcher coded the survey response after demographic variables based on the Likert scale in descending order, as described in the table below. Higher the agreement by the respondent higher the value

Table 4 – Coding of Variables

Response	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Coding	5	4	3	2	1

Data entry is done using Minitab 18, where the responses are automatically converted based on the criteria set. The process is error-free, and the researcher checked subsequent validations to ascertain no data entry errors

The researcher conducted data screening by verifying each count using the tally option of the Minitab 18 compared to the coded count and any difference using spreadsheet formulas. Thus, data coding errors and omissions were eliminated due to the process involved in the coding.

Table 5– Data screening of responses and reconciliation to ensure error-free coding

Q1	Count	Coded Count	Value	Difference
Agree	36	36	4	0
Disagree	3	3	2	0
Neutral	10	10	3	0
Strongly agree	59	59	5	0
Strongly Disagree	1	1	1	0
N=	109	109		0

4.2. Frequency and Descriptive analysis

Descriptive analysis (Sloman, Kimberly N, 2010) involves the direct observation of target behavior in natural (or naturalistic) contexts to gather information on contiguous and potentially relevant environmental events without experimental manipulation. That is, descriptive analyses identify events correlated with the occurrence of some target response. Descriptive analysis is commonly used as a part of a comprehensive functional assessment of problem behavior prior to conducting an experimental functional analysis

Table 6: Profile of Respondents and Procurement dimensions

Information	Categories	Frequency	Percentage
Gender	Female	15	13.8%
	Male	93	85.3%
	Do not prefer to Say	1	0.9%
Age	20-29	7	6.42%
	30-39	49	44.95%
	40-49	40	36.70%
	Above 50	13	11.93%
Education	Bachelor's Degree	53	48.62%
	Master’s degree	55	50.46%
	Higher than a Master’s degree	1	0.92%
Experience	Below 5 Years	6	5.50%
	Between 5 to 10 Years	25	22.94%

	Between 10 to 15 Years	33	30.28%
	Between 15 to 20 Years	30	27.52%
	Above 20 Years	15	13.76%
Information	Categories	Frequency	Percentage
Operating Offices	Only India	93	85.32%
	India and abroad	16	14.68%
Number of Offices	100 or fewer Branches	28	25.69%
	Between 101 to 250	31	28.44%
	Between 251 to 400	18	16.51%
	Between 401 to 800	15	13.76%
	Above 800	17	15.60%
Number of Employees	500 or fewer employees	10	9.17%
	Between 500 and 3000	29	26.61%
	Between 3000 and 6000	19	17.43%
	Between 6000 to 9000	17	15.60%
	Above 9000	34	31.19%
Procurement Decision	Centralized Procurement	96	88.00%
	Decentralized Procurement	4	4.00%
	Hybrid (Mix of both)	9	8.00%
Procurement Reporting	Finance/CFO	104	95.00%
	HR/CHRO	4	4.00%
	Others	1	1.00%
Procurement Scope of work	Complete life cycle, including supplier management and payments	13	12.00%
	Only till commercial finalization	77	71.00%
	Only till contract vetting/Purchase order	9	8.00%
	Only till the first contract sign-off and the transition/Purchase order	8	7.00%
	The scope is yet to be defined/Others	2	2.00%
Procurement Scope by Value and delegation of Authority	Above INR 200,000	3	3.00%
	Above INR 50,000	48	44.00%
	Above INR 100,000	27	25.00%
	Above INR 500,000	7	6.00%
	All Values attended by Procurement	24	22.00%
Annual Revenue	Below 1Bn Rupees	35	32%
	Between 1Bn to 2.5 bn rupees	22	20%
	Between 2.5 to 6 Bn rupees	23	21%
	Between 6Bn to 9bn rupees	11	10%
	Above nine bn Rupees	18	17%

The demographic and profile response from the respondents showed the following outcome

a. The demographic and profile response from the respondents showed the following outcome.
b. The result showed that more than 85% of the respondents were male by gender; therefore, procurement professionals at life insurance India are majority male by gender. The age group 30 years to 50 years, more than 80% of the respondents.
c. Education is equally split with degree holders (48.6%) and master's (50.4%) holders.
d. Experience is not fragmented into a particular category. It is spread from 5 to more than 20 years; however, more than 85% of the respondents had less than 20 years of experience.

e. The operating offices or branch offices were present in Pan India and a few abroad locations. The abroad locations were representative offices. (A "Representative/ Liaison Office" would mean a place of business to act as a channel of communication between the principal place of business or Head Office by whatever name called and entities in India, but which does not undertake any commercial/ trading/ industrial activity, directly or indirectly, and maintains itself out of inward remittances received from abroad through normal banking channel. Source IRDA) More than 85% of the respondents expressed that they operated only in India and the rest in India and abroad with representative offices.

f. More than 70% of respondents expressed they operated a branch network of fewer than 400 branches in Pan India. The number of employees working in these offices spread into various groups. 31.19% of respondents that they had more than 9000 employees, followed by 26.61% of respondents with 500 to 3000 employees

g. Organization establishment in Life insurance response was 93% of respondents from private life insurance, and 7% were from the public sector. Compared to the actual Industry in India (Table 2), the private sector is 96%, and the public sector is 4%.

h. The results show that 32% (35 respondents) have Revenue of fewer than 1 Bn rupees and 21% (23 Respondents) between 2.5Bn to 6 Bn rupees. The segmentation is primarily spread in various ranges of annual revenues.

i. The results show that 88% (96 respondents) have organized procurement by centralized model and follow centralized procurement practice. 8% (9 respondents) have responded with a hybrid (Mix of both Centralized and decentralized) type of procurement. 4% (4 respondents) have responded as decentralized procurement. It is evident that Life insurance in India largely follows centralized procurement. It is for further analysis and research on how centralized procurement enables E-procurement.

j. The results show that 95% (104 respondents) report as procurement to CFO function. It is evident from the data that there is an opportunity for further research on whether procurement is still operated as a control function instead of or service or enabler function at life insurance India. It is an opportunity for qualitative study.

k. The results show 71% (77 respondents) have the procurement scope of work fenced till commercial sign-off. The subsequent activity of agreement and order creation is delegated to the respective function to utilize procurement resources strategically and effectively. The control of whether the order was released as per agreed commercials needs further research and analysis. It is an opportunity for a qualitative study or appropriate study

l. The results show that 44% (48 respondents) have expressed delegation of authority to users up to INR 50,000($675 conversion rate of 74). 25% (27 respondents) have expressed delegation of authority to users up to INR 100,000 ($1350 conversion rate of 74). The respective function can procure with basis controls once a year for low-value items to reduce procurement volume.

m. The researcher started with a quantitative research design; however, the basis of the pilot study, demographic profile responses, to derive procurement effectiveness only by quantitative research may not cover all dimensions.

