Study on Indian Health Care Sector: Participation of Private Sector under Public Private Partnership

A Dissertation submitted to the Punjab University, Chandigarh for the award of Master of Philosophy in Social Sciences, in Partial Fulfillment of the requirement for the Advanced Professional Programme in Public Administration (APPPA)

By

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47th ADVANCED PROFESSIONAL PROGRAMME IN PUBLIC ADMINISTRATION

(2021-22)

INDIAN INSTITUTE OF PUBLIC ADMINISTRATION

NEW DELHI

CERTIFICATE

I have the pleasure to certify that Air Commodore U Manoj has pursued his research work and prepared the dissertation titled “Study on Indian Health Care Sector: Participation of Private Sector under Public Private Partnership” under my guidance and supervision. The dissertation is the result of his own research and to the best of my knowledge, no part of it has earlier comprised any other monograph, dissertation or book. This is being submitted to the Panjab University, Chandigarh for the purpose of award of Master of Philosophy in Social Sciences in partial fulfillment of the requirement for the Advanced Professional Programme in Public Administration of Indian Institute of Public Administration (IIPA), New Delhi.

I recommend that the dissertation of Air Commodore U Manoj is worthy of consideration for the award of M.Phil degree of Panjab University, Chandigarh.

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SELF-DECLARATION

I hereby declare that the dissertation titled “Study on Indian Health Care Sector: Participation of Private Sector under Public Private Partnership”, for award of master of Philosophy Degree in Social Sciences of Panjab University, Chandigarh is an original work and work similar to this has not been submitted to the best of my knowledge for the award of any degree or diploma at either this or any other university.

Date: March 2022

Place: New Delhi

(U Manoj)

Air Commodore

47 APPPA

ACKNOWLEDGEMENTS

I wish to express my sincere gratitude to Professor KK Pandey, Indian Institute of Public Administration, for his guidance in writing of this dissertation. He had given me full liberty to shape the contents while guiding me in the right areas with suggestions for course correction, wherever required.

I would like to thank Programme Director of 47th APPPA – Dr. Suresh Misra for being pillar for support at each stage of the course and also being the mentors throughout.

I am extremely thankful to Shri SN Tripathi IAS (Retd), Director General IIPA for his valuable advice from time to time. I would like to express my gratitude to the staff of the Library and APPPA office, IIPA for extending proactive administrative and logistical support.

I would place on record the invaluable support provided by Gp Capt Suresh for proactively sharing his expertise on the subject with me. I am also grateful to my wife Suneela and son Angad for their timely facilitation.

(U Manoj)

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ABSTRACT

TITLE

Study on Indian Health Care Sector : Participation of Private Sector under Public Private Partnership

Research Problem. This study aims to examine the influential factors that affect the intention and behaviour of private sector involvement in Indian Health Care Management (IHM) via Public-Private Partnership (PPP). This study could expand the research scope of intention and behaviour in IHM for the private sector and also develop an analytical framework as reference for other IHM stakeholders to make rational decisions. The research attempts to analyse the influence and relative importance of the private sector by evaluating its intention and behaviour towards participation in Indian health care service delivery via Public-Private Partnership.

Research Objectives Evolved.

1. To assess the intention and behaviour of private sector in getting into a Public - Private Partnership.

2. To analyse the approach of private sector in the Indian health care market via Public-Private Partnership (PPP) in narrowing down the medical resource gaps.

Research Hypothesis. Hypothesis formulated are as under: -

1. Research Hypothesis 1 (H1). AB Attitude towards Behaviour) has significant positive effect on BI (Behavioural Intention).
2. Research Hypothesis 2 (H2). SN (Subjective Norm) has significant positive effect on BI (Behavioural Intention).
3. Research Hypothesis 3 (H3). PBC (Perceived Behavioural Control) has significant positive effect on BI (Behavioural Intention).
4. Research Hypothesis 4 (H4). FC (Facilitating Conditions) has significant positive effect on BI (Behavioural Intention).
5. Research Hypothesis 5 (H5). BI (Behavioural Intention) has significant positive effect on Behaviour (B).

Research Design Followed. The ontological position is that of objectivism and the epistemological position is that of positivism lending to the research being deductive in nature. The research adopted a quantitative approach using cross-sectional descriptive design. The strategy followed was to test hypothesis based on data analysis. A quantitative approach was adopted, as was best suited to measure the correlation between the existing phenomenon and expected or desired developments. Descriptive and inferential statistical design was used to carry out data analysis. Nominal data of perceptions of respondents was converted to interval data using a Likert scale and various tests like factor analysis, test for reliability, sampling adequacy and normalcy of constructs was carried out. Hypothesis testing using one sample T test, One Way ANOVA test to ascertain

equality of means of the various categories of respondents to test homogeneity of responses on important questions was also carried out. These measurements enabled the study to draw out future contours and required lessons.

Method of Data Collection and Data Analysis. The data was collected in the form of researcher administered questionnaires, through a one stage survey using Likert scale as also interactions with experts on the subject. The questionnaire had 140 respondents from various categories that included Medical professionals from civil and military, bureaucrats, Armed Forces personnel and members from the public. Collection of data was undertaken through online mode. The data analysis was undertaken using IBM® SPSS® Statistics (V 25) and other statistical tools.

Major Findings and Validation of Research Objectives. An overwhelming perception that emerges is that private sector is positive towards participation in Indian Healthcare Market. Also, that the private sector has **positive behavioural sensitivity** towards participation in Indian Healthcare Market via Public Private Partnership. It surfaces that the private sector **exhibits optimism and confidence in controlling the resources** towards participation in Indian Healthcare Market via Public Private Partnership. Perception amongst respondents is that favourable measures like **public support could generate a positive belief** in the private sector towards participation in Indian Healthcare Market via Public Private

Partnership. The recommendations at the end of the paper have been made based on the results of the statistical analysis which provided sufficient statistical evidence to reject the Null Hypothesis and validate the Research Hypothesis. Inferential statistical analysis of data collected through Questionnaire indicates that the respondents are in agreement with the alternate Research Hypothesis. The finding shows that Attitude towards Behaviour, Facilitating Conditions, Perceived Behavioural Control, and Subjective Norms are positively significant to Behavioural Intention, and that Behavioural Intention has a significant effect on behaviour. The data lend itself to belief that the private sector participation in Indian health care service delivery via Public-Private Partnership could be considered as one of the approach to narrow down the medical resource gap and improve the operational efficiency of health care facilities.

Special Highlights and Contributions of the Research. This study analyzed the influencing factors of Behavioural Intention and the identification of effect on Behavioural Intention based on modified TPB (Theory of Planned Behaviour). The finding shows that Attitude towards Behaviour, Facilitating Conditions, Perceived Behavioural Control, and Subjective Norms are positively significant to Behavioural Intention, and that Behavioural Intention has a significant effect on behaviour. These provides reference for governments and public authorities to implement appropriate policies for stimulating the private sector's motivation to participate in Indian Healthcare Market via Public Private Partnership and

subsequently narrow down the gap of medical resources and ameliorate the quality of Indian Healthcare Services.

Keywords: **Public-Private Partnership, Intention & Behavior, Indian Healthcare.**

Study on Indian Health Care Sector:

Participation of Private Sector Under Public Private Partnership

Air Commodore U Manoj

CHAPTER I

INTRODUCTION

In India, one doctor is shared by 1445 patients. Considering that as a country India is the 6th largest economy in the world and having ambitions of becoming a $5 trillion economy by 2025, a healthy population alone can help us reach targets and equitable development. However, the Indian average (0.62:1000) is not a healthy statistic to read when compared to the recommendations of WHO of one doctor to every 1000 patients (Business Standard 2019. Compare this with our neighbours like Pakistan and China where the figures are 0.806:1000 & 1.49:1000, respectively (Raman & Ranabir Pal, Sep 2018).

The central government spends about 1.13 per cent of GDP on healthcare. 65 per cent of healthcare expenditure is met by the citizens themselves. The huge financial burden tends to push millions of citizens, especially those from the lower income groups, into poverty.

More than 140 children died of Acute Encephalitis Syndrome (AES) in Bihar in June 2019 (India Today, 2019). The Bihar government has received a lot of flak over the state's poor health infrastructure. The Bihar deaths are not the only such health

disaster to strike India. Many poor people, especially children, die of entirely curable ailments. Most tragedies such as the one in Bihar are the result of poor health care facilities. In December 2019 and in the first week of January 2020, 104 infants died in a government-run hospital in Kota, in Rajasthan. States such as Madhya Pradesh and Bihar, which have a lower share of doctors, also have higher child mortality rates. The burden of poor provision of social services such as health care has a skewed impact beyond class lines.

The current state of India's healthcare can be compared to scene from Shakespeare's Hamlet where Marcellus famously says, "something is rotten in the State of Denmark", to which Horacio's replies "then we should let God take care of it". The apathetic and unimaginative response is symptomatic of the disease that ails non-urban India's healthcare system. All at once during the pandemic COVID-19, we witnessed India's healthcare suffering from quality, quantity, footprint, access and affordability issues. Any one or two of these reasons alone would bewitch most countries and therefore suffering all of them simultaneously is proving to be near fatal.

The World Health Organization estimates that India spent about $275.13 per capita on health care in PPP adjusted terms in 2018 (WHO-Current health expenditure per capita, 2020) and China spent three times that amount, Brazil five times, European nations 10 times and the US 20 times. In aggregate, India spends only about 1.5% of gross domestic product (GDP) on public healthcare. Most countries spend two or more times that number. This allocation is a fundamental problem that impacts infrastructure,

supply of critical equipment and consumables (including syringes, ventilators, oxygen as witnessed during the pandemic), the number of hospitals and the retained staff of doctors, specialists, nurses and assistants.

The objectives of national health policy of 2017 spells out ‘Improving health status through concerted policy action in all sectors and expand preventive, curative, calming and rehabilitative services provided through the public health sector with focus on quality’. The policy also stipulates enabling private sector contribution to making health care systems more effective, efficient, rational, safe, affordable and ethical by progressively achieving Universal Health Coverage aligned to growth of private health care sector; influence its operation, growth and medical technologies with public health goals.

These goals and objectives are aligned to achieve sustainable development in health sector in keeping with the policy thrust. Yet the stark reality of healthcare in India has become even more evident in the last year and half i.e., since first quarter of 2020. The Covid-19 pandemic has brought to the fore large gaps in the Indian healthcare system resulting in loss of lives and many untold miseries (The Hindu Business Line. 2021, March 18). Accessibility and affordability of quality healthcare to all still remain two major concerns.

Public Private Partnership (PPP) refers to an arrangement between the government and the private sector, with the principal objective of providing public infrastructure, community facilities and other related services. Such long-term partnerships are characterised by a sharing of investments, risks, rewards and responsibilities for the mutual benefit of both parties involved. Whilst the public sector is seen as representing a pool of potentials and resources central to the delivery of key public services, the private sector is regarded for its ability to harness its expertise in realising substantial incremental values of those resources. The public sector's potential will not be fully released without the private sector, whose participation can expand opportunities.

PPPs are about more than just privatisation. The prime drivers behind improved efficiency in a privatisation project are freedom to invest, management skills and the motive to generate reasonable profit the motive to generate reasonable profit the motive to generate reasonable profit. Using PPPs to bring these forces to bear can offer a sustainable long-term approach to improving social infrastructure, enhancing the value of public sector assets and making better use of taxpayers' money, fashioned in a politically acceptable way. PPPs are about changing the way in which the government normally goes about doing business and interacts with the private sector. Public Private Partnership model is to introduce the private sectors' expansive skills, experience and finance into the wide range of public sector activities for new and innovative solutions. PPP will or is expected to bring in resources the government needs to make healthcare available, as well as create a sustainable long-term model if the agreements / MoU /

contracts are well formulated / drafted. It can improve the healthcare system by pooling in the expertise and finances of the private sector with the access and subsidies of the public sector.

The Public Private Partnership model in India has seen success in other areas such as infrastructure, energy, education, urban development, tourism, and more. Perhaps it may be the panacea to India's healthcare challenges as well.

Statement of Problem

1. There are shortcomings in the Indian health care system across the length & breadth of country. Public Sector is unable to penetrate and deliver required standards.

2. Private Sector participation is not sufficient enough and is almost absent in the rural India.

3. Inadequacies in availability & quality health care delivery remains till date a challenge in India to be overcome.

Objectives

1. To assess the intention and behaviour of private sector in getting into a Public - Private Partnership.

2. To analyse the approach of private sector in the Indian health care market via Public-Private Partnership (PPP) in narrowing down the medical resource gaps.

Research Strategy and Research Design

The ontological position is that of objectivism and the epistemological position is that of positivism lending to the research being deductive in nature. The research strategy adopted would be a quantitative approach. A quantitative approach is considered to be best adopted, as it is best suited to measure the correlation between the existing phenomenon and desired developments. The theoretical framework for the research is based on the **Modified Theory of Planned Behaviour (TBP)** wherein the research aims to measure the correlation between the independent variable 'Behavioural Intentions' (the intention of private sectors to participate in PPP model) and the dependent variable 'Behaviour' (the response of private sector to PPP model). The independent variable 'Behavioural Intentions' of the private sector is planned to be established by the following constructs:-

1. Attitude towards Behaviour.

2. Subjective Norm.

3. Perceived Behavioural Control.

4. Facilitating Conditions.

5. Behavioural Intentions.

Descriptive and inferential statistical design would be used to carry out data analysis. Nominal data of perceptions of respondents would be converted to interval data using a Likert scale and various tests like factor analysis, sampling adequacy and normalcy of constructs would be carried out. Hypothesis testing using one sample T test for the each constructs, One Way ANOVA test to ascertain equality of means of the various categories of respondents and Pearson correlation to ascertain the strength of correlation of independent variables. These measurements are expected to enable the study to draw out future contours and required lessons.

Methods to be applied and Data Sources

The data is proposed to be collected in the form of researcher administered questionnaire. The questionnaire would aim to measure the degree of the respondents on a Likert Scale. It is proposed to collect responses from more than 125 respondents, which would include healthcare professionals from military and civil, both, civil servants, armed forces personnel and members of the public. In addition, it is also intended to have interactions with experts on the subject. Collection of data will be undertaken through online mode mostly considering the prevailing restrictions and

threat resulting out of the pandemic. The data analysis would be undertaken using Statistical Package for the Social Sciences **(**SPSS) and other statistical tools.

Chapterisation Scheme

The proposed dissertation research will be chapterised under the following headings.

Chapter I – Introduction. This chapter would introduce the topic broadly and also attempt to include research problem, need for study, research questions, research objectives and research strategy.

Chapter II - Literature Review. This chapter would contain literature review covering the aspects that have been studied in the area and the gaps that exist. It would also bring out as to why the research is useful, necessary, important and valid. It will also have a brief insight about the two typical routes existing for implementation of private sector investment in the health care field. It will cover the theoretical and the conceptual frameworks and the research hypothesis.

