BLOCK-CHAIN TECHNOLOGY TO BUILD PSYCHOLOGICAL BLOCK-CHAIN: A SUBJECTIVE ANALYSIS FOR SALES STRATEGIES

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Abstract

Block-chain as a technology appears to be a break-through competitive advantage, if integrated with behavioral dimensions for the marketing of insurance products/services. So, the main aim of the present study is to propose a conceptual frame-work (model) of psychological block-chain in the context of block-chain technology. Major outcomes of this study refers that the components (trust, confidence, & intention) of psychological block-chain are hierarchically ordered in the model with respect to the corresponding procedural hierarchy of 'decentralization', 'interaction' and 'learning process'. These hierarchical considerations in total are reaching the 'sales-closing', which is the major contribution/novelty of the present study.

Keywords: Psychological Block-chain, Technology, Insurance, Framework, Model, Managerial Process.

1. BACKGROUND OF THE STUDY

Success of any commercial organization is the ultimate consequence of the strategic alliance between traditional business practices, technological applications, and psychological set-up of customers/clients. One of such technological applications is the block-chain technology, which strategically implement some of the business practices since long period such as data collection, classification, retrieval or use by all relevant users. The said technology became very important for business-success in recent days, because block-chain technology in long-run can be correlated with promising technologies like edge computing, artificial intelligence, and machine learning (Nizamuddin & Abugabah, 2021), and block-chain technology in combination with other advanced techniques carry a hopeful future ahead. The only dimension, 'structural psychological set-up of the customers' is lacking in application of block-chain technology along traditional business practices, because it is realized from various important studies that block-chain technology is separately associated with transparency, trust, identity management (Nizamuddin & Abugabah, 2021; Mercuri, Corte & Ricci, 2021; Khushalaniet al., 2020, Casino, Dasaklis, & Patsakis, 2019;Shin, 2019; Krawiec et al.,2016; Chekriy & Mukhin, 2018; Bramall et al., 2005), safety/security/privacy (Tsoulias et al., 2020; Casino, Dasaklis, & Patsakis, 2019; Shin, 2019; Brophy, 2020; Yli-Huumo et al. 2016), integrity and immutability (Dhillon, & Backhouse, 2000; Seebacher & Schuritz, 2017; Khaqqi, et al., 2018; Peters & Panayi, 2015). And, some other factors are also associated with block-chain

technology that are indirectly influencing a positive intent of the customers like corruption, human trafficking, fraud, equality, democratic participation, online identity, and freedom of expression (Al-Saqaf & Seidler, 2017), which have relevance in some other domain. Not only the 'trust', but also the entire trust-architecture can be the consequence of high 'technological maturity' being associated with the concerned industry (Top Tech Trends in Insurance | McKinsey, 2021), but this trust-architecture need to be improved a lot. Seeing most of the above cited studies being carried-out on insurance industries connected the technology-application with a positive psychological set-up, the present study considered the life-insurance industry to be the context of the present study as the life-insurance products/services are sensitive to be strategized both for the individuals and the economy at large. On this back-drop, the topic is introduced to be studied as follows.

2. INTRODUCTION

Service-oriented organization, especially life-insurance industry must emphasize on the purchase intention of the customers rather than the final purchase action along the technological application, because technology-related factors, customer-related factors and firm-related factors are forming trustworthiness towards technology and organization, where this trustworthiness is ultimately building technology-attitude and trust-attitude that are forming the 'intention to use' in insurance industry (Gidhagen & Persson, 2011). And, 'behavioral intention' in life-insurance industry is significantly influenced by reliability and responsive customer support (Ramamoorthy et al., 2018). So, leading organizations in life-insurance industry are playing active role in encouraging technical and market developments that desired by the industry and economy (Yates, 1993). Proper technological applications, not only builds the trust, transparency, integrity, and safety/security aspects, but also carries the probability of reducing the perceived risk of customers, which is very important for positive intent of customers because perceived risk has a significant negative effect on purchase intention in the life-insurance industry (Nursiana, Budhijono, & Fuad, 2021). Now, the question is whether the block-chain technology really adds any value to the entire life-insurance business for long time period? One of the probable answer can be obtained from the study of McKinsey, where the study explained major shifts in insurance operating models and shown that the value generation points in insurance industry are IT, operations, risk carrier, product provider, distribution, customer access (Major shifts in insurance operating models are under way | McKinsey, 2021). Further, it is explained in the above study that the ecosystem/platforms, rather than traditional distribution channels would be preferred more as the ecosystem integrates customer-experience touch-points across industries; and rise of ecosystem can be driven by players from banking, retail, and other sectors. So, it can be inferred that improvement in technological implications of the business practices in life-insurance industry can develop the overall business through the positive intent of customers, which is substantiated by the study of Khare et al. (2012) that the service usage of customers can be enhanced by improving technological attributes of website for online insurance. The back-ground and introduction of this study can be summarized to draw an inference that there is a bare necessity to study the block-chain technology relating to psychological set-up of customers to explore the strategic components for the service