4.2.1. Mean evaluation of Variables

The main variables in this research were measured using a five-Point Likert Scale, classified as follows:

Table 7: Classification of Values

Scale	Value
Strongly Agree	5
Agree	4
Neutral	3
Disagree	2
Strongly Disagree	1

4.2.2. Interpretation rationale of mean scores

Table 8: Arbitrary Level of Variables, Mean Score Range, and Interpretation

Level of Agreement	Range of Mean Score	Interpretation of E-Procurement determinant, Effectiveness of Cost & Leadtime, and E-Procurement Adoption
Strongly Disagree	1.00 -1.80	Strongly Disagree
Disagree	1.81-2.60	Disagree
Neutral	2.61 -3.40	Neutral
Agree	3.41-4.20	Agree
Strongly Agree	4.21-5.00	Strongly Agree

(Source: Zikmund, W.G. (2003: 36). Business Research Method, 2nd edition)

4.2.3. E-Procurement Adoption related Factor – E Sourcing

Table 9: Mean score, standard deviation (SD), and the interpretation of E- Sourcing

Descriptive Statistics				
Items	N	Mean	Stddev	Interpretation
Does your firm use online requests for quotations to reduce the lead time?	109	4.3670	0.8351	Strongly Agree
Your firm uses e-sourcing to reduce costs and improve efficiency in the procurement process?	109	4.1376	0.8104	Agree
Does your firm use e-sourcing to reduce per-policy costs/ Operating expenses?	109	3.9633	0.8490	Agree
Does your firm select the most appropriate supplier through an information System?	109	3.9541	0.7980	Agree
Does your firm releases procurement requirements via an information system?	109	3.9174	0.8292	Agree
Does your firm notify the supplier on the arrival of an authorized procurement contract via an information system?	109	3.9174	0.8403	Agree
Overall		4.0428	0.8270	Agree

It showed that the respondents are practicing online requests for quotations and indicating a reduced Leadtime. The mean of 4.37 and the highest in E-sourcing, followed by respondents expressing the objective of e-sourcing to reduce cost and improve efficiency at the mean of 4.13. Overall, respondents agree with a mean of 4.04 on the effective use of E-sourcing in E-Procurement.

4.2.4. E-Procurement Adoption related Factor – E Tendering

Table 10: Mean score, standard deviation (SD), and the interpretation of E- Tendering

Descriptive Statistics				
Items	N	Mean	Stdev	Interpretation
Does E-tendering reduce paperwork during the procurement process by encouraging keeping software data or soft copies in your firm?	109	4.1284	0.9240	Agree
Does E-tendering improve suppliers' choice by stating in advance the specification of tender performance in your firm?	109	4.0275	0.8103	Agree
Does E-tendering have dramatically reduced costs associated with the tendering process in your firm?	109	3.8532	0.8031	Agree
Does E-tendering reduce the time associated with the tendering process in your firm?	109	4.0275	0.8656	Agree
Does E tendering make the process of procurement transparent in your firm?	109	4.0183	0.8387	Agree
Does your firm experience lesser bidding time due to e-tendering?	109	4.0183	0.8163	Agree
E- tendering allows staff more time to focus on the issues relating to procurement strategy?	109	4.1651	0.9079	Agree
Overall		4.0340	0.8522	Agree

It showed that the respondents have adapted to E-tendering for reduced paperwork and data storage in soft copies, with a mean of 4.12. Overall, respondents agree on the effectiveness of E-tendering in improving costs associated with the tendering process, better supplier choice, reduced lead-time, transparency in procurement, and better utilization of the staff in procurement strategy with a mean of 4.03.

4.2.5. E-Procurement Adoption related Factor – E Negotiations

Table 11: Mean score, standard deviation (SD), and the interpretation of E- Negotiations

Descriptive Statistics				
Items	N	Mean	Stdev	Interpretation
Does your firm negotiate with the supplier through the internet?	109	4.1743	0.9314	Agree
The advantage of the new E-negotiation method compared to in-person meetings is transparency in your firm?	109	4.0734	0.7417	Agree
The advantages of the new E-negotiation method compared to in-person meetings are time and money-saving in your firm?	109	3.9174	0.818	Agree
Compared to in-person meetings, the advantages of the new e-negotiation method make the research paper decision easier in your firm?	109	3.8716	0.8062	Agree
The disadvantage of e-negotiations is you cannot limit the number of steps in your firm?	109	3.9266	0.8356	Agree
The disadvantage of e-negotiations is you cannot add further research papers to your firm?	109	4.0275	0.7872	Agree
The disadvantage of e-negotiations is that there is no way to comment on the research paper in your firm?	109	3.9083	0.9481	Agree
Overall		3.9855	0.8383	Agree

It showed that the respondents practice e-negotiations as a critical method to derive transparency and cost savings. The mean was 4.17, followed by transparency due to e-negotiations and other efficacy dimensions agreed upon during the response. The respondents have agreed on both advantages and disadvantages of E- negotiations. Many respondents have expressed in the free text that they negotiate after E-Auction. It needs further analysis and an opportunity for qualitative research The standard deviation of all items was lower than 1, indicating a high level of agreement among respondents.

4.2.6. E-Procurement Adoption related Factor – E-Invoicing

Table 12: Mean score, standard deviation (SD), and the interpretation of E-Invoicing

Descriptive Statistics				
Items	N	Mean	Stdev	Interpretation
Does E-Invoicing reduce the cost per invoice in your firm?	109	4.3119	0.7540	Strongly Agree
Does E-Invoicing accelerate the process of invoicing in your firm?	109	4.0826	0.7217	Agree
Does E-Invoicing improve the relationship with suppliers in your firm?	109	3.9817	0.6802	Agree
Does E-Invoicing improve the quality of invoices received in your firm?	109	4.0092	0.7876	Agree
Does E-Invoicing improve the auditing/compliances in your firm?	109	4.0826	0.8180	Agree
Does E-Invoicing reduce invoicing errors from suppliers in your firm?	109	3.9450	0.8696	Agree
Does E-Invoicing bring operational efficiency to your firm?	109	4.0917	0.8226	Agree
Does E-Invoicing reduce overall purchasing costs in your firm?	109	4.1468	0.8479	Agree
Overall		4.0814	0.7877	Agree

It showed that the respondents have expressed practicing E-Invoicing to reduce the cost associated with the invoice. Respondents strongly agree with the mean of 4.31, followed by audit compliance, supplier relationship, improved invoice quality, reduced invoice errors, accelerating the process, and bringing operational efficiencies. Respondents overall agree that E-Invoicing is a crucial determinant of E-procurement, with an overall mean of 4.08. The standard deviation of all items was lower than 1, indicating a high level of agreement among respondents.

4.2.7. E-Procurement Adoption related Factor – E Informing

Table 13: Mean score, standard deviation (SD), and the interpretation of E- Informing

Descriptive Statistics				
Items	N	Mean	Stdev	Interpretation
Does E-informing is practiced for all communication to prospective and existing suppliers in your firm?	109	4.1468	0.9509	Agree

Does information gathering is done through appropriate methods utilizing E-information in your firm?	109	3.9358	0.8308	Agree
Does E-information Electronically gather information on previous supplier clientele in your firm?	109	3.844	0.9146	Agree
Does your procurement team Electronically distribute information about pricing and any other information online in your firm?	109	3.8716	0.7947	Agree
Does your procurement team Electronically gather information for suppliers' experiences in your firm?	109	3.8807	0.8358	Agree
Does E- informing improve the performance of the Procurement function in your firm?	109	3.9908	0.8221	Agree
Overall		3.9449	0.8581	Agree

It showed that the respondents expressed practicing E-Informing in all communication to suppliers with a mean score of 4.14, followed by performance improvement of procurement, information gathering, distribution, and clientele information. Respondents overall agree that E-informing is a crucial determinant of E-procurement, with an overall mean of 3.94.