Chapter III - Research Design and Methodology. This chapter would contain the Research Design and methodology adopted. In addition, it will cover the sample design, sources of information, tools and techniques of analysis and structure of the study.

Chapter IV - Data Analysis and Inferences. The chapter would contain the Data Analysis and Inferences, results of reliability Tests (for all questions and constructs) and factor analysis. Factor Analysis will be carried out considering that correlation exists between constructs to begin with and later by considering that correlation does not exist. Post that data will be checked for normality. Thereafter, descriptive analysis and main hypothesis testing will be presented by carrying out various statistical tests.

Chapter V - Findings, Conclusion and Recommendations. The last chapter would include the findings, recommendations & conclusion. Before concluding, the findings as brought forth from the statistical analysis of the collected data and the recommendations will be presented.

Bibliography / References.

Appendices.

Conclusion. PPP in healthcare has the potential to resolve the issues and ensure healthcare inclusion for the Indian masses. Starting with smaller projects and driving success for the same can help build credibility and get buy-in from all stakeholders. PPP may bring in resources the government needs to make healthcare available to all the citizens as a sustainable model. It could improve the healthcare system by pooling in the expertise and finances of the private sector with the access and subsidies of the public sector. A research may therefore bring out answers to the questions that probably remain unanswered.

CHAPTER II

LITERATURE REVIEW

Introduction

A Public-private partnership (PPP) is often defined as a long-term contract between a private party and a government agency for providing a public asset or service, in which the private party bears significant risk and management responsibility (World Bank, 2012). It relies on the recognition that public and private sectors each have certain advantages relative to other in performing specific tasks. The responsibilities of the private sector could entail finance, design, construction, operation, management and maintenance of the project (Deloitte 2019).

We would normally witness notice Political , bureaucracy, public health system, private sector, civil society, regulator, patients, development partners as key stake holders. What we generally witness is that the public health system lacks policy driven strategy or lack continuity, if there is a partial will at all. Also, there are no institutional structures to manage the private sector or institutional capacity to design/ contract/ monitor PPPs. On the other hand Private sector is predominantly individual centric, lacks

in grievance redressal system and lack of accredition or quality standards . (Venkat Raman 2009).

Literature Review

Two typical routes exist for the implementation of private sector investment in the healthcare sector namely, privatisation and PPP. Privatisation refers to the transfer of ownership and responsibilities from public services to private capital. It brings competition and market mechanism. Healthcare as public good relates to social responsibility and should be equally accessible to all individuals without limitations. Compared with privatisation, PPP was interpreted as a long-term contractual agreement between a public agency and a private sectoral entity, through which each sector shares the skills, assets, risks, and rewards in the delivery of a service and facility for use of the general public. Few literatures online were perused and the following emerged:-

(a) **Ramani, KV. Mavalankar,D. Patel,A. & Mehandiratta.** (2007) in their paper on 'GIS approach to plan and deliver healthcare services to urban poor: A public private partnership model for Ahmedabad City'. attempts to provide a public private partnership (PPP) model for urban health centres (UHC) in developing countries that can be useful for urban local governments and private service providers willing to enter into meaningful partnerships so as to improve primary healthcare services. Design/methodology/approach – The

research was based on geographical information system methodology to identify suitable locations to address availability, access, affordability and equity concerns and to provide a practical framework for PPP for establishing UHC. The methodology involved survey and mapping of slum communities and private healthcare facilities and in its findings, the research provides intricate details about planning healthcare services for urban poor, operational and managerial aspects of service provision and processes involved in PPP for urban health. The research limitations can be seen that the model is developed and tested.

(b) **Chepatis, A** (2007) in her research paper 'Beyond the Rhetoric: what are True public private partnership?' undertakes an exploratory study of strategic intent, form and function in healthcare PPPs in New York State. It emerges that Cross-sector, or public-private partnerships (PPPs) represent an innovative, and ideally, a uniquely effective way of delivering public programs and services. As varied types of PPPs exist, a fundamental challenge in optimizing the success of PPPs is to understand their complexity and variation. The paper used theory, archival data, and key informant interview data to develop and refine an exploratory typology of PPPs in the specific field of healthcare. Strategic intent, and particularly, its loftiness component, emerged as being an essential characteristic that may define and distinguish PPPs in healthcare. The paper included PPPs from one state only, while most likely, in some way resembling PPPs in other states, may not be the same.

(c) **Visconti,RM. Martiniello, L. and Morea, D.** (2019), in their artcle 'Can Public-Private Partnerships Foster Investment Sustainability in Smart Hospitals?' addresses the relationship between Public-Private Partnerships (PPP) and the sustainability of public spending in smart hospitals. Smart (technological) hospitals represent long-termed investments where public and private players interact with banking institutions and eventually patients, to satisfy a core welfare need. Technology-driven smart hospitals are so complicated that they may require sophisticated PPP. Public players lack innovative skills, whereas private actors seek additional compensation for their non-routine efforts and higher risk. Patient-centered smart hospitals realized through PPP schemes, reshape traditional healthcare supply chains with savings and efficiency gains that improve timeliness and execution of care. The research limitation concerns the failure to apply the proposed model to a case study.

(d) **Strasser, S. Stauber, C. and Shrivastava, R**. (2021) in their research article on 'Collective insights of public-private partnership impacts and sustainability: A qualitative analysis' examine perceptions of PPP model sustainability related to inputs and impacts among a collective network of stakeholders experienced with AIDS relief workforce development, laboratory-system strengthening project implementation in USA. The analysis reveals three dominant themes: PPP impacts, keys of successful collaboration, and logistical challenges and opportunities to enhance sustainability of PPP outcomes in the

future. The paper undertakes non-probable purposive sampling approach and does not yield generalizable results.

(e) **Simonet, D.** (2021) in his paper dealt on 'French Idiosyncratic Health-Care Reforms, Performance Management and Its Political Repercussions'. The paper reminds the application and shortcomings of the concept of New Public Management (NPM) in the French health system. The paper investigates NPM health reforms in France i.e., reforms aimed at containing costs, administrative restructuring implemented, reform idiosyncrasies and their limitations. It attempts to be critical in examining the recentralization of health policy decisions and its impact on care providers and provide an international perspective on reforms. It brings out that Central health authorities regain their authority over health policy decisions, and decentralization was weakened reforms and put priority on the use of yardsticks and also emphasized regulation and competition rejecting public–private partnerships.

(f) **Gerstlberger, W D.** (2012) in the paper 'Outsourcing and concession models as door opener for public-private partnerships in the European health sector?' compares two cases of a Danish and a German hospital attempts to contribute in reducing a relevant research gap i.e., private sector participation in the German health system, in particular, which rarely has been discussed in

international journal publications. The paper assesses the future potential of different private sector participation strategies in health care. The findings show that low-level private sector participation approaches such as outsourcing and concession models remain limited. Further, specialised financing instruments for health care in Denmark and Germany is also limited due to legal restrictions and lesser importance being placed on achieving strategic goals. Furthermore,

existing approaches in the two countries do not necessarily prepare the ground for public-private partnerships.

(g) **Lee, E Y.** (2021) in the research 'Post–COVID-19 Public– Private Public Health Partnerships: A Student's Perspective' relates to COVID-19 in USA revealed the evolving nature of public health as it is becoming more interdisciplinary and adaptational. It conveys that Public health will motivate private companies to invest more in digital health technologies. It will also foster public–private partnerships, innovations, and discourse on ethics and data privacy. Further, it finds out that it will also incentivize more public health students to enter the private sector as data scientists, user experience researchers, user experience designers creating digital health applications, project managers, and consultants resulting in more students in the public sector will work with private companies as public health advisors, epidemiologists, and health directors.

Research Gap. Based on previous literature reviewed it emerged that no relevant research work has ensued in analyzing the intention and behaviour of private

sector participation in Indian Healthcare sector via PPP. All relevant papers at the most brought out the relevance of the model in a small city or state and never covered it in entirety of a nation-state. Some papers brought out the relevance of digital technologies, or of infrastructure contribution from the private sector while few brought out poor application of concepts of new public management. It is felt that the influential factors be looked into from a macro point of view and to what extent they affect the intention and behaviour of private sectors involvement in Indian healthcare service delivery via PPP.

Hypothesis

Hypotheses for the research are formulated as under: -

(a) **Determinants of Private Sector's Behavioural Intention (BI) to Participate in Indian Healthcare Market (IHM) via PPP**.

(i) **Attitude towards Behaviour (AB)** is defined as feeling on the target behaviour and could be regarded as individuals' affective reaction on the outcome of assuming a particular behaviour (Paetzold, F. (2014, December). Boyne considered that the private sector is driven by profit motives and self-interest (Boyne, G. 2002). Thus, investment benefits contribute to the decision-making process (Haley, R. (1968); the existing research indicates that the public sector often increases the return of investment to enhance the attractiveness of PPP

projects for the private sector (Zhang, S. (2016). Regarding the healthcare domain, most private enterprises participate in healthcare service delivery for profit as emphasised by Mackintosh and his colleagues (Mackintosh, Selvaraj, (2016). The main concern of private equity investors involved in PPP hospitals was reliable revenue (A. Akintoye, and E. Chinyio 2005). In IHM, non-public healthcare services tend to be provided in large cities owing to the considerable consuming market (Gusmano 2016). In addition, Chinese scholars claimed that the overemphasis on public welfare could frustrate the intention of private sector investment in IHM via PPP. Therefore, the following hypothesis is stated.

Research Hypothesis 1 (H1) ***AB (Attitude towards Behaviour) has significant positive effect on BI (Behavioural Intention).***

(ii) **Subjective Norm (SN)** is referred to as the behavioural perception of a decision-maker from important peers or groups (Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. 2003). In IHM, the public sector (governments and public hospitals), consumers, and the private sector (private hospital, construction companies pharmaceutical companies, real estate developers, and asset management companies) are three typical stakeholders whose preference is crucial to each participant's behaviour. The private sector decides whether to participate in healthcare service delivery via PPP partly in consideration of social image and public reputation (Yang, J., Song, L., Yao, X., Cheng, Q., Cheng, Z., & Xu, K. 2020). Furthermore, researchers concluded that a positive correlation

exists between SN and BI (Kan M.P.H., Fabrigar L.R. (2017). China's PPP Center reported a booming trend in Health Care Market; that is, the number of commercial PPP projects increased from 150 to 171 in two months **(**China Public Private Partnerships center. 2022). Considering that the selection of investment objective from peers could provide an indirect suggestion into the decision-making process of the private sector, the imitation effect by former private investors in Healthcare Market has influenced others' future behaviour. Thus, the following hypothesis is stated.

Research Hypothesis 2 (H2) ***SN (Subjective Norm) has significant positive effect on BI (Behavioural Intention).***

(iii) **Perceived Behavioural Control (PBC)** is a perception, which reflects the resources and barriers of an expected behaviour (Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D 2003). It exhibits the confidence of controlling the resource, which is needed by the private capital. To improve attractiveness, multiple barriers should be removed to establish an easy access by NHC, whilst private investors participate in elderly care and healthcare service delivery, including free provision for certain procedures (Yang, J., Song, L., Yao, X., Cheng, Q., Cheng, Z., & Xu, K. 2020). Existing research emphasises that a perceived reduced impediment increases the willingness to generate private participation (Zheng S, Xu K, He Q, Fang S, Zhang L. 2018). Therefore, the following hypothesis is stated.

Research Hypothesis 3 (H3) ***PBC (Perceived Behavioural Control) has***

significant positive effect on BI (Behavioural Intention).

(iv) **Facilitating Conditions (FC)** could be defined as objective factors in an environment to support individual's actual behaviour (Thompson, R. L., Higgins, C. A., & Howell, J. M. 1991). Favourable measures in a situational context from organisational support could motivate a positive belief in behavioural intention (BI) [Steele R, Lo A, Secombe C(2009)]. Certain opportunities with potential benefits provided by public establishment contribute to the participation in social infrastructure delivery of private capital. Private capital has been largely encouraged by this favourable circumstance (Altın, H. 2021). Thus, the following hypothesis is stated.

Research Hypothesis 4 (H4) ***FC (Facilitaing Conditionsl) has significant positive effect on BI (Behavioural Intention).***

(b) **Determinants of the Private Sector's Behaviour to Participate in IHM via PPP**. General theory believes that BI is determined by AB, SN, and PBC. This study brings FC as a complementary variable. The framework based on theory of planned behavior (TPB) could be used on investment behaviour to explain investors' decision-making process (Adam, A., Shauki, E., 2012). Intention is the closest determinant for behaviour (Kan M.P.H., Fabrigar L.R. (2017). Researchers have considered that BI maintains a significantly positive

influence on usage [Tsai, CH. 2014]. Therefore, a strong BI raises the possibility of the actual behaviour to be performed (Ajzen, I. 1991). Thus, the following hypothesis is stated.

Research Hypothesis 5 (H5) ***BI (Behavioural Intention) has significant positive effect on Behabiour.***

Scope / Limitations

The research study intends to evaluate using the Theory of Planned Behaviour (TMB) the relationship effects based on attitudes, subjective norms, perceived behavioural control and behavioural intention. Thus, to build a research model with good explanatory effect, facilitating conditions (FC) as a main indicator are identified and introduced in the modified TPB model (Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. 2003). The research, AB, SN, PBC, FC, BI, and B are regarded as latent variables in the structural model (Figure 1). The study in the end would attempt help us understand intention and behaviour of private sector in spreading its reach in Indian Healthcare delivery sector so as to help stakeholders make rational policy decisions.

Theoretical Framework

Theoretical Model Based on Modified Theory of Planned Behaviour (TBP).

TPB was developed by Ajzen as an expansion of theory of reasoned action (TRA) (Ajzen I. 1985). Ajzen claimed that personal behaviour is affected by voluntary and various factors. TRA could not reasonably explain involuntary behaviour. Thus, Ajzen put forward three indicators to analyse the decision- making process and

individual action, namely, attitude towards behaviour (AB), subjective norm (SN), and perceived behavioural control (PBC). These three factors could affect the behavioural intention (BI) and then behaviour (B) (Ajzen I. 1985).

In 1995, Taylor and Todd built an extended model, which introduced perceived usefulness as a critical factor based on the TPB model (Taylor, S. and Todd, P.A. 1995). These scholars believed that the extended model could compensate the measurement of a certain group's feeling towards a concept.