industries, especially for life-insurance industry. In this context, the research problem of the present study is stated as follows.

2.1 Research problem

"Can the psychological building blocks be the hierarchical strategic components for a complete sales process on the base of block-chain technology in life-insurance industry?"

3. LITERATURE REVIEW

Relevant literatures are studied keeping in mind the research questions and systematically presented as follows.

3.1 Importance of the Block chain Technology for the Insurance Industry

The block-chain technology takes an advantage over other competing technology or system in the modern service oriented organizations, because block-chain based infrastructure or framework can tender a sustainable incentive mechanism by providing services like sharing economy, smart contracts, and cyber physical interaction (Rahman et al., 2019). Application of block-chain technology in life-insurance industry becomes inevitable for the overall sales-effectiveness of the organization, because block-chain technology deals with peer-to-peer linked structure that maintain the orderly transactions and avoid double spending problem (Nakamoto, n.d.). Further, block-chain technology was initially intended to eliminate the intermediaries in the industry (relating to crypto-currency and bitcoin), which gives a clear indication of best suitability of block-chain technology in insurance companies.

Modern marketing of financial products/services that deals with three phases transactions constituting clients' assess to block-chain network, verification of financial assets in distributed ledger, and recording of information into the block-chain ledger (Workie & Jain, 2017) can provide clear competitive advantage to the insurance companies. As it has been justified by various studies that block-chain focuses on record keeping, verification, data privacy, and simultaneous consumption of data/information through a decentralized process, without any manipulation, the study of McKinsey (2021) can be considered as a base to strategize the block-chain technology for the for the life-insurance companies. The above study (figure-1) it can be inferred that 'change management', 'organization and talent', 'data capabilities' and 'models & tools' are interlinked with each other keeping the 'culture' of the organization' in the centre to form a strategic framework (analytics strategy in the figure-1). Although, the above study mostly deals with artificial intelligence (AI), it addressed the issues of block-chain technology for its implementation in the insurance industry. Thus, the technological (block-chain technology in the present study) implications can be studied in combination with the psychological set-up of the customers to gradually reach the ultimate business targets, the sales-closing of insurance companies.

Figure 1: Strategic Components of Block-Chain Technology
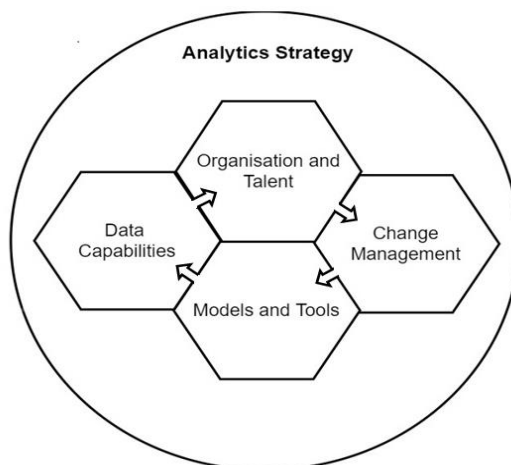
(Source : Insurance 2030--The Impact of AI on the Future of Insurance | McKinsey, 2021)