4.2.8. E-Procurement Adoption related Factors – E-design

Table 14: Mean score, standard deviation (SD), and the interpretation of E- design

Descriptive Statistics				
Items	N	Mean	StDev	Interpretation
Does your firm use an electronic system to gather information at the procurement request stage?	109	4.2936	0.8639	Strongly Agree
Each department within the organization shares the same network platform for purchasing requests in your firm?	109	3.7706	0.8885	Agree
Each department within the company requests purchases from one specific department unit in your firm?	109	3.9817	0.8712	Agree
Does your company design the format of marketing demands using the information system in your firm?	109	3.8349	0.8977	Agree
Does in your firm is electronically linked with vendors on E-sourcing to a very high degree?	109	3.9174	0.8620	Agree
Does your firm IT strategy be coordinated at your firm system level on E-contract management to a very high degree?	109	3.844	0.9146	Agree
Does your firm's centralized procurement link to the system level on E-payment at your firm to a very high degree?	109	3.8899	1.0123	Deleted due to variation
Overall		3.9331	0.9014	Agree

It showed that the respondents expressed practicing E-Informing in all communication to suppliers with a mean score of 4.14, followed by performance improvement of procurement, information gathering, distribution, and clientele information. Respondents overall agree that E-informing is a crucial determinant of E-procurement, with an overall mean of 3.94. The researcher removed the response with more than 1 Standard deviation

4.2.9. Mediating Variable E-Procurement Adoption

Table 15: Mean score, standard deviation (SD), and the interpretation of E-procurement Adoption

Descriptive Statistics				
Items	N	Mean	Stdev	Interpretation
E-Procurement Adoption Benefits enhanced the level of efficiency in job delivery	109	4.548	0.7539	Strongly Agree
E-Procurement Adoption Benefits by elimination of geographic barriers in procurement	109	4.675	0.7263	Strongly Agree
E-Procurement Adoption Reduces errors associated with paper-based methods	109	4.1376	0.6657	Agree
Does E-Procurement Adoptions Ease the coordination of procurement activities?	109	4.256	0.5517	Strongly Agree
Does E-Procurement Adoption Reduce time spent on the procurement process?	109	4.1835	0.6837	Agree

Does E-Procurement Adoption increase Fairness and Transparency?	109	4.3018	0.5796	Strongly agree
Does E-Procurement Adoption reduce the cost of procurement operations due to increased efficiency?	109	4.1376	0.6075	Agree
Overall		4.2133	0.6447	Strongly Agree

It showed that the respondents expressed. E-Procurement adoption eliminates geographical boundaries with a mean score of 4.675, followed by E-Procurement adoption as beneficial in job delivery with a mean score of 4.548, increases transparency with a mean score of 4.3018, eases coordination with a mean score of 4.256, reduces time spent on procurement process with a mean score 4.18, reduces errors with paper-based processing with a mean score of 4.13 and reduces cost due to increased efficiency.

4.2.10. Dependent Variable Cost and Leadtime

Table 16: Mean score, standard deviation (SD), and the interpretation of Cost and Leadtime

Descriptive Statistics				
Items	N	Mean	Stdev	Interpretation
Does the implementation of e-procurement reduce the cost of operations in your firm?	109	4.3486	0.8539	Strongly Agree
Does implementation of e-procurement reduce communication costs in your firm	109	4.2752	0.8263	Strongly Agree
Does the implementation of e-procurement reduce overhead costs in your firm?	109	4.1376	0.8657	Agree
Does the implementation of e-procurement reduce the cost of delivery in your firm?	109	4.1560	0.8517	Agree
Does the implementation of e-procurement improve order processing in your firm?	109	4.1835	0.7837	Agree
Does implementation of e-procurement reduce the lead time of materials & services in your firm?	109	4.2018	0.8796	Agree
Does the implementation of e-procurement has reduced delays in suppliers delivering goods?	109	4.1376	0.9075	Agree
Does implementing e-procurement platforms help integrate different departments or branches, reducing your firm's requisition time and product delivery times?	109	4.2661	0.7893	Strongly Agree
Overall		4.2133	0.8447	Strongly Agree

Respondents strongly agreed on the impact of E-procurement on lead time and cost, with an overall mean of 4.2. The respondents agreed on all the dimensions of various cost elements, from operations, communication, overhead, and delivery costs. They also agree on lead time dimensions of order processing, lead time of materials & services, requisition time, and delivery time. The mean scores were the highest when compared to the responses.

4.2.11. Moderating variable Govt Policies (IRDA Regulator)

Table 17: Mean score, standard deviation (SD), and the interpretation of Govt Policies (IRDA Regulator)

Descriptive Statistics				
Items	N	Mean	Stdev	Interpretation
Govt Policies (IRDA /Statutory) on procurement have reduced the speed with which goods and services are procured?	109	2.9083	0.7998	Neutral
Govt Policies (IRDA /Statutory) on procurement have improved the quality of projects undertaken by your firm?	109	2.9266	0.8893	Neutral
Govt Policies (IRDA /Statutory) on procurement have improved the capacity of staff involved in procurement processes?	109	2.7523	0.8406	Neutral
Govt Policies (IRDA /Statutory) on procurement have fostered ethical standards in the procurement processes at your firm?	109	2.7706	0.8674	Neutral
Govt Policies (IRDA /Statutory) on procurement have provided room for procurement dispute resolution at your firm?	109	2.6422	0.8978	Neutral

Govt Policies (IRDA /Statutory) on procurement have increased the level of transparency among suppliers in your firm?	109	2.6422	0.9479	Neutral
Govt Policies (IRDA /Statutory) on procurement have affected positively or negatively procurement processes at life insurance India?	109	3.101	1.105	Deleted due to high variation
Overall		2.8204	0.9068	Neutral

Respondents were neutral on the IRDA (regulator) policies impacting procurement, with an overall mean of 2.82. It could be interpreted as very close to disagreeing since 77% of the responses were responded to less than 3 of the questions circulated. Overall, the respondents scored least on the IRDA policies impacting procurement. The researcher removed the response with more than one standard deviation

4.2.12. Factor Analysis

Table 18: Factor Analysis of variable for values > 0.7

E-Sourcing		E-Tendering		E-Negotiations		E-Informing		E-Design		E-Invoicing	
a_1	0.923	b_1	0.632	c_1	0.910	D-1	0.898	E_1	0.881	F_1	0.798
a_2	0.936	b_2	0.884	c_2	0.640	D-2	0.862	E_2	0.899	F_2	0.645
a_3	0.868	b_3	0.871	c_3	0.914	D-3	0.913	E_3	0.891	F_3	0.693
a_4	0.665	b_4	0.841	c_4	0.925	D-4	0.868	E_4	0.866	F_4	0.857
a_5	0.594	b_5	0.867	c_5	0.621	D-5	0.892	E_5	0.625	F_5	0.901
a_6	0.680	b_6	0.896	c_6	0.635	D-6	0.907	E_6	0.825	F_6	0.849
		b_7	0.857	c_7	0.693					F_7	0.683
										F_8	0.619

Table 18(Cont): Factor Analysis of the variable for values > 0.7

E-Procurement Adoption		Time & Cost		Govt Policy	
mod_1	0.944	DV1	0.901	mv_1	0.644
mod_2	0.908	DV2	0.920	mv_2	0.944
mod_3	0.908	DV3	0.896	mv_3	0.921
mod_4	0.929	DV4	0.923	mv_4	0.930
mod_5	0.939	DV5	0.901	mv_5	0.963
mod_6	0.883	DV6	0.877	mv_6	0.943
		DV7	0.882		
		DV8	0.918		

Three questions in E-Sourcing, one in E-Tendering, four in E-Negotiations, four in E-Invoicing, one in E-design, and one in Govt policy did not meet the criteria of 0.7. The Loading results indicators higher than 0.7 follow the recommendation of Hair et al., 2019. Thus, The Loading results are acceptable. The researcher deleted the questions that did not meet Hair's recommendation before constructing the structural equation model.