TPB was originally proposed to investigate a user's willingness to accept a certain technology. With its wide prevalence, TPB was also applied in numerous fields that analyse human behaviour (Yousafzai, S. Y., Foxall, G. R., & Pallister, J. G. 2010). Several studies were implemented on the BI of the private sector. East was the earliest researcher who used behaviour theory in the field of private investment (East, R. 2002). Paetzold and Busch developed a framework based on TPB to understand the decision-making process of the private sector towards sustainable investment (Paetzold, F. 2014). Malaysian scholars applied a modified TPB model, which explained the effect of the private sector's intention and attitude to participate in socially responsible investments (Adam, A. A. Shauki, E. R 2014). In addition, TPB could be considered a framework to evaluate the willingness of private capital to invest in normal PPP projects and analyse the connection between the private sector and PPP performance (Zhang Y, Gu J, Shan M, Xiao Y, Darko A (2018)

Conceptual Framework

Considering the different approaches of PPP modality and policy circumstance of Indian Healthcare Market, the objective environment and competitive status should be emphasised whilst the private sector participates in Indian Healthcare Market via PPP. Thus, to build a research model with good explanatory effect, facilitating conditions (FC) as a main indicator are identified and introduced in the modified TPB model [78]. In our research, AB, SN, PBC, FC, BI, and B are regarded as latent variables in the structural model (Figure 2.1).

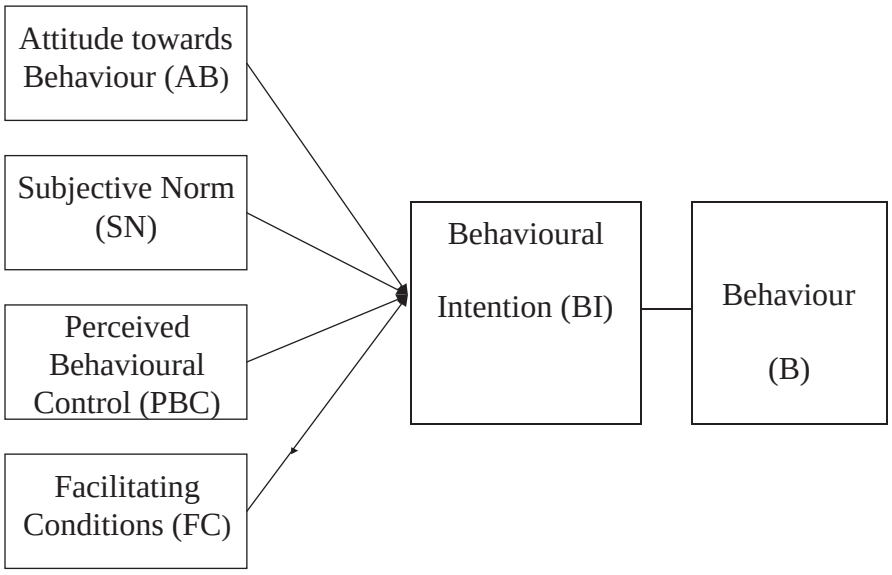
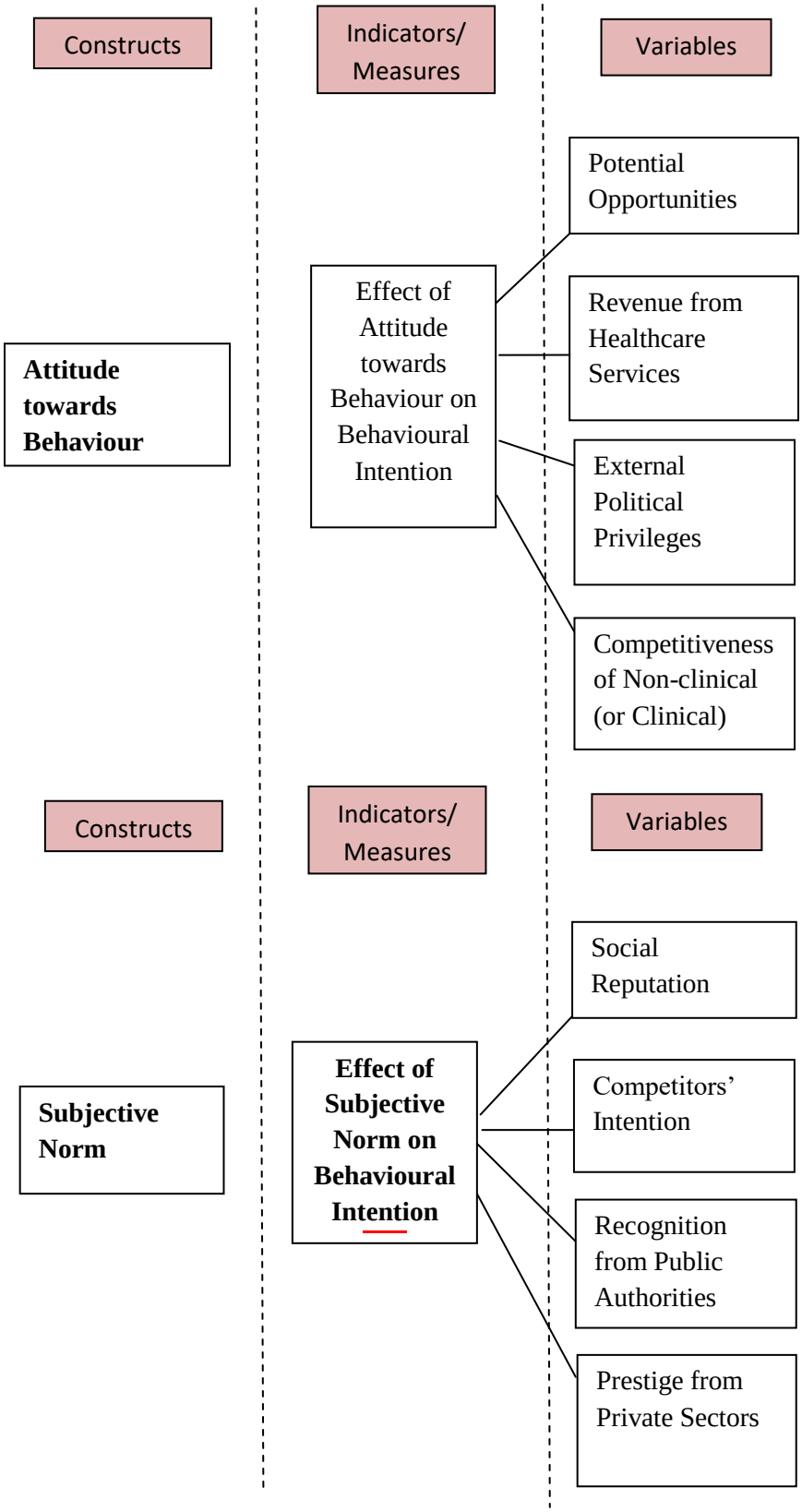
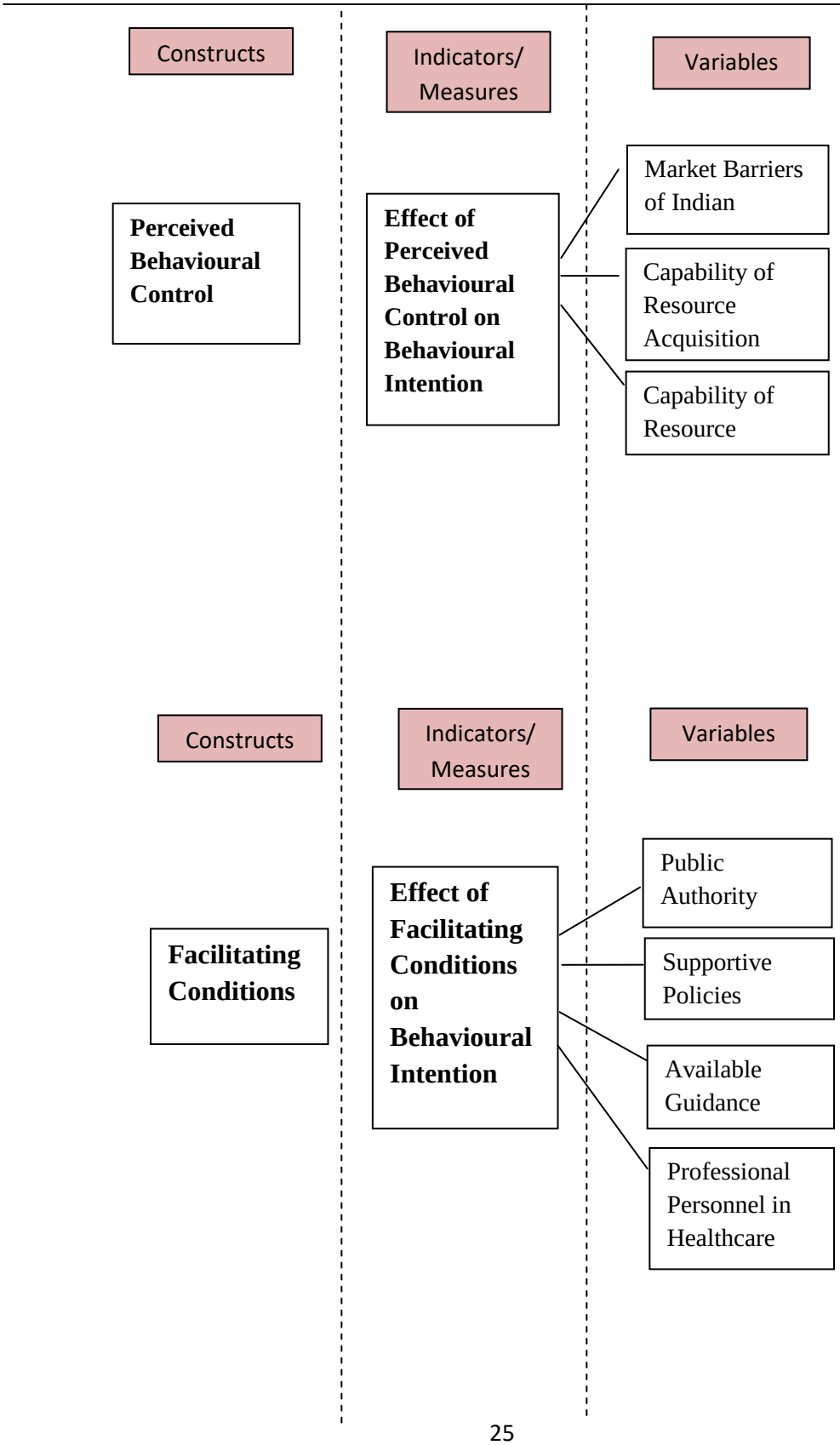
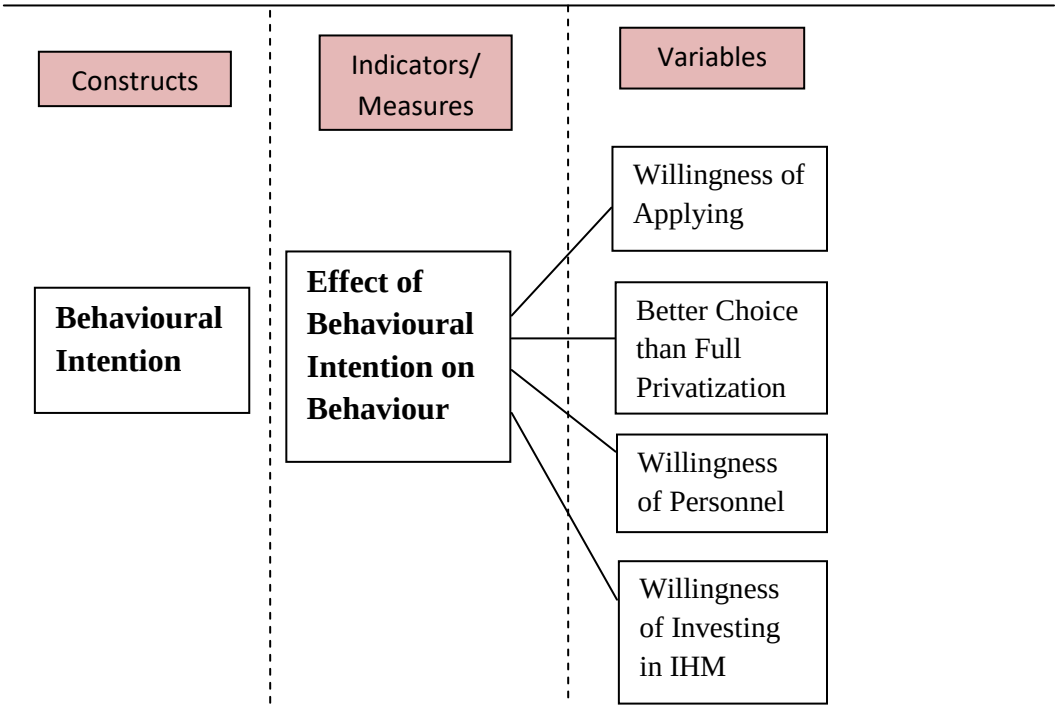


FIGURE 2.1: Structural model based on the modified TPB.