3.2 Trust & Decentralization in the Context of Block-chain relating to Insurance

The transactions of financial products attract the mind of both practitioners and researchers towards some obvious psychological components like trust, believe, perceived safety, reliability, etc. These components carry even more importance, if there are technological applications as it requires wide consensus among organization and customers/clients, which is rightly pointed out by Tsoulias et al. (2020) that the decentralization is required with refinement of the current consensus mechanism and approaches in adopting the block-chain technology to overcome the safety, efficiency and scaling barriers of block-chain relating to financial products. And, it is found by another study (Khushalani et al., 2020) that sensitive commodities (like financial products) can be benefited from the principles of decentralisation. Further, the above study refers that the system of block-chain technology can improve the trust and can promote the privacy of information, even in the time of crisis. Complementing the results of above two studies, it can be cited here that block-chain technology develops a trust-environment through its transparency characteristics, ensuring information made available to the public across its full network being assured with integrity and immutability that are strengthened by the collaborative settings (Seebacher & Schuritz, 2017). Any technological system adopted by organization can be successfully only when the consumers/clients of that organization will adopt/utilise this system, which is true for the block-chain technology also as this technology with trust as it offers both the functional and emotional benefits (Fleischmann & Ivens, 2019). The above result is strengthened by this same study by another result that the study of trust can provide a rich and useful conceptual foundation for the analyses of block-chain phenomena. Logically it can be inferred that the systematic application of block-chain technology can be treated as a broader system aiming an end-result of the organization in the psychological context. In this conjecture, study of Casino, Dasaklis, & Patsakis (2019) says that application of block-chain technology can be done in the diversified filed by mentioning

the contribution of trust, privacy, and scalability to the block-chain technology in the financial sector. The demographic variables can be strategized also for the application of block-chain technology in the insurance industry (the context of present study) as it is found that there can be a variation in the block-chain along the changes in demographic variables (Grima, Spiteri, & Romanova, 2020); and growth of block-chain acceptance is associated with demographic variables, where younger generations and IT professionals can act as early adopters (Lee, 2019). Further, the previous study analysed the crucial factors having effect on the potential take-up and propagation of block-chain technology within the insurance industry and found that highly educated society is accepting more the new technologies that favour the decentralisation of power. So, the block-chain technology can be implemented as an access-control moderator, where the users are aware of the data that is being collected and their usage (Zyskind, Nathan, & Pentland, 2015) and hence, customers' trust can be built. It can be inferred that customers' trust be strengthened by decentralised platform, legal and regulatory decisions, and tamper-proof storage & sharing. These features are also identified by above cited study. Hence, it can be said that block-technology can be applied in the insurance industry in the buyer-seller psychological context. This proposition of the present study can be substantiated by the study of (Nizamuddin & Abugabah, 2021) that block-chain being associated with IPFS (Interplanetary File Systems) framework can enhances customers' trust for insurance companies, improve lucidity of insurance dealings, and can make successful identity-management of the insurance organizations.

3.3 Confidence and Interaction

The present competitive scenario demands a continuous flow of data/information, where capturing of information by customers/clients is all about how they respond to the company's communications. If the above type of communications will be discussed by touching the financial products, then the study of Jaag & Bach (2016) is worthy to mention here that financial transformation can be possible by providing secured transaction, which can be enabled by block-chain technology that work with peer-to-peer to interaction and decentralized system. Connecting the above discussion with the confidence, it can be cited here that block-chain enhances financial capabilities, cost saving, enabling peer-to-peer interaction among customers without any third party, enable to revenue new models and acquiring technologies (Rajnak & Puschmann, 2020), which develop confidence in the minds of the customer/client towards the financial product. The developed confidence in the customer/client can be an outcome of trust because trust is the ultimate key driver for user and customer/client to adopt block-chain technology and its application (Fleischmann & Iven, 2019) which may lead to intention and interest towards learning. It is a usual understanding in the service industry that privacy/security is behind the trust. In this conjecture, two different studies are worthy to mention here that security and privacy regulatory bodies are developing and formulating testing processes for fin-tech applications which focus on the potential & realisable benefits of block-chain (Brophy, 2020) and elimination of fraud and corruption is possible by implementation of smart contracts in the context of claim processing in the insurance industry (Kalsgonda & Kulkarni, 2020) in connection with block-chain technology. Plausibly, an inference can be drawn keeping in view the life-insurance industry that less friction and human involvement

with less physical infrastructure are needed for secured regular/daily transactions of assets, which is also the outcome of the study done by Swan (2017). So, with confidence and interaction, psychological building blocks get manifested in the minds of the customer/client which may be regarding benefits, compliance, reputation or trust. These blocks pave way to learn more that results in the likelihood/intention towards the concerned product/service with learning as it provides enhanced reliability, improved fault tolerance capability, faster and efficient operation, and scalability. Therefore, integrating block-chain with devices would enable the companies for secured communication in a distributed environment with the customers/clients (Biswas & Muthukkumarasamy, 2016). Thus, the block-chain technology is the need of the hour for the life-insurance industry to develop the confidence in the mind of customer that propel them for continuous interactions.