4.2.13. Construct Operationalization

Construct	Type of outer model	Type of Variable	Number of indicators	Predefined reliability
E-Informing	Latent variable (Mode A)	IV	6	1.000
E-Sourcing		IV	3	1.000
E-Negotiations		IV	3	1.000
E- Design		IV	4	1.000
E-Invoicing		IV	4	1.000
E- Tendering		IV	6	1.000

E-Procurement Adoption		Mediating Variable	6	1.000
Cost and Lead times		DV	8	1.000
Govt Policies		Moderating Variable	5	1.000

Operationalization essentially means defining observable and measurable components of a given construct or behavior. The researcher has selected five valid E-informing indicators, three in E-sourcing and E-negotiations, 4 in E-design, and 6 in E-invoicing and E-tendering. A path model is reflective if causal arrows go from the latent variable (factor) to the measured indicator variables in the path diagram. A path model is formative if the arrows go from the practical measures to the latent variables. Sometimes reflective models are called "Mode A." The researcher has used" Mode A" due to the nature of the indicator.

4.2.14. Construct Reliability

Variables	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Cost & Leadtime	0.967	0.968	0.972	0.815
E-Design	0.921	0.922	0.941	0.762
E-Informing	0.947	0.948	0.958	0.792
E-Invoicing	0.873	0.874	0.914	0.726
E-Negotiations	0.905	0.910	0.940	0.840
E-Procurement Adoption	0.963	0.964	0.970	0.844
E-Sourcing	0.895	0.903	0.935	0.827
E-Tendering	0.935	0.936	0.949	0.756
Govt Policy	0.964	1.094	0.970	0.867

Composite reliability varies from 0 to 1, with 1 being perfect estimated reliability. In a model adequate for experimental purposes, composite reliabilities should be equal to or greater than .6 (Chin, 1998; Höck & Ringle, 2006: 15); equal to or greater than .70 for an adequate model for confirmatory purposes (Henseler, Ringle, & Sarstedt, 2012: 269); and equal to or greater than .80 is considered suitable for confirmatory research (for ex., Daskalakis & Mantas, 2008: 288). Therefore the constructs comply with the reliability requirement

Cronbach's alpha also addresses whether the indicators for latent variables display convergent validity and reliability. By convention, the exact cutoffs apply: greater or equal to .80 for a good scale, .70 for an acceptable scale, and .60 for a scale for experimental purposes.

AVE (Average variance extracted) may be used as a convergent and divergent validity test. AVE reflects the average communality for each latent factor in a reflective model. In an adequate model, AVE should be greater than .5 (Chin, 1998; Höck & Ringle, 2006: 15) and more significant than the cross-loadings, which means factors should explain at least half the variance of their respective indicators. AVE below .50 means error variance exceeds explained variance. AVE is higher than 0.51, following the recommendation of Hair et al., 2019

4.2.15. Discriminant Validity Heterotrait-Monotrait Ratio of Correlations (HTMT)

Heterotrait-Monotrait ratio (htmt)	Cost & lead time	E-design	E-informing	E-invoicing	E-negotiations	E-procurement adoption	E-sourcing	E-tendering	Govt policy
Cost & lead time									
E-design	0.721								
E-informing	0.690	0.802							
E-invoicing	0.708	0.795	0.816						

E-negotiations	0.585	0.643	0.641	0.806					
E-procurement adoption	0.754	0.833	0.741	0.687	0.535				
E-sourcing	0.176	0.130	0.144	0.132	0.159	0.136			
E-tendering	0.696	0.737	0.696	0.806	0.738	0.621	0.116		
Govt policy	0.822	0.823	0.815	0.818	0.814	0.831	0.815	0.811	

The HTMT results showed that the correlation among predictors is lower than 0.85, following the recommendation of Hair et al., 2019. Thus, HTMT results are acceptable.

4.2.16. Discriminant Validity Fornell-larcker criterion

Fornell-Larcker Criterion	Cost & lead time	E-Design	E-Informing	E-Invoicing	E-Negotiations	E-Procurement Adoption	E-Sourcing	E-Tendering	GOVT POLICY
Cost and lead time	0.703								
E-design	0.777	0.673							
E-informing	0.767	0.767	0.670						
E-invoicing	0.745	0.757	0.758	0.652					
E-negotiations	0.761	0.767	0.767	0.743	0.716				
E-procurement adoption	0.712	0.654	0.665	0.657	0.654	0.717			
E-sourcing	0.768	0.762	0.763	0.743	0.764	0.664	0.707		
E-tendering	0.766	0.774	0.772	0.755	0.772	0.672	0.767	0.668	
Govt policy	-0.075	0.005	-0.017	0.035	-0.042	0.000	-0.062	-0.007	0.731

The Fornell-Larcker Criterion results showed that the correlation among predictors is lower than 0.85, following the recommendation of Hair et al., 2019. Thus, The Fornell-Larcker Criterion results are acceptable.

4.2.17. Structural model

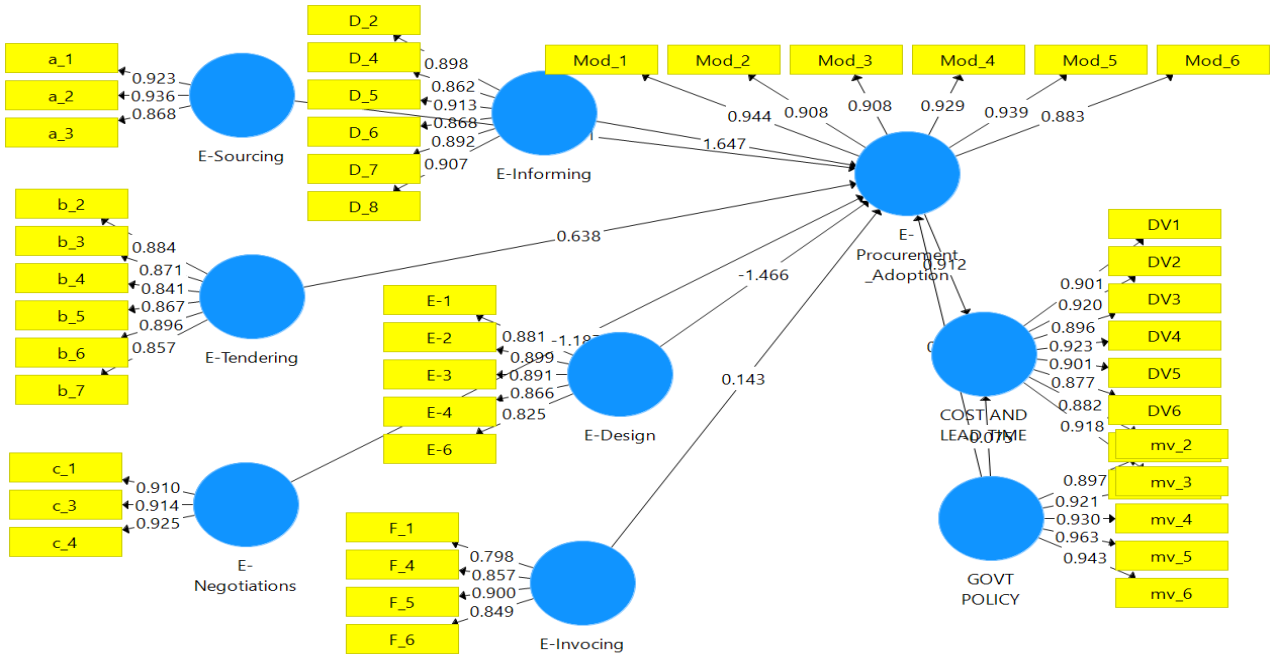

Exhibit 5: PLS-Structural Model of the study.