Table 2.1 **Operationalisation of Constructs**

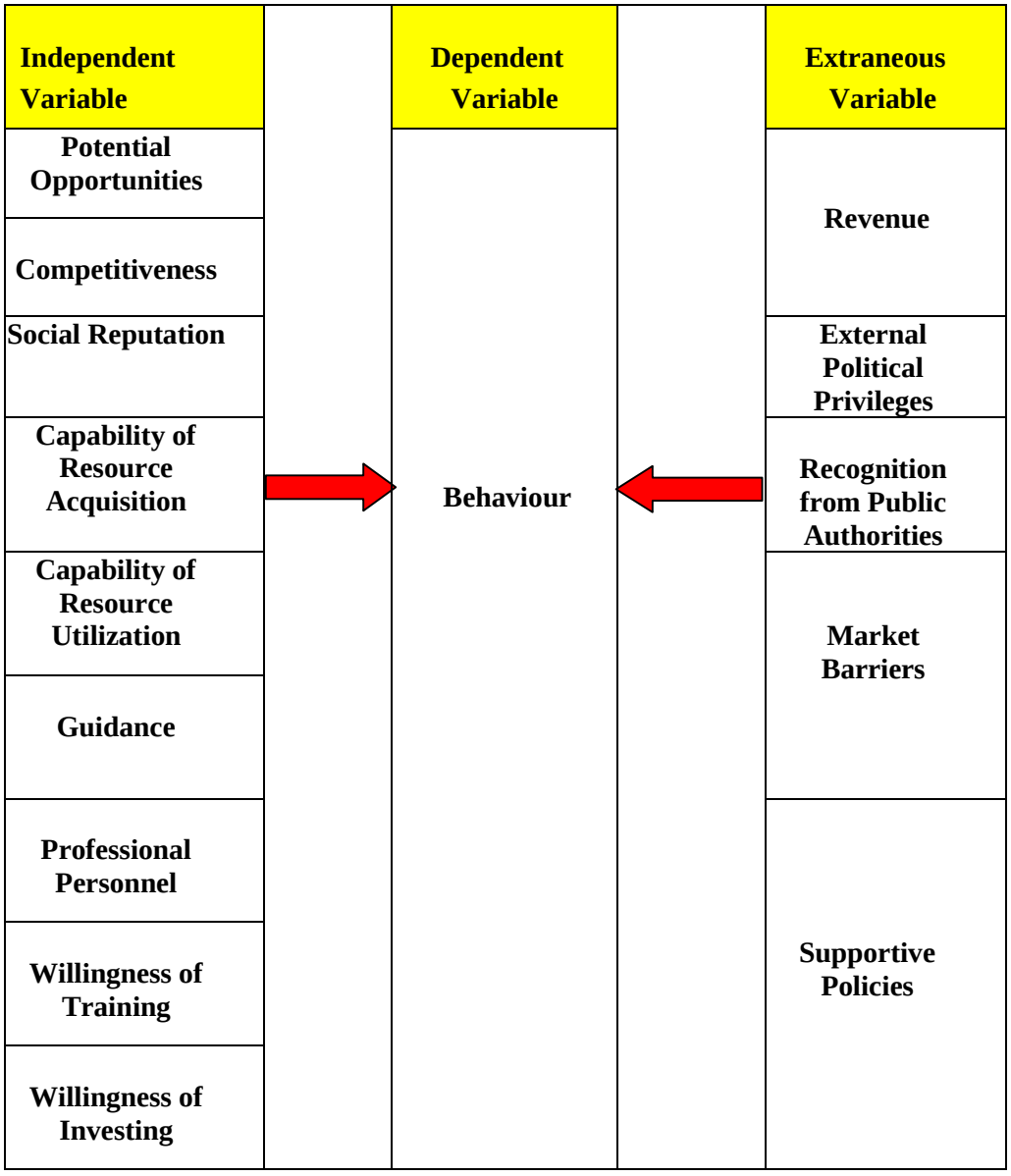



Constructs
Indicators/ Measures
Variables
Perceived Behavioural Control
Effect of Perceived Behavioural Control on Behavioural Intention
Market Barriers of Indian
Capability of Resource Acquisition
Capability of Resource
Constructs
Indicators/ Measures
Variables
Facilitating Conditions
Effect of Facilitating Conditions on Behavioural Intention
Public Authority
Supportive Policies
Available Guidance
Professional Personnel in Healthcare


Constructs
Indicators/ Measures
Variables
Behavioural Intention
Effect of Behavioural Intention on Behaviour
Willingness of Applying
Better Choice than Full Privatization
Willingness of Personnel
Willingness of Investing in IHM

Relationships. The conceptual framework for the study is illustrated in Figure below: -

Table 2.2 Conceptual Framework



CHAPTER III

RESEARCH DESIGN

Introduction

This chapter describes the formulation of a research design, methodology adopted to achieve the stipulated goals for the study, the sample framework and the measuring instrument for this study. The purpose of the structured questionnaire was to obtain primary data from a sample of respondents across the country. Survey was conducted using online mode. The data generated by the study was analysed using a statistical program.

Research Strategy

The research adopted a quantitative approach using cross-sectional descriptive design. The strategy followed was to test hypothesis based on data analysis and objectivism as the ontological position and positivism as the epistemology, with an aim to establish social reality.

The data was collected in the form of researcher administered questionnaires, collected through responses from doctors, medical professionals, officers from the Indian Armed Forces, All India Civil Services and the public.
A quantitative approach was considered best suited to measure the correlation

between the variables pertaining to Behavioural Intention and Behaviour of private sector to adopt PPP model in IHM. These measurements enabled the extent of connection to be established.

Research Problems.

1. There are shortcomings in the Indian health care system across the length & breadth of country. Public sector is unable to penetrate and deliver required standards.

2. Private sector participation is not ample enough and best / majorly witnessed only in urban centres.

3. Inadequacies in availability & quality remain challenges to be overcome.

The benefits and challenges of PPP will be difficult to ignore for Indian Healthcare Management (IHM) participators during the decision-making process. Thus, determining key factors for the intention of the private sector to participate in IHM via PPP modality is necessary. This study aims to examine the influential factors that affect the intention and behaviour of private sector involvement in IHM via PPP. This study could expand the research scope of intention and behaviour in IHM for the private sector and also develop an

analytical framework as reference for other IHM stakeholders to make rational selections.

Research Questions

Research Questions. Evaluating Public-Private Partnership in responding to health care service needs is a complex process involving many factors both tangibles and intangibles. As brought out earlier the need translates to the following questions:

1. What is the influence exercised by the Private Sector in Indian Health Care Market?

2. What is the relative importance of the Private Sector in Indian Health Care Market?

3. What is the intent of the Private Sector in Indian Health Care delivery?

4. Examine the intention and behaviour of the Private Sector in joining the Public Private Partnership.

5. Examine the approach of the Private Sector in reducing gaps.

Research Objectives.

1. To examine the influence and relative importance of the private sector in Indian health care service delivery and assess its intention and behaviour in getting into a public - private partnership**.**

2. To analyse the approach of private sector in the Indian health care market via public - private partnership (PPP) in reducing the gaps.

Research Hypotheses

Hypotheses for the research are formulated as under: -

6. Research Hypothesis 1 (H1). AB Attitude towards Behaviour) has significant positive effect on BI (Behavioural Intention).

7. Research Hypothesis 2 (H2). SN (Subjective Norm) has significant positive effect on BI (Behavioural Intention).

8. Research Hypothesis 3 (H3). PBC (Perceived Behavioural Control) has significant positive effect on BI (Behavioural Intention).

9. Research Hypothesis 4 (H4). FC (Facilitating Conditions) has significant positive effect on BI (Behavioural Intention).

10. Research Hypothesis 5 (H5). BI (Behavioural Intention) has significant positive effect on Behaviour (B).

Sampling Design

Study Population. The target population of the study included doctors, medical professionals, Officers from the Indian Armed Forces, civil services and public personnel.

Sampling Technique. Combination of convenience and judgement sampling method was adopted to select the sample respondents.

Sample Size. The sample size of the study was 140.

Observational Design

Research Instrument.

Questionnaire. The questionnaire was designed to capture the perception of the sample to measure various factors identified for the constructs AB, SN, PBC, FC and BI. The questionnaire included 29 questions. The questionnaire consisted of three sections as follows:

First Section. Statements 1 to 27 to measure perception of sample on Likert scale. Five statements were used to measure the construct 'AB', four statements

measured construct ‘SN’, three statements measured construct ‘PBC’, four statements measured construct ‘FC’ and eleven statements measured construct ‘BI’.

Second Section. One statement was used to rank order the preferences (1 to 5, with 1 being most important) on ‘Benefits of Public Private Partnership (PPP) in Indian Healthcare Service delivery’.

Third Section. One open ended question to solicit comments/ suggestions/ recommendations.

Fourth Section. Demographic information for Experience (less than 10 years/ 10 to 20 years/ more than 20 years) and Occupation (Armed Forces Personnel (other than Doctors or Surgeons)/ Doctor or Surgeon from Armed Forces (Army/ Navy / Air Force) / Personnel from Indian Civil Services/ Doctors / Surgeons / other health professionals/ Public / others).

Five point Likert scale (1–5) was used, with scores ranging from 1 for ‘Strongly Disagree’, 2 for ‘Disagree’, 3 for ‘Neutral’, 4 for ‘Agree’ and 5 for ‘Strongly Agree’.

Interactions. To obtain world view and expert opinions on the subject, informal interactions with different stakeholders representing various categories were conducted during different phase of the study.

Data Collection Method. The observations were collected through a research administered questionnaire. 140 valid responses were considered for the Questionnaire.

Primary Data. The data was collected primarily through questionnaires, consisting of close-ended questionnaire (on five point Likert Scale and rank ordering) and one open-ended question. Collection of data was undertaken through both offline and online mode. Informal interactions with various stakeholders were also undertaken.

Secondary Data. Secondary data was collected through the literature available in the open source (books, periodicals, journals, concept papers and research papers) pertaining to the Public Private Partnership and Healthcare.

Statistical Design

Data Analysis Methods. Data was analysed using IBM® SPSS® Statistics (Ver 23) tools. Details of the Descriptive and Inferential Statistical undertaken are as follows:-

Descriptive Statistical Design. The descriptive statistical analysis was primarily carried out with the aim of determining the Mean and Standard Deviation (SD) and frequencies of various variables which would describe and characterize the population. Both textual and graphic analysis was undertaken. Relevant graphs, tables and charts/diagrams have been made and analyzed.

Inferential Statistical Design. The inferential statistical plan included the following statistical tests/ techniques:-

(a) Factor Analysis and scree plot to carry out confirmatory categorization of constructs/factors and to test the construct validity in questionnaires.

(b) Descriptive Statistics of variables.

(c) Test of Reliability and Sampling Adequacy, Reliability and Normalcy of the constructs.

(d) Statistical Estimation to determine the population parameters.

(e) Hypothesis Testing using One Sample T Test.

(f) One Way ANOVA to ascertain the equality of means/ proportion in the data with respect to individual variables of various categories of respondents.

(g) Identifying the dominant causes for 'Benefits of Public Private Partnership (PPP) in Indian Healthcare Service delivery' by the use of rank order question.

(h) Textual Analysis to identify the response to an open ended statement/ question.

(j) Correlation analysis to ascertain the strength of correlation amongst the constructs.

Operational Design

The operational design of this research was as follows:-

(a) Survey was undertaken through both offline and online mode over a period of one month during Jan 2022.

(b) Interactions with various stakeholders were conducted during different phases of the research.

(c) Final report was submitted in Mar 2022.

Reliability, Validity and Replicability. Following measures were taken to improve reliability, validity and replicability of the research:-

(a) **Anonymity Guarantee**. All respondents were assured that their identity would not be reflected anywhere in the research and their anonymity will be held in confidence.

(b) **Expert Feedback**. To enhance reliability, feedback from experts on the subject was taken through informal interactions at various stages of the research and before finalization of the questionnaire.

(c) **Large Sample Size**. The large sample size (**n=140**) minimized sampling error.

CHAPTER IV

DATA ANALYSIS AND INFERENCES

Introduction

This chapter includes the analysis of the data originating from the structured questionnaire presented in narrative, graphical and tabular form. The analytical results form the basis of findings which are summarised. The conclusions drawn are discussed, indicating how the research objectives have been met.

Constructs. The conceptual framework derived from the theoretical framework identified five constructs as follows:

(a) **Construct 1:** Effect of Attitude towards Behaviour on Behavioural Intention.

(b) **Construct 2**: Effect of Subjective Norm on Behavioural Intention.

(c) **Construct 3**: Effect of Perceived Behavioural Control on Behavioural Intention.

(d) **Construct 4**: Effect of Facilitating Conditions on Behavioural Intention and Behaviour.

(e) **Construct 5**: Effect of Behavioural Intention on Behaviour.

Research Hypotheses. The research hypotheses formulated after review of literature are reiterated as follows:-

(a) **Research Hypothesis 1 (H1)**. AB (Attitude towards Behaviour) has significant positive effect on BI (Behavioural Intention).

(b) **Research Hypothesis 2 (H2)**. SN (Subjective Norm) has significant positive effect on BI (Behavioural Intention).

(c) **Research Hypothesis 3 (H3)**. PBC (Perceived Behavioural Control) has significant positive effect on BI (Behavioural Intention).

(d) **Research Hypothesis 4 (H4)**. FC (Facilitating Conditions) has significant positive effect on BI (Behavioural Intention).

(e) **Research Hypothesis 5 (H5)**. BI (Behavioural Intention) has significant positive effect on Behaviour (B).

Data Analysis

The data analysis has been carried out using the SPSS Software (IBM SPSS Statistics Ver 25) under the following major heads:-

(a) Sampling Adequacy, Factor Analysis, reliability analysis for questionnaire.

(b) Test of Normality for all constructs.

(c) Validation of Hypothesis using One Sample T-Test for each construct.

(d) One-way ANOVA to ascertain equality of means/proportions in the responses for all constructs with respect to Experience and Occupation of the respondents.

(e) Pearson correlation to ascertain the strength of correlation of independent variables (AB, SN, PBC and FC) with dependent variable BI.

Survey Instrument Analysis

The survey questionnaire comprising of 28 questions was designed for the purpose. 27 questions were on Likert scale and one was a rank order question. The Questionnaire is attached as **Appendix A**. A total of 140 responses were received to the questionnaire.

Adequacy of Instrument (KMO and Bartlett's Test). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.871, much above the acceptable 0.6, indicating reasonable adequacy of the sample size. The Bartlett's test of Sphericity was found highly significant (χ^2 **(351) = 2034.931, p < 0.05),** as given in figure 4.1.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.871
Bartlett's Test of Sphericity	Approx. Chi-Square	2034.931
	df	351
	Sig.	.000

Figure 4.1 : Adequacy of Instrument

Reliabillity Test

(a) **Instrument Reliability**. The instrument Reliability was ascertained using Cronbach's Alpha to measure the internal consistency. The Cronbach's Alpha value of **0.920** indicated good reliability and consistency of the questionnaire comprising of 27 questions as shown in Table 4.2 below:-

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.915	.920	27

Figure 4.2 : Reliability Statistics (Instrument)

(b) **Construct Reliability**. The reliability and internal consistency of all five constructs were ascertained through Cronbach's Alpha and the values indicated adequate internal consistency of the constructs, as given below in figures 4.3 To 4.7:

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.753	.769	5

Figure 4.3 : Reliability Statistics - Construct 1

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.882	.882	4

Figure 4.4 : Reliability Statistics - Construct 2

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.601	.624	3

Figure 4.5: Reliability Statistics - Construct 3

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.738	.733	4

Figure 4.6 : Reliability Statistics - Construct 4

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.807	.813	11

Figure 4.7 : Reliability Statistics - Construct 5

Factor Analysis

A total **140** responses were received on the Questionnaire comprising27 questions on likert scale, one rank order question and two Demographic details questions. Scree Plot is as below in Figure 4.8. The details of Factor Analysis with Rotated Component Matrix are attached as **Appendix B**.