3.4 Likelihood/tendency/intention & Learning process

It is a well-known fact that the probable consequence of the psychological set-up related to certain stimulus/stimuli, is the likelihood/tendency/intention towards the concerned stimulus/stimuli. The said psychological set-up can be the learning of concerned individuals and learning over specific time periods become blocks, where these blocks are automatically connected (strengthened) to form the intention. In the technological application also, the similar pattern follows that the block-chains can be scaled up to address the problems of concerned organization (Tsai et al., 2017), which is substantiated by another result that the technology-quality, not the technology accessibility propels the reflective thinking, which ultimately improve the users' perceived-learning effectiveness (Zhang et al., 2017). Logically it can be said that the organization should try to bridge the knowledge gaps of the customers, which can form a block-chain of knowledge (that build over the time periods). In this way a learning process can be established in the mind of customers that will build the intention towards the concerned products (life-insurance in case of present study). So, rightly said by Chong et al. (2019) that knowledge gaps can be bridged through appropriate values from block-chains. So, it is a usual practice in the insurance industry to provide different set of information in different time periods to both current customers and potential customers, which ultimately form the psychological block-chain (the learning process). The above said psychological block-chain is built upon the block-chain technology practised by the service industry and hence said by Morkunas, Paschen, & Boon (2018) that managers are advised to continuously supervise the block-chain technologies to examine their impact and evaluate the strategic importance of block-chain for their business, without which they will lose the competitive edge irrespective of type of business (new or old). The proposition of the present study that psychological block-chain can be oriented positively towards services/products of certain organization through the block-chain technology, is possible as an innovative business model because block-chain technology is beneficial in cross-functional areas and across the industries, which is rightly specified by Xu, Chen, & Kou (2019) in their study that there has been implantation of block-chain in computer science, followed by engineering, financial services, telecommunications and business economics. Economic advantage, initial coin offers, block-chain technology, sharing economy and fin-tech revolution are among the five most common research themes highlighted in the above study that are justifying the proposition of present study. Similar

results are found by Al-Saqaf & Seidler (2017) that implementation of block-chain is beneficial beyond banking sector so far as economy and society is concerned, because relevant application of block-chain in several other domains has large impact on the society. The above said benefits of block-chain can be in terms of transparency, equality, autonomy that can aide advancement in area such as online identity, democratic participation, corruption, fraud and freedom of expression. Some features of block-chain technology that are vital for financial products and differentiate the block-chain technology from other database technology, could be identified by Peters & Panayi (2015). Permitting, data integrity, data security, data authenticity, and several key legal criteria for financial assets are among these elements for financial assets. So far as service industry (insurance industry in the present study) is concerned, the above factors are very important to build a positive intention in the mind of customers towards concerned organization. The benefits of block-chain in the transactions of financial products are expanded by another study (Bogucharskov et al., 2018), which shown multiple advantages of implementation of block-chain technology in trade finance like increasing cyber security, performing transactions in block-chain, and introducing an arbitration dispute resolution mechanism. Outcomes of above three studies can be complemented by the facts that block-chain technology enables the organizations to provide services like sharing economy, smart contracts and cyber physical interaction with block-chain and IoT (internet of things) with a systematic framework (Rahman et al., 2019). All the above discussions can be summarized in way that insurance companies can minimize their operational costs and fraudulent claims by the proper implementation of block-chain technology (Chakravaram et al., 2020), which will make the value addition not only for the individual customers of insurance products, but also provide an valuable input to the entire economy.

3.5 Sales-closing in insurance industry in connection with block-chain

Sales had been a priority concern for any organisation, so also for the service-oriented organizations, where the mind-set of the consumer/client is the focal point of strategists or planners. If it is a matter of finance or insurance products, which is sensitive to be marketed both for the individual and society/economy and is a regulated industry, then value addition carry utmost priority that is possible with appropriate technological implications in the modern competitive era. In this context, the study of Yeoh (2017) should be cited here that use of block-chain technology advances with minimal regulatory requirements for value adding and efficiency enhancement of financial services, hence increasing accessibility and, as a result, financial inclusion. The logic of above study can be substantiated by another study that solution for selling and buying an online asset do require a smart contract that ensures the royalty to original authors and artists, where the smart contracts (self-executing digital contracts) should be accomplished by contract code and algorithms for the sales of any form of digital assets (Nizamuddin et al., 2019). Not only smart contracts are the solutions but also rapid technological development through block-chain technology enhance the secured transactions related to financial products that easily fall prey to fraudulent acts like a claim processing system "Claim-Chain" that is built upon a consortium Block-chain platform (Bhamidipati et al., 2021); but also use of block-chain technology advances the cause of environmental sustainability by implementation of a framework and system architecture of block-chain based