Construct	R Square	R Square Adjusted
Cost and Time	0.838	0.835
E-Procurement Adoption	0.757	0.753

The coefficient of determination (R2) results in cost and time from E-Procurements related factors about 83.8% percent (R2 = 0.838). The coefficient of determination (R2) results can explain E-Procurement adoption from E-Procurements related factors by about 75.7% percent (R2 = 0.757). The coefficient of determination (R2) to explain the model are higher than 0.75**,** following the recommendation of Hair et al., 2019. Thus, the model is suitable to explain the life insurance sector phenomenon.

4.2.18. Path coefficients

	Cost and Lead time	E-Procurement Adoption
Cost and lead time		
E-design		-1.466
E-informing		1.647
E-invoicing		0.143
E-negotiations		-1.187
E-procurement adoption	0.912	
E-sourcing		1.111
E-tendering		0.638
Govt policy	-0.075	0.055

"Path Coefficients" are the direct effects which, when added to the "Indirect Effects," yield the "Total Effects" The highest effect is from E- informing (Beta =1.647), followed by E-souring (Beta = 1.111), E tendering (Beta =0.217), E-Invoicing (Beta = 0.088), E-informing (Beta =0.041) and the least direct effect is E-negotiations (Beta=0.011) on E-Procurement Adoption. Government policy (Beta= 0.055) is negligible effect on E-Procurement adoption.

4.2.19. Total Effects

Total effects	Cost and lead time	E-Procurement Adoption
Cost and lead time		
E-design	-1.337	-1.466
E-informing	1.502	1.647
E-invoicing	0.130	0.143
E-negotiations	-1.083	-1.187
E-Procurement Adoption	0.912	
E-sourcing	1.014	1.111
E-tendering	0.582	0.638
GOVT POLICY	-0.026	0.055

The total effects predict E-informing from independent variables are the most influential factor (Beta= 1.502), followed by E-Design (Beta= -1.337), E-Negotiations (Beta= -1.083), E-sourcing (Beta=1.014) and E-tendering to Cost and lead times and E-Invoicing is the least predictor (Beta 0.130).

4.2.20. Moderating Analysis and Indirect Effects

Construct	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Govt policy to cost and lead time	-0.075	-0.079	0.056	1.335	0.182
Govt policy for E-procurement adoption	0.055	0.035	0.044	1.243	0.214

Note t-value >1.96

Based on the result, the researcher has concluded that the moderating effect Govt policy is statistically insignificant as T-values < 1.96 and P-Value is > 0.05 (Preacher and Hayes, 2004, 2008).

4.2.21. Mediating Analysis

Construct	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Decision
E-design to e-procurement adoption	-1.466	-1.431	0.416	3.528	0.000	Supported
E-informing to e-procurement adoption	1.647	1.566	0.592	2.784	0.005	Supported
E-negotiations to e-procurement adoption	-1.187	-1.173	0.574	2.069	0.039	Supported
E-procurement adoption to cost and lead time	0.912	0.905	0.043	21.236	0.000	Supported
E-sourcing to e-procurement adoption	1.111	1.078	0.368	3.024	0.003	Supported
E-tendering to e-procurement adoption	0.638	0.727	0.539	1.185	0.236	Not supported
E-invoicing to e-procurement adoption	0.143	0.112	0.236	0.606	0.545	Not supported
Govt policy to cost and lead time	-0.075	-0.079	0.056	1.335	0.182	Not supported
Govt policy for e-procurement adoption	0.055	0.035	0.044	1.243	0.214	Not supported

The bootstrapping analysis has shown that E- Design has an indirect effect, β = -1.466, E-Informing β = 1.647, E-negotiations with β = -1.187, E-Sourcing with β = 1.111 are significant with t-values of >1.96. E-Invoicing and E- Tendering have an indirect effect of β = 0.143 and β = 0.638, which is not statistically significant (Preacher and Hayes, 2004, 2008). Thus, we can conclude that the effects are statistically significant for E- Design E-Informing E-negotiations and E-Sourcing on Procurement adoption and Mediating effect of Procurement adoption on cost and timelines with β = 0.912 and T value > 1.96.

4.2.22. Overall model

SRMR	Original Sample (O)	Sample Mean (M)	95%	99%
Saturated Model	0.040	0.032	0.041	0.051
Estimated Model	0.047	0.036	0.048	0.054

SMART PLS-SEM results showed that the Standardized Root Mean Squared Residual (SRMR) value equal to 0.0536 and less than 0.058 follows Pavlov et al. (2021) recommended. It reflects a low probability of a false-positive phenomenon. Thus, this model is fit and appropriate to explain the model of the Life insurance sector phenomenon.

4.2.23. Hypotheses testing & Results

Hypothesis	Beta	P Value	Result
H1: Adoption of e-procurement significantly reduce the cost and lead times of procurement and impacts procurement performance positively?	0.912	0.000	Supported
H2: Is there a mediating effect of the Adoption of e-procurement towards the cost and lead times of procurement and impacts procurement performance positively?			
H3: Government Policies (IRDAI) impact significantly positively or negatively on procurement performance of Cost and lead times at life insurance companies in India?	0.075	0.182	Not Supported
H4: E-Invoicing is one of the determinants of E-procurement adoption and impacts E-Procurement adoption at life insurance companies in India?	0.143	0.545	Not Supported
H5: E-design is one of the determinants of E-procurement adoption and impacts E-Procurement adoption at life insurance companies in India?	1.049	0.012	Supported

H6: E-Informing is one of the determinants of E-procurement adoption and impacts E-Procurement adoption at life insurance companies in India?	1.447	0.006	Supported
H7: E-Tendering is one of the determinants of E-procurement adoption and impacts E-Procurement adoption at life insurance companies in India?	0.508	0.294	Not Supported
H8: E-Sourcing is one of the determinants of E-procurement adoption and impacts E-Procurement adoption at life insurance companies in India?	0.995	0.003	Supported
H9: E-Negotiations is one of the determinants of E-procurement adoption and impacts E-Procurement adoption at life insurance companies in India?	1.071	0.029	Supported

The hypotheses testing and results were summarized by the researcher as follows

1. Accept Alternate Hypothesis – H1, H2, H5, H6, H8 & H9
2. Accept null Hypothesis – H3, H4, & H7

a) Adoption of e-procurement significantly reduces the cost and lead times with β of 0.912, P-value of Zero, and T-Value >1.96 (Preacher and Hayes, 2004, 2008), thus concluded as supported

b) Mediating effect of Adoption of e-procurement towards the cost and lead times of procurement with β of 0.912, P-value of Zero, and T-Value >1.96 (Preacher and Hayes, 2004, 2008) thus concluded as supported

c) E-Negotiations are one of the determinants of E-procurement adoption and impact E-Procurement adoption with β of 1.071, P-value of <0.05, and T-Value >1.96 (Preacher and Hayes, 2004, 2008), thus concluded as supported

d) E-Sourcing is one of the determinants of E-procurement adoption and impacts E-Procurement adoption with β of 0.995, P-value of <0.05, and T-Value >1.96 (Preacher and Hayes, 2004, 2008), thus concluded as supported

e) E-design is one of the determinants of E-procurement adoption and impacts E-Procurement adoption with β of 1.049, P-value of <0.05, and T-Value >1.96 (Preacher and Hayes, 2004, 2008) thus concluded as supported

f) E-Informing is one of the determinants of E-procurement adoption and impacts E-Procurement adoption with β of 1.447, P-value of <0.05, and T-Value >1.96 (Preacher and Hayes, 2004, 2008), thus concluded as supported

g) E-Invoicing is one of the determinants of E-procurement adoption and impacts E-Procurement adoption with β of 0.413, P-value of >0.05, and T-Value <1.96 (Preacher and Hayes, 2004, 2008), thus concluded as *not* supported

h) E-Tendering is one of the determinants of E-procurement adoption and impacts E-Procurement adoption with β of 0508, P-value >0.05, and T-Value <1.96 (Preacher and Hayes, 2004, 2008), thus concluded as *not* supported

i) Government Policies (IRDAI) impact significantly positively or negatively on procurement performance of Cost and lead times with β of 0.075, P-value >0.05, and T-Value <1.96 (Preacher and Hayes, 2004, 2008) thus concluded as *not* supported