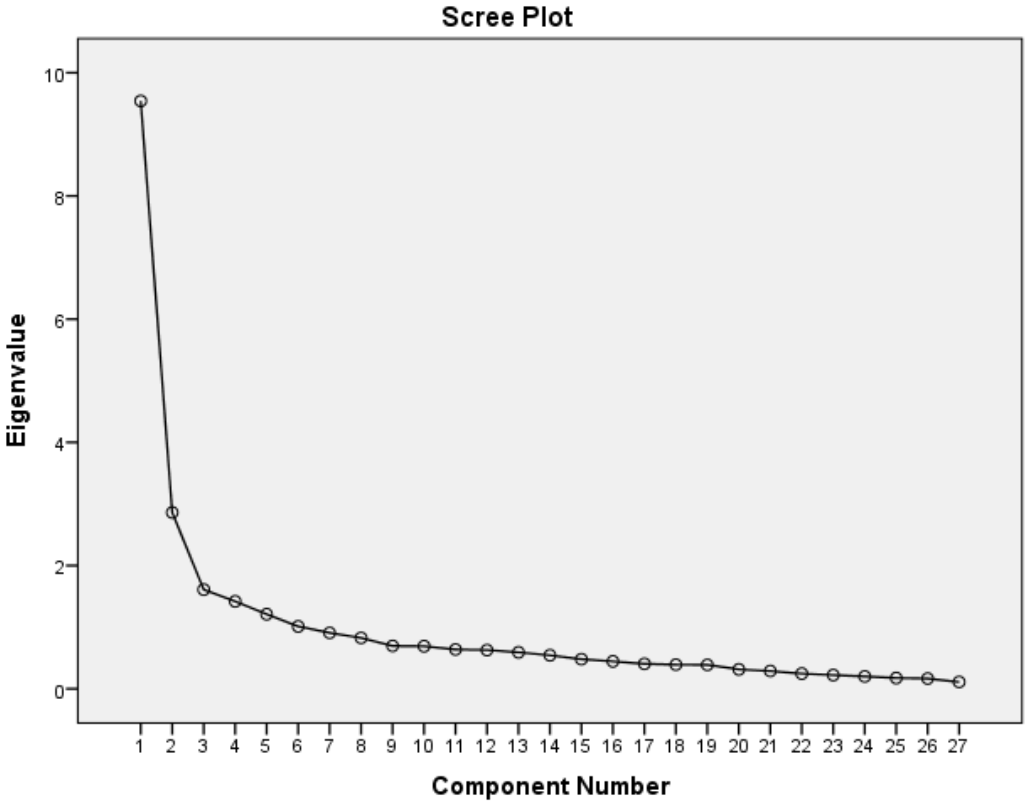


Figure 4.8: Scree Plot – Survey Instrument

Response Distribution

Responses. A total of 140 responses were received to the questionnaire. The same is placed as Appendix C. The same were checked for completeness and validity. All 140 responses were found valid and were used for the subsequent analysis.

Demographic Description. The responses received can be segmented demographically based on the following main criteria:-

(a) **Occupation**. Five different categories as given below were used for categorization of the respondents. The details of the respondents are as given in figure 4.9 and 4.10.

(i) Armed Forces Personnel (other than Doctors / Surgeons).

(ii) Doctor / Surgeon from Army / Navy / Air Force.

(iii) Personnel from Indian Civil Services.

(iv) Doctors / Surgeons / other health professionals.

(v) Public / others.

Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Armed Forces Personnel (other than Doctors / Surgeons)	58	41.4	41.4	41.4
	Doctor / Surgeon from Army / Navy / Air Force	23	16.4	16.4	57.9
	Personnel from Indian Civil Services	14	10.0	10.0	67.9
	Doctors / Surgeons / other health professionals	23	16.4	16.4	84.3
	Public / others	22	15.7	15.7	100.0
	Total	140	100.0	100.0	

Figure 4.9 : Demographic Details based on Occupation

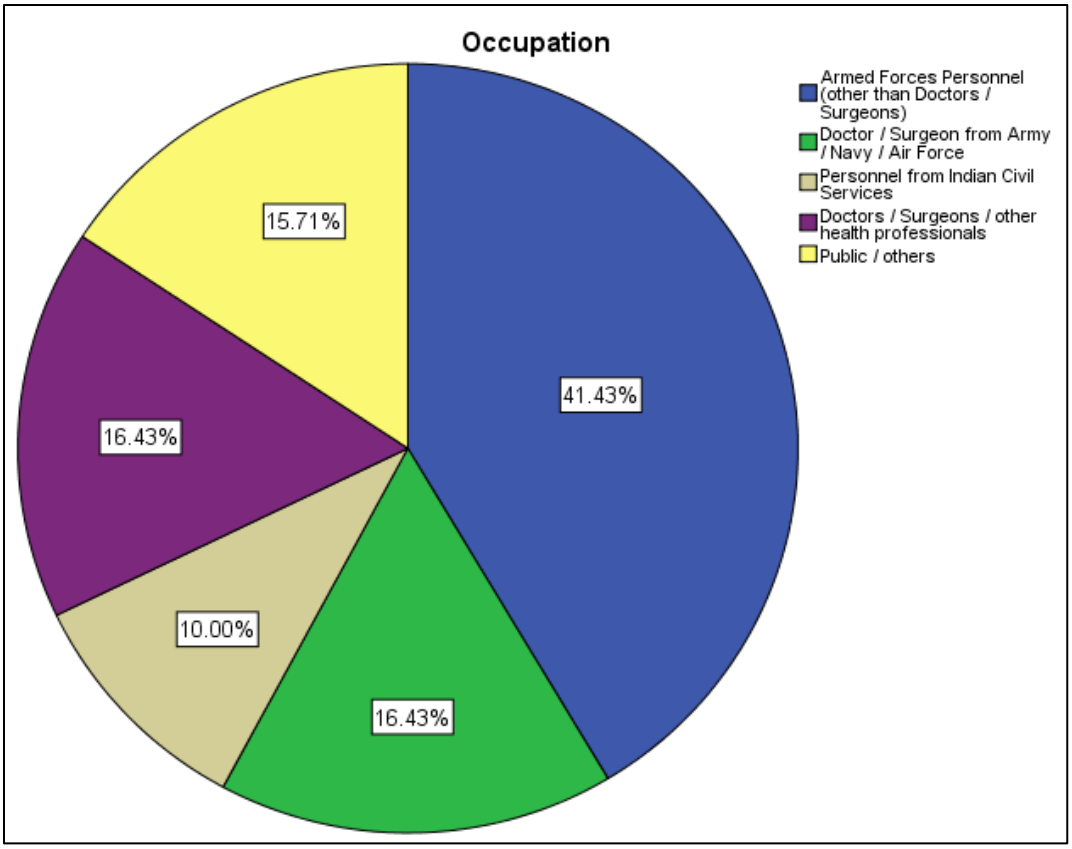


Figure 4.10 : Pictorial Depiction of Demographic Details based on Occupation

(b) **Experience**. Three different categories for experience as given below were used for categorization of the respondents. The details of the respondents are as given in figure 4.11 and 4.12.

(i) Upto 10 years.

(ii) 10 to 20 years.

(iii) More than 20 years.

Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Upto 10 Years	28	20.0	20.0	20.0
	10 to 20 Years	28	20.0	20.0	40.0
	More than 20 Years	84	60.0	60.0	100.0
	Total	140	100.0	100.0	

Figure 4.11: Demographic Details based on Experience

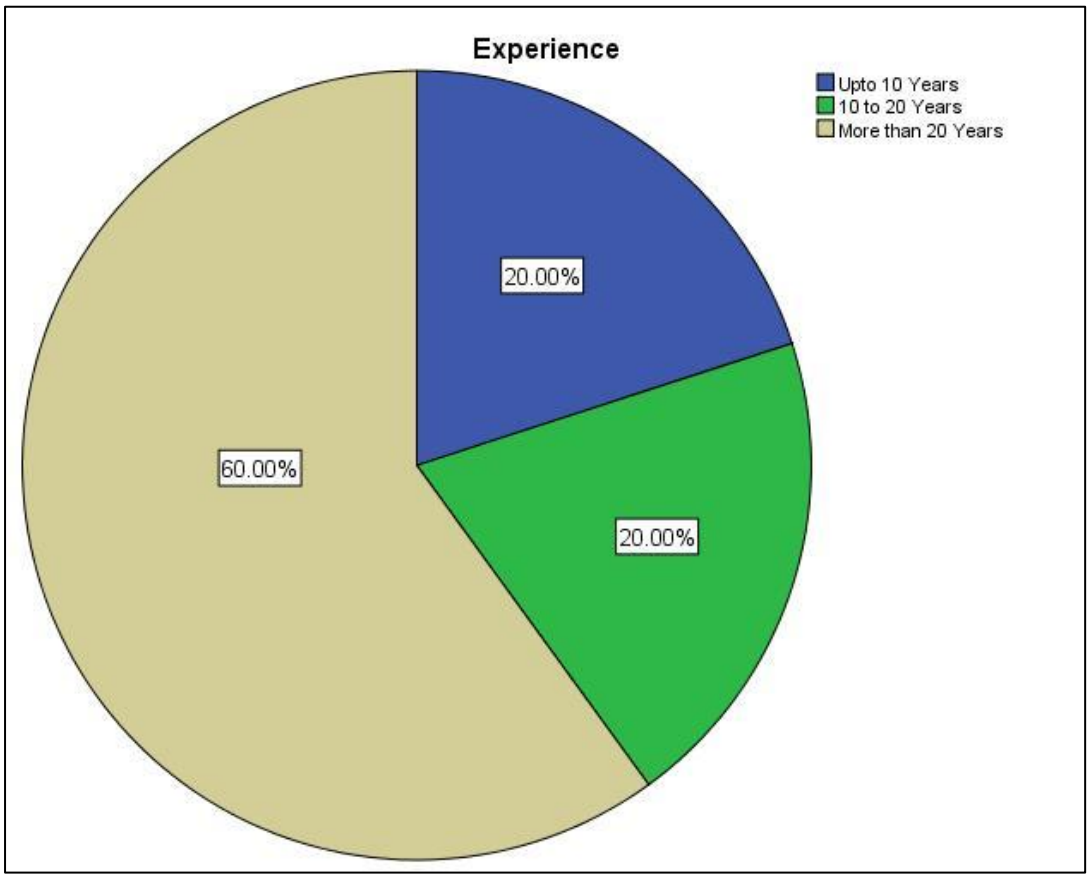


Figure 4.12: Pictorial Depiction of Demographic Details based on Experience

(c) **<u>Breakdown of Responses based on Experience and Occupation</u>**.

Breakdown of responses based on experience and occupation are as given below in figure 4.13 and 4.14.

Occupation * Experience Crosstabulation

Count

		Experience			Total
		Upto 10 Years	10 to 20 Years	More than 20 Years	
Occupation	Armed Forces Personnel (other than Doctors / Surgeons)	0	7	51	58
	Doctor / Surgeon from Army / Navy / Air Force	5	10	8	23
	Personnel from Indian Civil Services	0	1	13	14
	Doctors / Surgeons / other health professionals	18	2	3	23
	Public / others	5	8	9	22
Total		28	28	84	140

Figure 4.13 : Breakdown of Responses based on Experience and Occupation

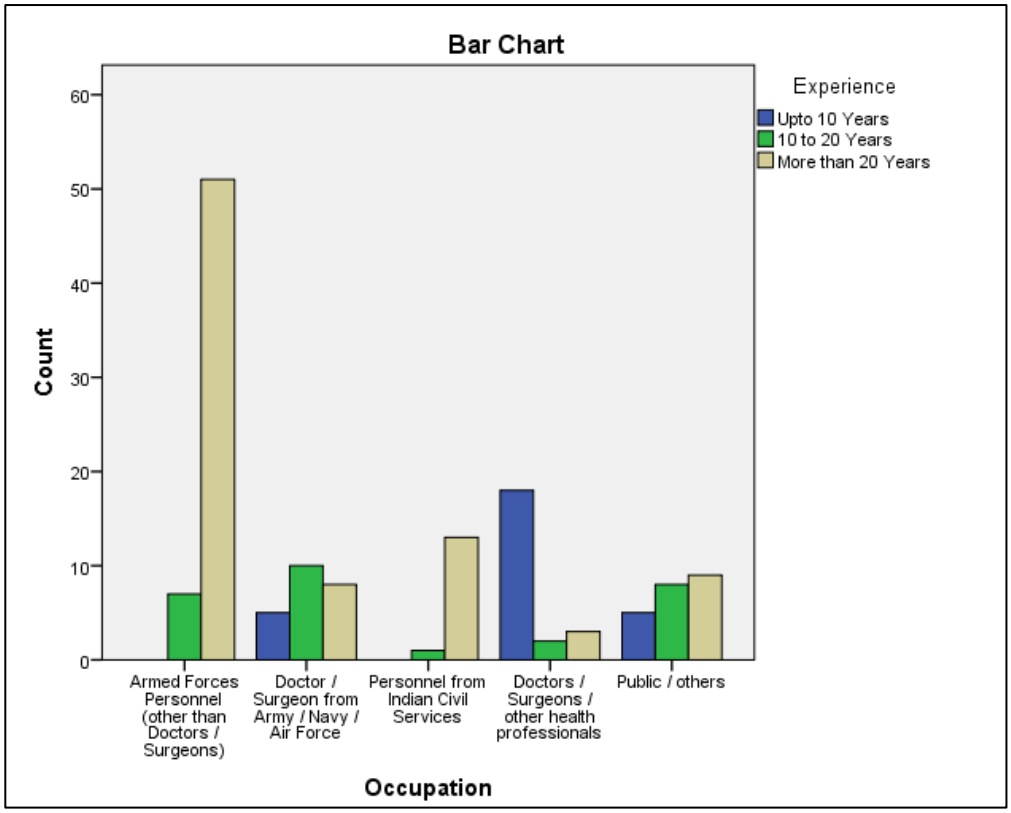


Figure 4.14 : Pictorial Depiction of Responses based on Experience & Occupation

Test of Normality of Constructs

Shapiro Wilks test for normality was performed (df=140) to ascertain normality of the sample. The five summated Likert variables denoting the Constructs were examined for Normality. The results obtained are as depicted in figure 4.15. The test was statistically not significant (p=.281) for Construct 5 (BI) indicating that the responses were normally distributed. The test was statistically significant (p=0.000) for four constructs (AB, SN, PBC and FC), indicating that responses were not normally distributed. Further analysis of histogram, Q-Q plot and box plot was carried out for four constructs to qualitatively ascertain the normality of constructs.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
CONST1_AB	.157	140	.000	.956	140	.000
CONST2_SN	.291	140	.000	.875	140	.000
CONST3_PBC	.150	140	.000	.948	140	.000
CONST4_FC	.119	140	.000	.977	140	.020
CONST5_BI	.068	140	.200*	.988	140	.281

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Figure 4.15 : Test of Normality for Constructs

Construct 1 – AB (Attitude towards Behaviour). Shapiro Wilk test for normality was performed (df=140) to ascertain normality of the sample. Descriptive statistics for the construct was as given in figure 4.16. The test was statistically significant (p<0.05) hence the sample is not ideally normally distributed (Refer figure

4.15). However, relatively low values of skewness (.525) and kurtosis (.108) indicate approximate normal distribution. Also, analysis of histogram (figure 4.17), Q-Q Plot (figure 4.18), Detrended Normal Q-Q Plot (figure 4.19) and boxplot (figure 4.20) qualitatively ascertains near-normality of the construct 'AB (Attitude towards Behaviour)'.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
CONST1_AB	140	1.00	4.20	2.4500	.69453	.525	.205	.108	.407
Valid N (listwise)	140								