LCA (Life Assessment Cycle) system (Zhang et al., 2020); and also block-chain combined with IPFS (Interplanerty file systems) framework enhances customers' trust in the insurance industry promotes transparency of insurance transactions and the insurance industry's overall data and identity management. Similar result is obtained by Mercuri, Corte, & Ricci (2021) that block-chain technology assigns a guaranty of transparency as the data is not editable but reduces information asymmetry of stakeholders with reduction of transaction cost. The above three studies are implying an interpretation that the sales can be the strategic consequence in the modern competitive era. Being a tedious task, sales can be the strategic consequence of modern technologies in the changing business scenario. In this context, a study shows that changes due to block-chain technology can be categorised under four areas like new service introduction, cross currency transactions, reflection of changes in the new business models as existing business models are being obsolete and these changes create potential for fin-tech to enter markets by leveraging block-chain technology (Holotiuk, Pisani & Moormann, 2017). The property of Block-chain technology has some uniqueness like decentralized payment-systems, secured transactions, and lesser cost of transactions can put forward a range of advantages for individual customers, companies, and the society at large by combining a pervasive physical network along extensive experiences in the provision of financial products, because unique technology in decentralized payment systems is expected to continue and transform the present financial systems (Nizamuddin & Abugabah, 2021). All the above discussions are giving rise to a thought that insurance sectors can adopt the block-chain technology that can enhance the efficiency in sales. The hierarchical relationship between trust, confidence, and intention with the corresponding managerial process like decentralisation, interaction, and learning leads to sales as a combined consequence.

4. RESEARCH QUESTIONS

Bases upon the research problem, the following research questions are framed.

 (i) What are the strategic components of a complete sales process in the service industry, emphasizing the life-insurance industry?

(ii) Can the strategic components of the sales process be hierarchically ordered for the life-insurance industry to reach the ultimate business targets?

(iii) Can the block-chain technology provide a framework to execute the sales process along the strategic components in the insurance industry?

(iv) What will be the model to execute the sales process having the framework of block-chain technology in insurance industry, so that it can be extended to other service industries?

5. RESEARCH METHODOLOGY AND DESIGN

The present study follows the descriptive research design, where the strategic components of overall sales process relating to service industry, especially focusing on insurance industry, are identified. The characteristics of above said strategic components are described by reviewing the relevant literatures (published research articles, conceptual articles, case-studies, survey

reports, reports/studies of professional organizations). Logical relationships are established between the outcomes of the reviewed literatures to respond to the research questions of the present study. In some instances, expert-opinions (management practitioners in the industry having the experience of implementing the block-chain technology) are taken to logically relate the existing literatures. In this way, a model is proposed, where the three elements (trust, confidence, intention) of customers' psychological set-up are hierarchically ordered and these components are describes to be associated with three (decentralization, interactions, learning process) managerial processes. Hence, the above said hierarchy is described in the present study as a psychological block-chain. The components of the psychological block-chain are justified to be the strategic components for service-oriented organizations, especially for the life-insurance companies with the implementation of block-chain technology in the concerned organization.

6. RESULTS & DISCUSSIONS

By applying the logic within the outcomes of extensive literature review, a model is proposed that describes the hierarchical system of block-chain technology meant for the service industry, especially for the transactions of life-insurance products. This proposed model (figure-2) is explained as follows.

Figure 2: System hierarchy of Block-Chain
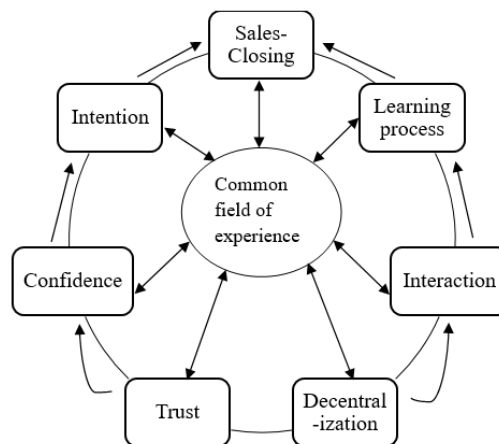
The basic idea behind the block-chain techniques refers to "decentralize the storage of data so that such data cannot be owned, controlled or manipulated by a central actor" (Hileman, 2018), which laid down the foundation of proposed model of the present study. Here, it is explained that the above mentioned decentralization build the trust among customers (of life-insurance industry in the present study) gradually. A well implemented decentralization along the customers' trust gives rise to the 'confidence' of customers that motivate them to interact with the marketers of concerned service (life-insurance in the present study). Continuous interactions of customers or potential customers with service provider at every 'moment-of-truth' will make those customers learn, which ultimately develop a favourable attitude towards