4.3. Chapter Summary

The researcher in this chapter described the data coding, data entry, and data screening methodology and how it is error and omissions-free. It was also imperative to examine the descriptive statistics and infer various customer profiles and industry profiles related to the life insurance industry in India. With an interpretation rationale, the researcher defined mean variable limits to identify Strongly agree and disagree variables and eliminate variables with high variations. Each of the individual variables (Both Independent and Dependent variables) descriptive statistics were analyzed that could navigate the next steps seamlessly. The researcher conducted the factor analysis and checked the reliability and validity by performing reliability and validity tests with appropriate scientific methods. The researcher then constructed the structural equation model and determined the moderating and mediating effect along with statistical analysis to identify variables that support the hypothesis and those that do not. The chapter is concluded with a summary of the hypothesis results with the support of Beta values and P-values

5. Discussion and Conclusion

5.1. Introduction

This research paper's primary focus was on E-procurement and its effectiveness on Leadtime and Cost. The secondary focus was how the determinants of E-procurement, i.e., E- sourcing, E-tendering, E-Negotiation, E-Invoicing, E-Design, and E- Informing

influences E-procurement adoption, and finally, how IRDA (regulator) policies influence/impact the procurement organization and its performance with empirical survey and analysis by SMART PLS. Given that no empirical survey or assessment was conducted earlier in the life insurance industry, this study, other than the current findings, future studies can empirically examine the implementation strategies using case-specific data in different contexts. This chapter presents a summary of the study, discussion, and conclusions drawn from the findings and, finally, recommendations for practice and further research on the problem

5.2. Recap of the Study

A study recap is detailed below to summarize the complete research and aid the next steps of discussion and findings.

The study initially focused on the Economic scenario and Procurement state of the life insurance industry since 2000, the Role of IRDA(Regulator) and the Life insurance India market, its prospects, the combination of private and publicly owned companies, and how the insurance sector is a blessing to the country with its contribution to infrastructure. The Chapter is also engrossed in the adoption of e-procurement and how it can be an enabler in the procurement life cycle and thus negate the challenges of procurement maturity in the Insurance industry. The role of IT in E-Procurement was also reviewed. It also reviewed how E-Procurement practices in life insurance in India can bring that competitive advantage with the appropriate framework and the most practical combination of determinants. This research paper focused on addressing this problem and bringing a specific E-procurement framework and the most practical combination of variables involving E-sourcing, E-Tendering, E-invoicing, E-Design, E-informing, E-negotiations, and Government policies in Life insurance India. The focus was the Life insurance industry, not a private or public life insurer. General insurance, health insurance, and other insurance sectors are out of the scope of the study.

The study continued with the definition of Procurement, E-procurement, the impact of government policies on procurement performance, E-procurement, and its determinants E- sourcing, E-Tendering. E- Negotiations, E-Informing, E- Design, and E-Invoicing. The study also summarizes various literature supporting the rationale behind selecting the determinants. The conceptual framework is derived from a literature review, subject matter expertise, and aid or theories. The researcher has also framed the hypothesis required for the following research stage. The study further progressed to the research design used by researchers is exploratory, descriptive, and causal. The study focused on 130 employees, the target population working in the procurement department as managers and procurement department heads at life insurance India. In the present study, the researcher collected primary data by administering a structured questionnaire and getting it filled out by the respondents. The researcher collected Secondary Data for purposes other than the problem at hand.

This research study collected data from 24 Life insurance companies through Survey Method. Respondents were asked various questions on E-Procurement. Data would be managed with the help of a structured questionnaire. This method used a formal questionnaire with questions prearranged in order. The online survey contained questions that were grouped into ten sections.

The researcher designed and distributed the research questionnaires in MS forms to different respondents on their respective Mobile phones. The survey was sent in a controlled environment of only the Life insurance. System validations were built to avoid missing answers and duplicate responses.

The study finally described the data coding, data entry, and data screening methodology and how it is error and omissions-free. It was also imperative to examine the descriptive statistics and infer various customer profiles and industry profiles related to the life insurance industry in India. With an interpretation rationale, the researcher defined mean variable limits to identify Strongly agree and disagree variables and eliminate variables with high variations. Each of the individual variables (Both Independent and Dependent variables) descriptive statistics were analyzed that could navigate the next steps seamlessly. The researcher conducted the factor analysis and checked the reliability and validity by performing reliability and validity tests with appropriate scientific methods. The researcher then constructed the structural equation model and determined the moderating and mediating effect along with statistical analysis to identify variables that support and do not. The chapter

concludes with a summary of the hypotheses results with the support of beta values and P-values.

The hypotheses testing and results were summarized by the researcher as follows

1. Accept Alternate Hypothesis – H1, H2, H5, H6, H8 & H9
2. Accept null Hypothesis – H3, H4, & H7

5.3. Discussion of the Findings

5.3.1. Summary of the Finding descriptive

Socio-demographic information of the respondents

Information	Categories	Frequency	Percentage
Gender	Female	15	13.8%
	Male	93	85.3%
	Do not prefer to Say	1	0.9%
Age	20-29	7	6.42%
	30-39	49	44.95%
	40-49	40	36.70%
	Above 50	13	11.93%
Education	Bachelor's Degree	53	48.62%
	Master's degree	55	50.46%
	Higher than a Master's degree	1	0.92%
Experience	Below 5 Years	6	5.50%
	Between 5 to 10 Years	25	22.94%
	Between 10 to 15 Years	33	30.28%
	Between 15 to 20 Years	30	27.52%
	Above 20 Years	15	13.76%
Operating Offices	Only India	93	85.32%
	India and abroad	16	14.68%
Number of Offices	100 or fewer Branches	28	25.69%
	Between 101 to 250	31	28.44%
	Between 251 to 400	18	16.51%
	Between 401 to 800	15	13.76%
	Above 800	17	15.60%
Number of Employees	500 or fewer employees	10	9.17%
	Between 500 and 3000	29	26.61%
	Between 3000 and 6000	19	17.43%
	Between 6000 to 9000	17	15.60%
	Above 9000	34	31.19%
Procurement Decision	Centralized Procurement	96	88.00%
	Decentralized Procurement	4	4.00%
	Hybrid (Mix of both)	9	8.00%
Procurement Reporting	Finance/CFO	104	95.00%
	HR/CHRO	4	4.00%
	Others	1	1.00%
Procurement Scope of work	Complete life cycle, including supplier management and payments	13	12.00%
	Only till commercial finalization	77	71.00%
	Only till contract vetting/Purchase order	9	8.00%
	Only till the first contract sign-off and the transition/Purchase order	8	7.00%
	The scope is yet to be defined/Others	2	2.00%
	Above INR 200,000	3	3.00%