Figure 4.16 : Descriptive Statistics – Construct 1 (AB)

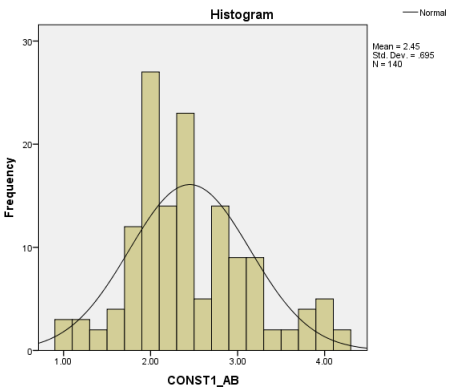


Figure 4.17 : Histogram Construct 1 (AB)

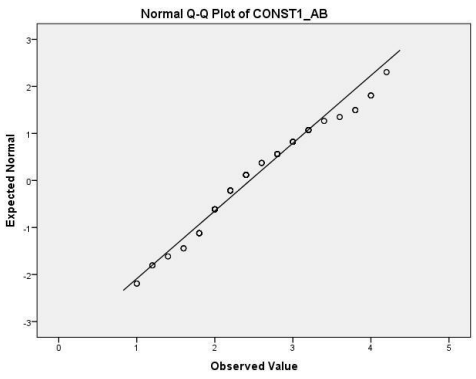


Figure 4.18 : Normal Q-Q Plot Construct 1 (AB)

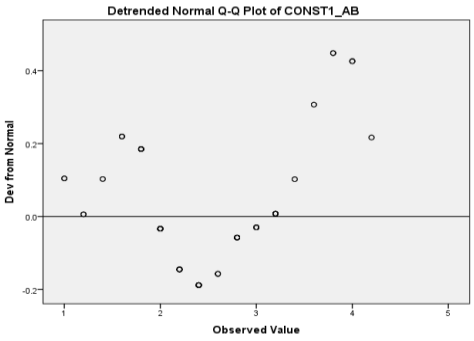


Figure 4.19 : Detrended Normal Q-Q Plot Construct 1 (AB)

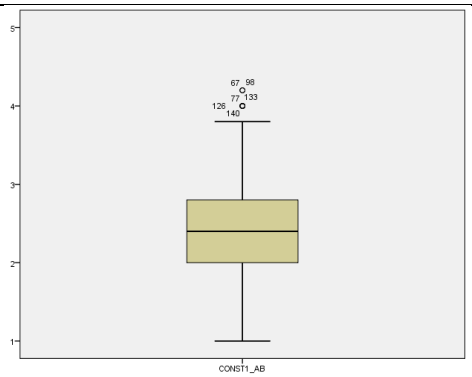


Figure 4.20 : Box Plot Construct 1 (AB)

Construct 2 – SN (Subjective Norm). Shapiro Wilk test for normality was performed (df=140) to ascertain normality of the sample. Descriptive statistics for the construct was as given in figure 4.21. The test was statistically significant ($p<0.05$) hence the sample is not ideally normally distributed (Refer figure 4.15). However, relatively low values of skewness (.997) and kurtosis (.639) indicate approximate normal distribution. Also, analysis of histogram (figure 4.22), Q-Q Plot (figure 4.23), Detrended Normal Q-Q Plot (figure 4.24) and boxplot (figure 4.25) qualitatively ascertains near-normality of the construct 'SN (Subjective Norm)'.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
CONST2_SN	140	1.00	4.00	2.1518	.71262	.997	.205	.639	.407
Valid N (listwise)	140								

Figure 4.21 : Descriptive Statistics – Construct 2 (SN)

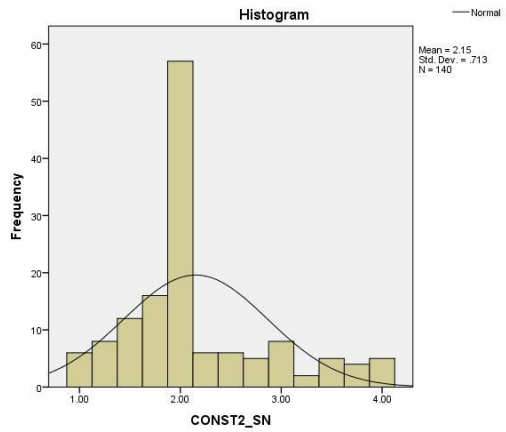


Figure 4.22 : Histogram Construct 2 (SN)

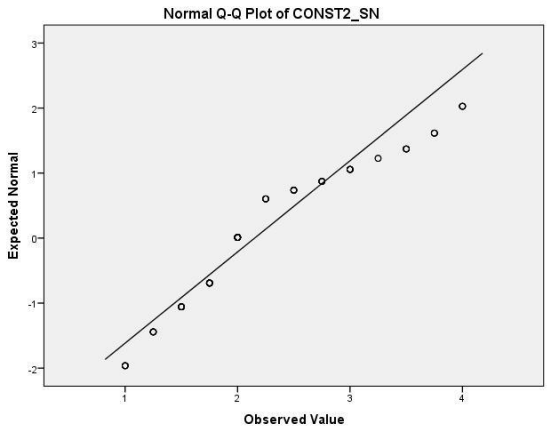


Figure 4.23 : Normal Q-Q Plot Construct 2 (SN)

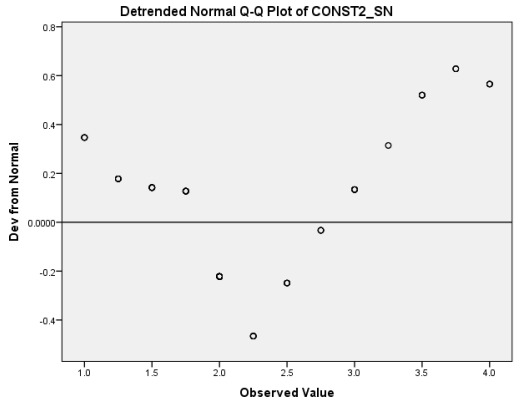


Figure 4.24 : Detrended Normal Q-Q Plot Construct 2 (SN)

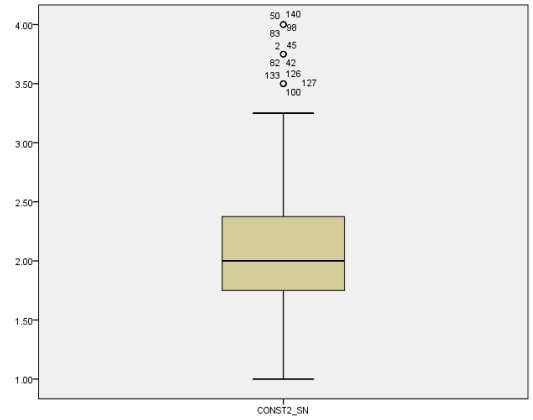


Figure 4.25 : Box Plot Construct 2 (SN)

<u>Construct 3 – PBC (Perceived Behavioural Control)</u>. Shapiro Wilk test for normality was performed (df=140) to ascertain normality of the sample. Descriptive

statistics for the construct was as given in figure 4.26. The test was statistically significant ($p<0.05$), hence the sample is not ideally normally distributed (Refer figure 4.15). However, relatively low values of skewness (.384) and kurtosis (.001) indicate approximate normal distribution. Also, analysis of histogram (figure 4.27), Q-Q Plot (figure 4.28), Detrended Normal Q-Q Plot (figure 4.29) and boxplot (figure 4.30) qualitatively ascertains near-normality of the construct PBC (Perceived Behavioural Control).

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
CONST3_PBC	140	1.00	4.00	2.4929	.68379	.384	.205	.001	.407
Valid N (listwise)	140								

Figure 4.26 : Descriptive Statistics – Construct 3 (PBC)

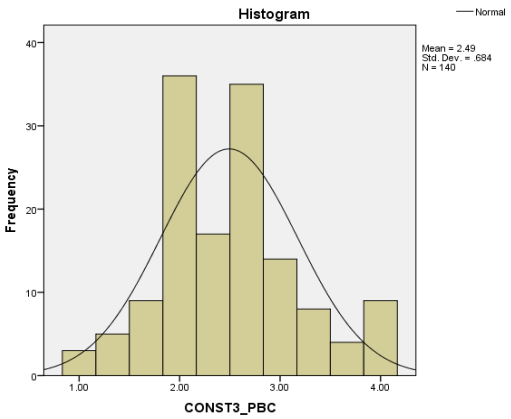


Figure 4.27 : Histogram Construct 3 (PBC)

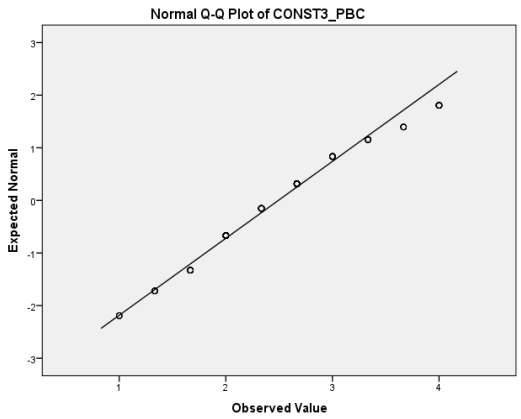


Figure 4.28 : Normal Q-Q Plot Construct 3 (PBC)

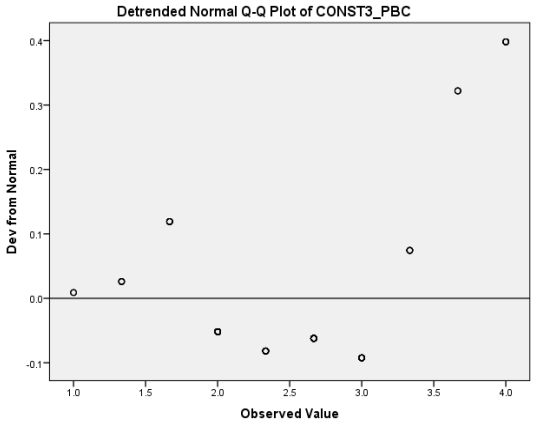


Figure 4.29 : Detrended Normal Q-Q Plot Construct 3 (PBC)

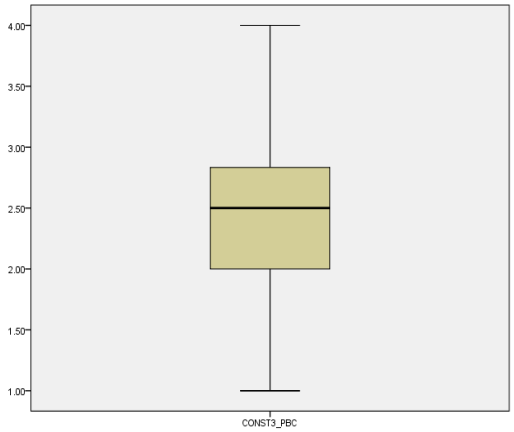


Figure 4.30 : Box Plot Construct 3 (PBC)

Construct 4 – FC (Facilitating Conditions). Shapiro Wilk test for normality was performed (df=140) to ascertain normality of the sample. Descriptive statistics for the construct was as given in figure 4.31. The test was statistically significant ($p<0.05$), hence the sample is not ideally normally distributed (Refer figure 4.15). However, relatively low values of skewness (-.155) and kurtosis (.202) indicate approximate normal distribution. Also, analysis of histogram (figure 4.32), Q-Q Plot (figure 4.33), Detrended

Normal Q-Q Plot (figure 4.34) and boxplot (figure 4.35) qualitatively ascertains near-normality of the construct FC (Facilitating Conditions).

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
CONST4_FC	140	1.00	5.00	2.9304	.69302	-.155	.205	.202	.407
Valid N (listwise)	140								

Figure 4.31 : Descriptive Statistics – Construct 4 (FC)

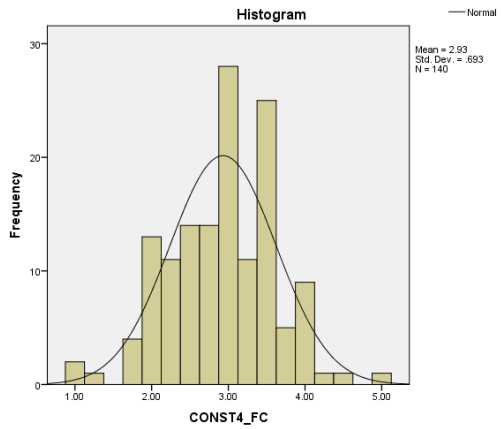


Figure 4.32 : Histogram Construct 4 (FC)

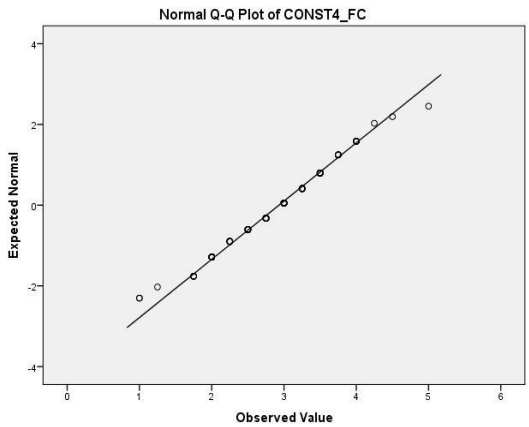


Figure 4.33 : Normal Q-Q Plot Construct 4 (FC)

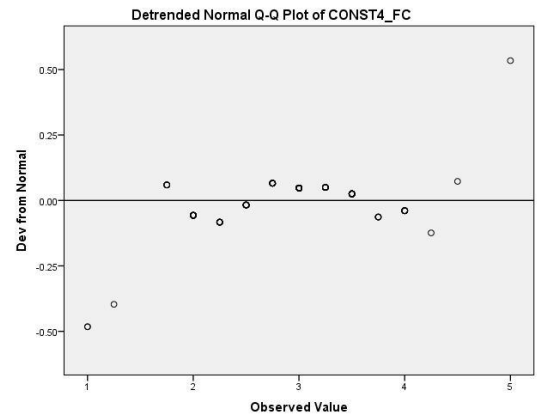


Figure 4.34 : Detrended Normal Q-Q Plot Construct 4 (FC)

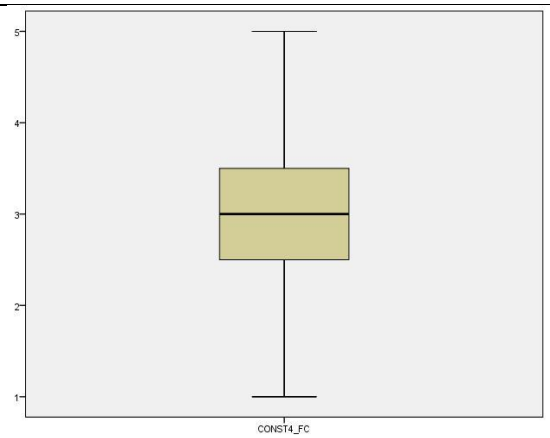


Figure 4.35 : Box Plot Construct 4 (FC)

<u>Construct 5 – BI (Behavioural Intention)</u>. Shapiro Wilk test for normality was performed (df=140) to ascertain normality of the sample. Descriptive statistics for the construct was as given in figure 4.36. The test was statistically not significant (p=(.281) >0.05), hence the sample is normally distributed (Refer figure 4.15). Also, analysis of histogram (figure 4.37), Q-Q Plot (figure 4.38), Detrended Normal Q-Q Plot (figure 4.39) and boxplot (figure 4.40) qualitatively reinforces normality of the construct BI (Behavioural Intention).