the concerned financial products/services (life-insurance in the present study). These favourable attitudes gradually take the form of tendency/likelihood/intention to subscribe (purchase) a particular product/service or to subscribe from a particular company. When the continuous learning process develop a positive intention towards a particular financial product/service, the concerned customer involve himself/herself in purchase action, which is called as sales-closing (the final stage of sales process) for that particular company.

It is inferred from the above discussion that a psychological block-chain is developed in the mind of customers through proper implementation of block-chain technology by the organization. Those service organizations, especially the life-insurance companies (considered in this study) are getting success in developing a positive purchase intention in the mind of customers, which are disseminating the information in the regular interval to the target customers/potential customers. Strategic actions of information collection, storage and dissemination to the customers for their consumptions, should be accomplished through block-chain technology by the above mentioned organizations. Information in the mind of customers is said to be stored in the form of different patches (for example – information related to benefits, related to safety/security, related to extra services) as different set of similar information are disseminated in different time period through different media by the concerned organization. The above mentioned pattern of information storage in the customers' mind is explained in this study as psychological block-chain, which generally happens for the service oriented organization, especially for the insurance like product being a sensitive product in connection with the economic condition and future security of the individuals (both current and potential customers). Hence, the life-insurance products and organizations are considered in the present study for the psychological block-chain, which can be generalized to other service oriented organizations later on.

The psychological block-chain is reflected in the form of 'trust', 'confidence', 'intention', and 'purchase behaviour' of the customers in a hierarchical order. The corresponding processes in the hierarchy are 'decentralization', 'interaction' and 'learning processes. The consequence/resultant of the above said hierarchical components being inter-connected with the preceding component, is said to be the sales-closing (purchase behaviour), the end-point of the proposed model. All these components of the model are developing a common field of experience both for customers and insurers. Hence, these components do interact continuously with the 'common field of experience', till the block-chain technology of the organization continues to disseminate the relevant information to the current and potential customers. As a result the potential customers become customer and customers are intending to purchase the similar service/product from the same organization. Thus, the more the strength of "common filed of experience", the more will be the potentiality (probability) of the lower order components of block-chain system to go upward to arrive at the sales-closing, the highest order component (resultant of psychological block-chain) of the above said system. Here, it is suggested that the components of above said system are hierarchically ordered.

7. ORIGINALITY/CONTRIBUTION AND MANAGERIAL IMPLICATIONS

The major contribution of this study is the development of a hierarchical model of overall sales-process focusing the service industry, especially the insurance industry. This hierarchical model is built on the framework of block-chain technology, which is rarely studied by any researcher till date. The second contribution or originality is that the hierarchical model is nothing but the customers' psychological block-chain, which is suggested by this study to treat as the strategic components by the life-insurance companies for their ultimate business goal (sales-closing). Every component of the above said psychological block-chain can be strategized as the strategic components (trust, confidence, & intention) for the said business goal, which can be accomplished by implementing the block-chain technology by the life-insurance companies. The block-chain technology also enables the companies to associate the managerial processes (decentralization, interaction, & learning process) with the components of psychological block-chain, so that all six components can be strategized by the service oriented organization, which is the third contribution of the present study.

8. LIMITATIONS & FUTURE RESEARCH AVENUES

The present study is carried-out mostly by reviewing the existing literatures (published research articles, reports, surveys, and case-studies). So, analysis of primary data can provide more applicability of this research-work, where the life-insurance customers and employees involved in sales activities of life-insurance can be the respondents. Important literatures, mostly related to service sector and insurance industry are studied to answer the research questions and to develop a model. But, some more literatures relating to other industries, where the block-chain technology is applied, can be included to strengthen the logic behind the model of the present study. Even, comparative advantages and disadvantages of competing technologies (to the block-chain technology) can be analyzed by the future researchers to explore the diversified applications of block-chain technology, where the psychological block-chain is the matter of major concern.

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