Procurement Scope by Value and delegation of Authority	Above INR 50,000	48	44.00%
	Above INR 100,000	27	25.00%
	Above INR 500,000	7	6.00%
	All Values attended by Procurement	24	22.00%
Annual Revenue	Below 1Bn Rupees	35	32%
	Between 1Bn to 2.5 bn rupees	22	20%
	Between 2.5 to 6 Bn rupees	23	21%
	Between 6Bn to 9bn rupees	11	10%
	Above 9bn Rupees	18	17%

a) Profile of the procurement professional basis data collection and analysis is derived as >85% Male by gender with the age group above 30 and below 50 with minimum qualification of Degree and experience of fewer than 20 years. The results show that 95% (104 respondents) report to the CFO function. It is evident from the data that there is an opportunity for further research on whether procurement is organized as a control function instead of or service or enabler function at life insurance India. It is an opportunity for qualitative study or appropriate study.

b) More than 85% of the Life Insurance company operate within India, and few representative offices are outside India. More than 70% of the life insurance companies offices are located, with fewer than 400 branches spread over Pan India locations. However, there is no direct correlation between the number of offices and Procurement volumes. It was due to not all companies operating in retail, all channels, and various other reasons. The results show that 32% (35 respondents) have Revenue of fewer than 1 Bn rupees and 21% (23 Respondents) between 2.5Bn to 6 Bn rupees. The segmentation is spread mainly in various ranges of annual revenues. There is an opportunity to study employee productivity to the sales volumes and how e-procurement adoption is influencing/or not.

c) The results showed that 88% (96 respondents) have organized procurement by centralized model and follow centralized procurement practice. 8% (9 respondents) have responded with a hybrid (Mix of both Centralized and decentralized) type of procurement. 4% (4 respondents) have responded as decentralized procurement. It is evident that Life insurance in India largely follows centralized procurement. It is for further analysis and research on how centralized procurement enables E-procurement.

d) The results show 71% (77 respondents) have the procurement scope of work fenced till commercial sign-off. The subsequent activity of agreement and order creation is delegated to the respective function to utilize procurement resources in a strategic direction effectively. The control of whether the order was released as per agreed commercials needs further research and analysis. It is an opportunity for a qualitative study or appropriate study.

e) The researcher started with the design of quantitative research. However, the basis of the pilot study, demographic profile responses, to derive procurement effectiveness only by quantitative research may not have coverage to all dimensions. How does E-procurement integrate into this design, and does people skills impact e-procurement effectiveness? Need further research and opportunity for a qualitative study or appropriate study

5.3.2. Descriptive statistics Main variables

Variables	n	Mean	Standard Deviation	Interpretation
E-Sourcing	130	4.04	0.82	Agree
E-tendering	130	4.03	0.85	Agree
E-Negotiations	130	3.98	0.83	Agree
E-informing	130	3.94	0.85	Agree
E- Design	130	3.93	0.90	Agree

E-Invoicing	130	4.08	0.78	Agree
E-Procurement Adoption	130	4.21	0.64	Strongly Agree
Cost & Lead times	130	4.21	0.84	Strongly Agree
Govt Policy	130	2.82	0.90	Neutral

The result showed that the respondents perceived that all determinants impact E-procurement Adoption, cost, and timelines except government policy. The respondent perceived that government policy does not impact E-procurement adoption or cost and timelines.

5.3.3. Objective 1: Determinants of E-procurement Adoption and Effective determinants

Construct	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Decision
E-design to e-procurement adoption	-1.466	-1.431	0.416	3.528	0.000	Supported
E-informing to e-procurement adoption	1.647	1.566	0.592	2.784	0.005	Supported
E-negotiations to e-procurement adoption	-1.187	-1.173	0.574	2.069	0.039	Supported
E-procurement adoption to cost and lead time	0.912	0.905	0.043	21.236	0.000	Supported
E-sourcing to e-procurement adoption	1.111	1.078	0.368	3.024	0.003	Supported
E-tendering to e-procurement adoption	0.638	0.727	0.539	1.185	0.236	Not supported
E-invoicing to e-procurement adoption	0.143	0.112	0.236	0.606	0.545	Not supported
Govt policy to cost and lead time	-0.075	-0.079	0.056	1.335	0.182	Not supported
Govt policy for e-procurement adoption	0.055	0.035	0.044	1.243	0.214	Not supported

The analysis has shown that E- Design has an effect, $\beta = -1.466$, E-Informing $\beta = 1.647$, E-negotiations with $\beta = -1.187$, and E-Sourcing with $\beta = 1.111$ are significant with t-values of >1.96. E-Invoicing and E-Tendering have an indirect effect of $\beta = 0.143$ and $\beta = 0.638$, which is not statistically significant (Preacher and Hayes, 2004, 2008). Thus, we can conclude that the effects are statistically significant for E- Design E-Informing E-negotiations and E-Sourcing on Procurement adoption and Mediating effect of Procurement adoption on cost and timelines with $\beta = 0.912$ and T value > 1.96.

Basis the β value and the P-value, the following hypothesis results are derived

E-Procurement determinants are E-Design, E-Informing, E-negotiations, and E- Sourcing. E tendering and E-invoicing at Life insurance Industry India. The determinants that statistically impact E-procurement adoption are E-Design, E-Informing, E-negotiations, and E- Sourcing. The moderate effect is established due to E tendering and E-invoicing at Life insurance India though they are determinants of E-Procurement.

5.3.4. Objective 2: Mediating effect of Procurement Adoption & Impact of Independent Variables

Construct	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
E-Procurement Adoption to Cost and Time	0.913	0.910	0.040	22.728	0.000
Independent Variables to Procurement Adoption	0.870	0.869	0.042	20.830	0.000

Independent Variables to Cost and Time	0.794	0.792	0.069	11.437	0.000

Mediating effect is established between E-Procurement determinants and Procurement performance with a Beta value of 0.913 and a P-value of Zero. The Impact of independent variables on procurement performance is 79.4%, and the P-value of Zero.

5.3.5. Objective 3: Moderating Effect of the Government policies on the Path

Construct	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Govt policy to cost and lead time	-0.075	-0.079	0.056	1.335	0.182
Govt policy for E-procurement adoption	0.055	0.035	0.044	1.243	0.214

Note t-value >1.96 to consider statistical significance

Based on the result, the researcher has concluded that the moderating effect Govt policy is statistically insignificant as T-values < 1.96 and the P-Value is > 0.05 (Preacher and Hayes, 2004, 2008) for both E-Procurement Adoption and Procurement effectiveness of Cost and lead times.

5.4. Managerial Implications of the Findings

Managerial implications can be summarized as

a) A framework of the business drivers for e-procurement is introduced. This framework can assist managers in classifying relevant issues in assessing and developing the case for E-procurement adoption. While the literature offers theoretical benefits for E-procurement, the paper provides managers, practitioners, and researchers with empirical evidence of the drivers for this technology and the problems encountered in an implementation-specific to the Life Insurance Industry in India. The drivers of E-procurement adoption have statistically arrived with significant and not-so-significant drivers
b) Though dynamic regulatory changes plague the life insurance industry, the current study does not support a positive or negative impact on E-Procurement adoption and Procurement effectiveness of cost and Lead times. There is a moderate effect based on empirical evidence. However, it is prudent for researchers and practitioners to evaluate the ongoing changes and arrive at a conclusion
c) The most comprehensive practices procurement strategy is centralized procurement by life insurers in India. The function is still perceived as a control function and reports to the Finance and CFO
d) Procurement teams across Life insurance India have a delegation of authority to users to release the bandwidth of procurement professionals. Users can buy up to a specific limit without approaching procurement subject to one time, and value is limited. 80% of the insurers have DOA of 100K rupees so that Procurement teams could focus on strategic sourcing and buying