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
CONST5_BI	140	1.27	4.00	2.6013	.53116	.167	.205	.056	.407
Valid N (listwise)	140								

Figure 4.36 : Descriptive Statistics – Construct 5 (BI)

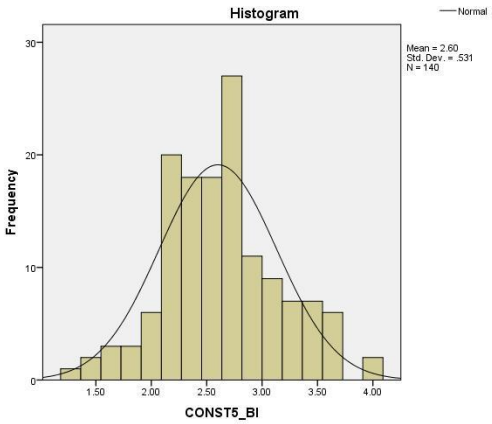


Figure 4.37 : Histogram Construct 5 (BI)

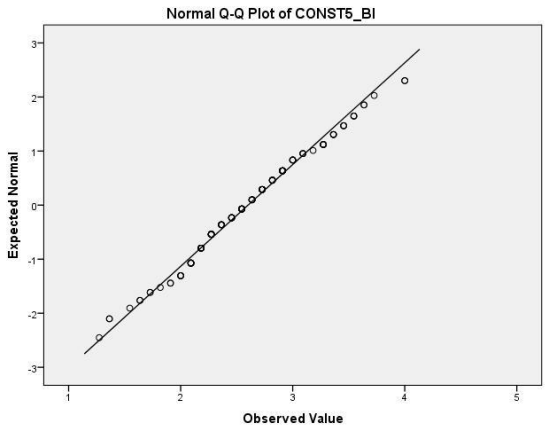


Figure 4.38 : Normal Q-Q Plot Construct 5 (BI)

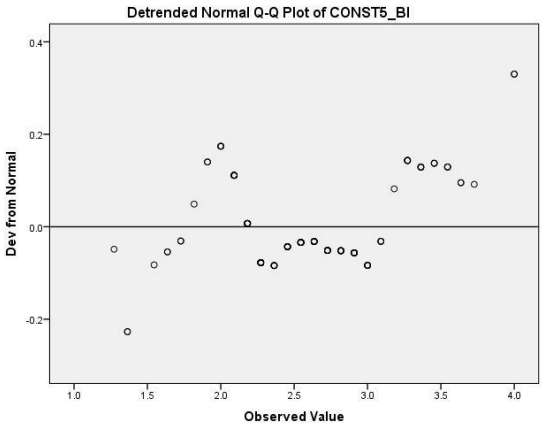


Figure 4.39 : Detrended Normal Q-Q Plot Construct 5 (BI)

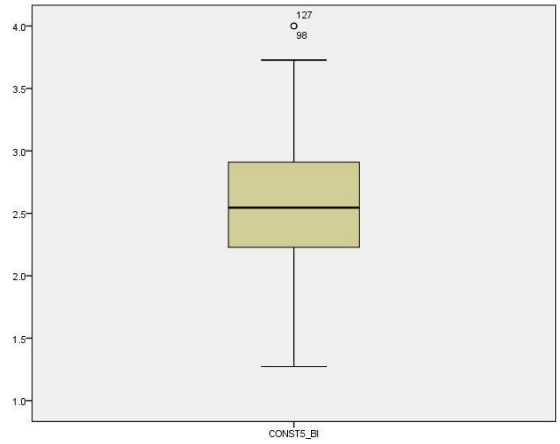


Figure 4.40 : Box Plot Construct 5 (BI)

Descriptive Statistical Analysis

Items. Descriptive statistical analysis of the responses was undertaken. The result

and percentage summary of responses of each Likert item is placed at **Appendix 'C'**.

Statistical Estimation. Statistical estimation was carried out for all five constructs and the results (figure 4.41) are as follows: -

(a) **Construct 1 – AB (Attitude towards Behaviour)**. The normal level of agreement with '**Attitude towards Behaviour**' was estimated at 95% CI [2.3339, 2.5661] (Test Value=0). T-value obtained was 41.739.

(b) **Construct 2 – SN (Subjective Norm)**. The normal level of agreement with '**Subjective Norm**' was estimated at 95% CI [2.0327, 2.2709] (Test Value=0). T-value obtained was 35.728.

(c) **Construct 3 – PBC (Perceived Behavioural Control)**. The normal level of agreement with '**Perceived Behavioural Control**' was estimated at 95% CI [2.3786, 2.6071] (Test Value=0). T-value obtained was 43.136.

(d) **Construct 4 – FC (Facilitating Conditions)**. The normal level of agreement with '**Facilitating Conditions**' was estimated at 95% CI [2.8146, 3.0462] (Test Value=0). T-value obtained was 50.031.

(e) **Construct 5 – BI (Behavioural Intention)**. The normal level of agreement with '**Behavioural Intention**' was estimated at 95% CI [2.5125, 2.6901] (Test Value=0). T-value obtained was 57.947.

One-Sample Test

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CONST1_AB	41.739	139	.000	2.45000	2.3339	2.5661
CONST2_SN	35.728	139	.000	2.15179	2.0327	2.2709
CONST3_PBC	43.136	139	.000	2.49286	2.3786	2.6071
CONST4_FC	50.031	139	.000	2.93036	2.8146	3.0462
CONST5_BI	57.947	139	.000	2.60130	2.5125	2.6901

Figure 4.41 : Statistical Estimation – One Sample Test

Inference. Means and Standard Deviations, as given in figure 4.42 below were used to describe attitudes towards the constructs. The data indicates the following with respect to five summated Likert variables denoting the five constructs.

(a) **Construct 1 – AB (Attitude towards Behaviour)**. The Construct with mean 2.45 (SD .69) implies that respondents feel that 'Attitiude towards Behaviour' will positively effect 'Behavioural Intention' of the private sector players.

(b) **Construct 2 – SN (Subjective Norm)**. The Construct with mean 2.15 (SD .71) implies that respondents feel that 'Subjective Norm' will positively effect 'Behavioural Intention' of the private sector players.

(c) **Construct 3 – PBC (Perceived Behavioural Control)**. The Construct with mean 2.49 (SD .68) implies that respondents feel that 'Perceived Behavioural Control' will positively effect 'Behavioural Intention' of the private sector players.

(d) **Construct 4 – FC (Facilitating Conditions)**. The Construct with mean 2.93 (SD .69) implies that respondents feel that 'Facilitating Conditions' will positively effect 'Behavioural Intention' of the private sector players.

(e) **Construct 5 – BI (Behavioural Intention)**. The Construct with mean 2.60 (SD .53) implies that respondents feel that 'Behavioural Intention' will positively effect 'Behaviour' of the private sector players, towards participating in Public Private Partnership model in Indian Healthcare Market.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
CONST1_AB	140	2.4500	.69453	.05870
CONST2_SN	140	2.1518	.71262	.06023
CONST3_PBC	140	2.4929	.68379	.05779
CONST4_FC	140	2.9304	.69302	.05857
CONST5_BI	140	2.6013	.53116	.04489

Figure 4.42 : Descriptive Statistics of Constructs

Inferential Statistics : One Sample T-Test

Construct 1 – AB (Attitude towards Behaviour). (T-test)

(a) **Hypothesis**. The hypothesis for inferential analysis was articulated as follows:-

(i) **Null Hypothesis for Construct 1 ($H_0$1)**

PBC (Perceived Behavioural Control) has no significant positive effect on BI (Behavioural Intention).

(ii) **Research Hypothesis for Construct 1 (H_A1)**

PBC (Perceived Behavioural Control) has significant positive effect on BI (Behavioural Intention).

(iii) **Statistical Hypothesis.** $H_0$1 Mean ≥ 3.5 (Hypothesized mean) and H_A1 Mean < 3.5 (observed mean).

(iv) **Decision Rule**. As the hypothesis is one-tailed (left-tailed) test and One-sample T-test only indicates two-tailed significance (p-value), **one-tailed critical *t* value and derived one tailed (left) p-value calculated from t-value** was used to test hypothesis.

Rule : If ***t*(crit) > *t*(observed)** ;

p-value (left tailed) < 0.05; and

$\mu(H_A) < \mu(H_0)$ (both observed & hypothesized means are in right order)

Decision : **Reject H_0**.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
CONST1_AB	140	2.4500	.69453	.05870

Figure 4.43 : One Sample Statistics – Construct 1 (AB)

One-Sample Test

	Test Value = 3.5					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
CONST1_AB	-17.888	139	.000	-1.05000	-1.1661	-.9339

Figure 4.44 : One Sample T-Test : Construct 1 (AB)

(b) **Analysis**. The observed mean (mean level of perception) 2.45 (figure 4.43) is statistically significantly lower by a mean difference of -1.05, 95% CI [-1.1661 to -.9339] than a normal level of 3.5, t(139) = -17.888 (figure 4.44).

The critical t with 139 degrees of freedom ($\alpha = 0.05$ for one-tailed (left) is -1.6559. The calculated t is -17.888, the p-value (left tailed) for the t-value is .000 and H_A(2.5203) is less than H_0(3.5).

***t*(crit) (-1.6559) > *t*(observed) (-17.888)**

p-value (left tail) (.000) < (.05)

and **$\mu(H_A)$ 2.5203 < μ (H_0) 3.5**

(c) **Statistical Result**. The t test reveals statistically reliable difference between the observed mean number of perception of respondents ($\mu = 2.45$, s = .69) and hypothesized mean of 3.5, t(139) = -17.888, p (.000) < .05, $\alpha = .05$. Thus, there is statistically highly significant difference of means and therefore, there is sufficient evidence to reject the null hypothesis.

(d) Inference. The perception of the population is that the 'Attitude towards Behaviour' has significant positive effect on behavioural intention.

Construct 2 – SN (Subjective Norm). (T-test)

(a) **Hypothesis**. The hypothesis for inferential analysis was articulated as follows:-

(i) **Null Hypothesis for Construct 2($H_0$2)**

SN (Subjective Norm) has no significant positive effect on BI (Behavioural Intention).

(ii) **Research Hypothesis for Construct 2 (H_A2)**

SN (Subjective Norm) has significant positive effect on BI (Behavioural Intention).

(iii) **Statistical Hypothesis.** $H_0$2 Mean ≥ 3.5 (Hypothesized mean) and H_A2 Mean < 3.5 (observed mean).

(iv) **Decision Rule**. As the hypothesis is one-tailed (left-tailed) test and One-sample T-test only indicates two-tailed significance (p-value), **one-tailed critical *t* value and derived one tailed (left) p-value calculated from t-value** was used to test hypothesis.

Rule : If ***t*(crit) > *t*(observed)** ;

p-value (left tailed) < 0.05; and

$\mu(H_A) < \mu(H_0)$ (both observed & hypothesized means are in right order)

Decision : **Reject H_0**.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
CONST2_SN	140	2.1518	.71262	.06023

Figure 4.45 : One Sample Statistics – Construct 2 (SN)

One-Sample Test

	Test Value = 3.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CONST2_SN	-22.386	139	.000	-1.34821	-1.4673	-1.2291

Figure 4.46 : One Sample T-Test : Construct 2 (SN)

(b) **Analysis**. The observed mean (mean level of perception) 2.15 (figure 4.45 above) is statistically significantly lower by a mean difference of -1.35, 95% CI [-1.4673 to -1.2291] than a normal level of 3.5, t(139) = -22.386 (figure 4.46 above. The critical t with 139 degrees of freedom ($\alpha = 0.05$ for one-tailed (left) is -1.6559. The calculated t is -22.386, the p-value (left tailed) for the t-value is .000 and H_A(2.1518) is less than H_0(3.5).

***t*(crit) (-1.6559) > *t*(observed) (-22.386)**

p-value (left tail) (.000) < (.05)

and **$\mu(H_A)$ 2.1518 < μ (H_0) 3.5**

(c) **Statistical Result**. The t test reveals statistically reliable difference between the observed mean number of perception of respondents ($\mu = 2.16$, $s = .71$) and hypothesized mean of 3.5, $t(139) = -22.386$, $p (.000) < .05$, $\alpha = .05$. Thus, there is statistically highly significant difference of means and therefore, there is sufficient evidence to reject the null hypothesis.

(d) Inference. The perception of the population is that the 'Subjective Norm' has significant positive effect on behavioural intention.

Construct 3 – PBC (Perceived Behavioural Control). (T-test)

(a) **Hypothesis**. The hypothesis for inferential analysis was articulated as follows:-

(i) **Null Hypothesis for Construct 3($H_0$3)**

PBC (Perceived Behavioural Control) has no significant positive effect on BI (Behavioural Intention).

(ii) **Research Hypothesis for Construct 3(H_A3)**

PBC (Perceived Behavioural Control) has significant positive effect on BI (Behavioural Intention).

(iii) **Statistical Hypothesis.** $H_0$3 Mean ≥ 3.5 (Hypothesized mean) and H_A3 Mean < 3.5 (observed mean).

(iv) **Decision Rule**. As the hypothesis is one-tailed (left-tailed) test and One-sample T-test only indicates two-tailed significance (p-value), **one-tailed critical *t* value and derived one tailed (left) p-value calculated from t-value** was used to test hypothesis.

Rule : If ***t*(crit) > *t*(observed)** ;

p-value (left tailed) < 0.05; and

$\mu(H_A) < \mu(H_0)$ (both observed & hypothesized means are in right order)

Decision : **Reject H_0.**

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
CONST3_PBC	140	2.4929	.68379	.05779

Figure 4.47 : One Sample Statistics – Construct 3 (PBC)

One-Sample Test

	Test Value = 3.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CONST3_PBC	-17.427	139	.000	-1.00714	-1.1214	-.8929

Figure 4.48 : One Sample T-Test : Construct 3 (PBC)

(b) **Analysis**. The observed mean (mean level of perception) 2.49 (figure 4.47) is statistically significantly lower by a mean difference of -1.007, 95% CI [-1.1214 to -1.8929] than a normal level of 3.5, t(139) = -17.427 (figure 4.48). The critical t with 139 degrees of freedom ($\alpha = 0.05$ for one-tailed (left) is -1.6559. The calculated t is -17.427, the p-value (left tailed) for the t-value is .000 and H_A(2.4929) is less than H_0(3.5).