5.4.1. Research Contributions

Information is the basis of all rational decision-making. Today's macro and microenvironment is an information flood scenario, where the amount, diversity, and speed of (creation) of information are proliferating. Furthermore, information can only support decision-making if it is truthful to aspects of the world it claims to represent (truthfulness). Proper management of these four dimensions is of paramount importance in critical fields such as finance, healthcare, and the Insurance industry; however, there was limited information on E-procurement adoption and its effectiveness in the life insurance industry. The research contribution can be summarized as

a) This research is the first of its kind in the life insurance industry that contributes to various dimensions that can be a topic for future research to support decision-making.
b) Research Contribution items are indicators of a vital, high-quality research environment. The current research provides indicators of the research's social, cultural, environmental, and economic benefits, including the advancement of E-Procurement at Life insurance India.
c) The critical academic contribution from this research is developing the procurement effectiveness model, which builds upon existing

research and applies new thinking to develop a holistic approach to improving procurement. Regarding the contribution to practice, the research provides a bridge between academic and industrial thinking to improve the quality of information available to those looking to embark upon a procurement transformation.

d) The key to procurement success is achieving Supply chain resilience, and this research contributes to the foundation of a resilient supply chain by adopting E-Procurement.
e) Though the most widely practiced procurement strategy is centralized procurement and E-procurement adoption by life insurers in India based on current research, due to the research contribution, there is an opportunity to conduct further research on the next level of Process maturity. Researchers can examine how AI (artificial intelligence) could be integrated to enhance the current procurement model and processes.

5.4.2. Theoretical Contributions

Theoretical contribution can be summarized as

a) The researcher proposed a new concept and unique framework that is effective for Life insurance procurement effectiveness. The new framework and hypothesis were tested and proved statistically from previously provided research. This aids procurement effectiveness
b) The researcher Investigated a new relationship among different concepts concerning E-procurement adoption by reducing the number of known drivers to significant drivers, which enables low effort and high impact on practitioners and researchers.
c) The study contributed to the growing body of literature on the optimal and governance principles for life insurance procurement, which are vital in dealing with their growth, sustainability, and continuity.
d) The study made recommendations to the procurement fraternity on the direction to work on a procurement policy for procurement effectiveness and identified various gaps in procurement effectiveness
e) The study examined a previously tested theory in a new context and considered new assumptions or axioms in a previously studied model.

5.4.3. Practical Contributions

Practical contribution can be summarized as

a) This research offers a valuable road map toward an integrated Procurement framework for the E-Procurement platform. The framework follows a holistic approach covering three main elements: Procurement effectiveness of Cost and Lead times, Govt policies, and E-procurement adoption, which corresponds to the current and emerging role of procurement in the context of the Life insurance industry in India
b) Procurement Insights noted that an estimated 70 percent of digital transformation (Digital transformation report 2018) is delivered through the supply chain and is impacted by procurement. In many companies, the procurement team leads the digital transformation. This research fully supports the research and implementation in that direction. It is very supportive for Practitioners and researchers that e-procurement tools are available for every step of the e-procurement process with an empirically proven framework provided by this research.
c) Furthermore, after almost 30 years of procurement evolution, procurement tools are more affordable and efficient than ever. Today, the use of digital tools is second nature to procurement professionals. Popular e-procurement tools have far-reaching benefits. Companies use them to improve efficiency, reduce costs and understand profitability. These benefits have changed the way procurement teams are viewed. With this framework, they have earned a more strategic and surest path of success for the life insurance industry's e-procurement adoption.

5.5. Research Limitations and Recommendations for Future Research

The research has the following limitations and recommendations for further research

a) The research paper is limited to procurement effectiveness of cost and lead times; however, there is an opportunity to consider the quality of procurement and examine whether the framework and recommendations are valid. There is a skill and competency dimension for procurement effectiveness and management support concerning supplier relationship management.

This dimension can be examined with a qualitative approach, which was not feasible during this research due to the broad scope and limitations.

b) Though the most widely practiced procurement strategy is centralized procurement and E-procurement adoption by life insurers in India based on current research, due to the research contribution, there is an opportunity to conduct further research on the next level of Process maturity. Researchers can examine how AI (artificial intelligence) could be integrated to enhance the current procurement model and processes further.

c) The framework and research outcome is based on Life insurance procurement with a limited supply chain focus. The supplier chain resilience due to the E-procurement adoption could be hypothesized and tested for further research.

d) This research will help future Chief Procurement Officers (CPO) educate themselves and enable them with forward-looking procurement decisions since e-procurement provides centralized purchasing activity, visibility into that activity, and the ability to analyze spend-related data dynamically. When organizations move from manual to automated procurement, they become what they often seek to be for the company—a highly strategic and cost-saving operation. It will be limited to the life insurance industry and cannot be uniformly adopted in other industries.

e) There is change management and willingness also dimension. There is an opportunity to establish drivers and conduct quantitative or qualitative analysis.

f) There are inherent limitations and risks due to e-procurement practices such as:

1. The life cycle cost of the total cost (TCO) may be too high.
2. Any web-based system is prone to hacker attacks.
3. All suppliers may not be tech Savoy, and it will not be easy to get suppliers to cooperate electronically.
4. The system may be too cumbersome due to the nature of business, and it may be difficult for internal and external integrations

This research has not explored these dimensions. Exploring these dimensions in the life insurance India procurement space is possible.

5.5.1. Conclusions

This study examined the factors influencing e-Procurement adoption in life insurance India companies. Based on the findings, the following conclusions are drawn. First is the three most important factors that influence the adoption of E-Procurement, i.e., E- design, E- negotiations, and E-informing. The second conclusion is that the researchers viewed the factors that can influence procurement effectiveness in terms of cost and lead times. The research concludes that E-procurement adoption with the drivers of E-design, E-negotiations, and E-informing influences procurement effectiveness significantly based on the statistics. The third conclusion is that there is no significant influence or impact (Positive or negative) on procurement effectiveness or e-procurement adoption due to the regulator IRDA (govt policies). Lastly, independent variables identified (E-Design, E-Informing, E-negotiations, E- Sourcing. E tendering, and E-invoicing) may not impact E-procurement adoption and cost & lead times. However, collectively, they are statistically signification, with a T-value of > 1.96 and a P-value of 0.000.

The practical framework based on Statistical significance can be reconstructed for the Procurement framework of the life insurance Industry in India.

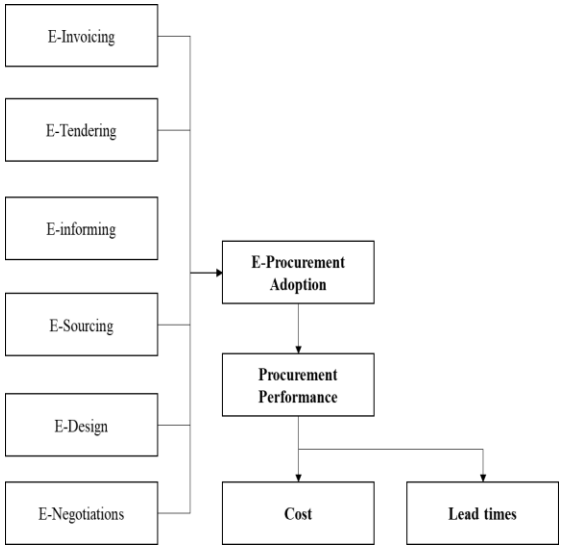

Exhibit 6: Final recommended Framework for Life Insurance Industry Procurement

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