***t*(crit) (-1.6559) > *t*(observed) (-17.427)**

p-value (left tail) (.000) < (.05)

and **$\mu(H_A)$ 2.4929 < μ (H_0) 3.5**

(c) Statistical Result. The t test reveals statistically reliable difference between the observed mean number of perception of respondents ($\mu = 2.49$, s = .68) and hypothesized mean of 3.5, t(139) = -17.427, p (.000)< .05, $\alpha = .05$. Thus, there is statistically highly significant difference of means and therefore, there is sufficient evidence to reject the null hypothesis.

(d) **Inference**. The perception of the population is that the 'Perceived Behavioural Control' has significant positive effect on behavioural intention.

Construct 4 – FC (Facilitating Conditions). (T-test)

(a) **Hypothesis**. The hypothesis for inferential analysis was articulated as follows:-

(i) **Null Hypothesis for Construct 4 ($H_0$4)**

FC (Facilitating Conditions) has no significant positive effect on BI (Behavioural Intention).

(ii) **Research Hypothesis for Construct 4(H_A4)**

FC (Facilitating Conditions) has significant positive effect on BI (Behavioural Intention).

(iii) **Statistical Hypothesis.** $H_0$4 Mean ≥ 3.5 (Hypothesized mean) and H_A4 Mean < 3.5 (observed mean).

(iv) **Decision Rule**. As the hypothesis is one-tailed (left-tailed) test and One-sample T-test only indicates two-tailed significance (p-value), **one-tailed critical *t* value and derived one tailed (left) p-value calculated from t-value** was used to test hypothesis.

Rule : If ***t*(crit) > *t*(observed)** ;

p-value (left tailed) < 0.05; and

$\mu(H_A) < \mu(H_0)$ (both observed & hypothesized means are in right order)

Decision : **Reject H_0**.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
CONST4_FC	140	2.9304	.69302	.05857

Figure 4.49 : One Sample Statistics – Construct 4 (FC)

One-Sample Test

	Test Value = 3.5					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
CONST4_FC	-9.726	139	.000	-.56964	-.6854	-.4538

Figure 4.50 : One Sample T-Test : Construct 4 (FC)

(b) **Analysis**. The observed mean (mean level of perception) 2.93 (figure 4.49) is statistically significantly lower by a mean difference of -.5696, 95% CI [-.6854 to -.4538] than a normal level of 3.5, t(139) = -9.726 (figure 4.50). The critical t with 139 degrees of freedom ($\alpha = 0.05$ for one-tailed (left) is -1.6559. The calculated t is -9.726, the p-value (left tailed) for the t-value is .000 and $H_A(2.93)$ is less than $H_0(3.5)$.

***t*(crit) (-1.6559) > *t*(observed) (-9.726)**

p-value (left tail) (.000) < (.05)

and **$\mu(H_A)$ 2.93 < μ (H_0) 3.5**

(c) **Statistical Result**. The t test reveals statistically reliable difference between the observed mean number of perception of respondents ($\mu = 2.93$, s = .69) and hypothesized mean of 3.5, t(139) = -9.726, p (.000)< .05, $\alpha = .05$. Thus, there is statistically highly significant difference of means and therefore, there is sufficient evidence to reject the null hypothesis.

(d) **Inference**. The perception of the population is that the 'Facilitating Conditions' has significant positive effect on behavioural intention.

Construct 5 – BI (Behavioural Intention). (T-test)

(a) **Hypothesis**. The hypothesis for inferential analysis was articulated as follows:-

(i) **Null Hypothesis for Construct 5 ($H_0$5)**

BI (Behavioural Intention) has no significant positive effect on Behaviour (B).

(ii) **Research Hypothesis for Construct 5(H_A5)**

BI (Behavioural Intention) has significant positive effect on Behaviour (B).

(iii) **Statistical Hypothesis.** $H_0$5 Mean ≥ 3.5 (Hypothesized mean) and H_A5 Mean < 3.5 (observed mean).

(iv) **Decision Rule**. As the hypothesis is one-tailed (left-tailed) test and One-sample T-test only indicates two-tailed significance (p-value), **one-tailed critical *t* value and derived one tailed (left) p-value calculated from t-value** was used to test hypothesis.

Rule : If ***t*(crit) > *t*(observed)** ;

p-value (left tailed) < 0.05; and

$\mu(H_A) < \mu(H_0)$ (both observed & hypothesized means are in right order)

Decision : **Reject H_0**.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
CONST5_BI	140	2.6013	.53116	.04489

Figure 4.51 : One Sample Statistics – Construct 5 (BI)

One-Sample Test

	Test Value = 3.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CONST5_BI	-20.020	139	.000	-.89870	-.9875	-.8099

Figure 4.52 : One Sample T-Test : Construct 5 (BI)

(b) **Analysis**. The observed mean (mean level of perception) 2.60 (figure 4.51) is statistically significantly lower by a mean difference of -.8987, 95% CI [-.9875 to -.8099] than a normal level of 3.5, t(139) = -20.02 (figure 4.52). The critical t with 139 degrees of freedom ($\alpha = 0.05$ for one-tailed (left) is -1.6559.

The calculated t is -20.02, the p-value (left tailed) for the t-value is .000 and H_A(2.60) is less than H_0(3.5).

***t*(crit) (-1.6559) > *t*(observed) (-20.02)**

p-value (left tail) (.000) < (.05)

and **$\mu(H_A)$ 2.60 < μ (H_0) 3.5**

(c) **Statistical Result**. The t test reveals statistically reliable difference between the observed mean number of perception of respondents (μ = 2.60, s = .53) and hypothesized mean of 3.5, t(139) = -20.02, p (.000)< .05, α = .05. Thus, there is statistically highly significant difference of means and therefore, there is sufficient evidence to reject the null hypothesis.

(d) **Inference**. The perception of the population is that the 'Behavioural Intention' has significant positive effect on Behaviour.

Analysis of Variances (One Way ANOVA) of Constructs

Analysis of variances was carried out through **one-way ANOVA test for all the five constructs with respect to the two demographic variables** (Experience and Occupation). The detailed test results are placed at **Appendix D**. The inferences are summarized in the succeeding paragraphs.

Construct 1 : Effect of Attitude towards Behaviour on Behavioural Intention.

(a) With 'Experience'. One-way ANOVA was carried out to compare the effect of level of 'Working Experience' ('Less than 10 years', '10 to 20 years', and 'more than 20 years') on levels of 'Effect of Attitude towards Behaviour on Behavioural Intention'. There was no significant difference in the mean level of 'Effect of Attitude towards Behaviour on Behavioural Intention' reported F = .149, p (.862) > 0.05. The test indicated statistically **no significant difference between all categories.**

(b) **With 'Occupation'**. One-way ANOVA was carried out to compare the effect of level of 'Occupation' ('Armed Forces Personnel', 'Doctor', 'Medical Industry Professional', 'Pharmaceutical Professional', and 'Others') on levels of 'Effect of Attitude towards Behaviour on Behavioural Intention'. There was no significant difference in the mean level 'Effect of Attitude towards Behaviour on Behavioural Intention and Behaviour' reported F = .088, p (.986) > 0.05. The test indicated statistically **no significant difference between all categories**.

Construct 2 : Effect of Subjective Norms on Behavioural Intention.

(a) **With 'Experience'**. One-way ANOVA was carried out to compare the effect of level of 'Experience' ('Less than 10 years', '10 to 20 years', and 'more than 20 years') on levels of 'Effect of Subjective Norms on Behavioural Intention and Behaviour'. There was no significant difference in the mean level of 'Effect of Subjective Norms on Behavioural Intention' reported F = 2.458, p (.082) >

0.05. The test indicated statistically **no significant difference between all categories.**

(b) **With 'Occupation'**. One-way ANOVA was carried out to compare the effect of level of 'Occupation' ('Armed Forces Personnel', 'Doctor', 'Medical Industry Professional', 'Pharmaceutical Professional', and 'Others') on levels of 'Effect of Subjective Norms on Behavioural Intention'. There was no significant difference in the mean level 'Effect of Subjective Norms on Behavioural Intention' reported F = 1.422, p (.230) > 0.05. The test indicated statistically **no significant difference between all categories**.

Construct 3 : Effect of Perceived Behavioural Control on Behavioural Intention.

(a) **With 'Experience'**. One-way ANOVA was carried out to compare the effect of level of 'Experience' ('Less than 10 years', '10 to 20 years', and 'more than 20 years') on levels of 'Effect of Perceived Behavioural Control on Behavioural Intention'. There was no significant difference in the mean level of 'Effect of Perceived Behavioural Control on Behavioural Intention' reported F = .883, p (.416) > 0.05. The test indicated statistically **no significant difference between all categories.**

(b) **With 'Occupation'**. One-way ANOVA was carried out to compare the effect of level of 'Occupation' ('Armed Forces Personnel', 'Doctor', 'Medical Industry Professional', 'Pharmaceutical Professional', and 'Others') on levels of

'Effect of Perceived Behavioural Control on Behavioural Intention'. There was no significant difference in the mean level 'Effect of Perceived Behavioural Control on Behavioural Intention' reported F = .964, p(.429) > 0.05. The test indicated statistically **no significant difference between all categories**.

Construct 4 : Effect of Facilitating Conditions on Behavioural Intention.

(a) **With 'Experience'**. One-way ANOVA was carried out to compare the effect of level of 'Experience' ('Less than 10 years', '10 to 20 years', and 'more than 20 years') on levels of 'Effect of Facilitating Conditions on Behavioural Intention'. There was no significant difference in the mean level of 'Effect of Facilitating Conditions on Behavioural Intention' reported F = .896, p(.411) > 0.05. The test indicated statistically **no significant difference between all categories.**

(b) **With 'Occupation'**. One-way ANOVA was carried out to compare the effect of level of 'Occupation' ('Armed Forces Personnel', 'Doctor', 'Medical Industry Professional', 'Pharmaceutical Professional', and 'Others') on levels of 'Effect of Facilitating Conditions on Behavioural Intention'. There was highly significant difference in the mean level 'Effect of Facilitating Conditions on Behavioural Intention' reported F = 2.136, p (.080) > 0.05. The test indicated statistically **no significant difference between all categories**.

Construct 5 : Effect of Behavioural Intention on Behaviour.

(a) **With 'Experience'**. One-way ANOVA was carried out to compare the effect of level of 'Working Experience' ('Less than 10 years', '10 to 20 years', and 'more than 20 years') on levels of 'Effect of Behavioural Intention on Behaviour'. There was no significant difference in the mean level of 'Effect of Behavioural Intention on Behaviour' reported F = 2.099, p (.127) > 0.05. The test indicated statistically **no significant difference between all categories.**

(b) **With 'Occupation'**. One-way ANOVA was carried out to compare the effect of level of 'Occupation' ('Armed Forces Personnel', 'Doctor', 'Medical Industry Professional', 'Pharmaceutical Professional', and 'Others') on levels of 'Effect of Behavioural Intention on Behaviour'. There was sstatistically significant difference in the mean level 'Effect of Behavioural Intention on Behaviour' reported **F = 3.305, p (.013) < 0.05**. Post-hoc Tukey Honestly Significant Difference (HSD) Test indicated statistically significant difference between categories 'Armed Forces Personnel' and Public/Others [**mean difference = -.4051, p(0.017) <0.05**]

Inference. Level of agreement with respect to the '**Effect of Behavioural Intention on Behaviour**' is **higher amongst 'Public/Others' as compared to 'Armed Forces Officers'**.

Correlation Analysis

Since the **data has been considered to be near normal, the Pearson Correlation analysis** between the independent and dependent variables / constructs were **carried out.** The details are in succeeding paragraphs.

Correlation between '**Effect of Attitude towards Behaviour on Behavioural Intention' and 'Effect of Behavioural Intention on Behaviour'.**

(a) **Hypothesis.**

(i) **Null.** There is no correlation between the effect of 'Attitude towards Behaviour on Behavioural Intention' and effect of 'Behavioural Intention on Behaviour'.

(ii) **Alternate**. The effect of Attitude towards Behaviour on Behavioural Intention is related to effect of Behavioural Intention on Behaviour.

(b) **Correlation.** Pearson Correlation Coefficient (R) = **.543, p(.000) < 0.01 (two tailed) is statistically significant,** as shown in figure 4.53**. Thus there is statistically significant evidence to reject the null hypothesis.**

Correlations

		CONST1_AB	CONST5_BI
CONST1_AB	Pearson Correlation	1	.543**
	Sig. (2-tailed)		.000
	N	140	140
CONST5_BI	Pearson Correlation	.543**	1
	Sig. (2-tailed)	.000	
	N	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

Figure 4.53 : Pearson Correlation between Const 1 (AB) & Const 5 (BI)

(iii) **Inference.** **Effect of Attitude towards Behaviour on Behavioural Intention** was found to be **positively and moderately correlated with effect of Behavioural Intention on Behaviour**,

Correlation between '**Effect of Subjective Norm on Behavioural Intention' and 'Effect of Behavioural Intention on Behaviour'.**

(a) **Hypothesis.**

(i) **Null.** There is no correlation between the effect of 'Subjective Norm on Behavioural Intention' and effect of 'Behavioural Intention on Behaviour'.

(ii) **Alternate**. The effect of Subjective Norm on Behavioural Intention is related to effect of Behavioural Intention on Behaviour.

(b) **Correlation.** Pearson Correlation Coefficient (R) = **.684, p(.000) < 0.01 (two tailed) is statistically significant,** as shown in figure 4.54**. Thus there is statistically significant evidence to reject the null hypothesis.**

Correlations

		CONST2_SN	CONST5_BI
CONST2_SN	Pearson Correlation	1	.684**
	Sig. (2-tailed)		.000
	N	140	140
CONST5_BI	Pearson Correlation	.684**	1
	Sig. (2-tailed)	.000	
	N	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

Figure 4.54 : Pearson Correlation between Const 2 (SN) & Const 5 (BI)

(iii) **Inference.** **Effect of Subjective Norm on Behavioural Intention** was found to be **positively and moderately correlated with effect of Behavioural Intention on Behaviour**,

Correlation between '**Effect of Perceived Behavioural Control on Behavioural Intention' and 'Effect of Behavioural Intention on Behaviour'.**

(a) **Hypothesis.**

(i) **Null.** There is no correlation between the effect of 'Perceived Behavioural Control on Behavioural Intention' and effect of 'Behavioural Intention on Behaviour'.

(ii) **Alternate**. The effect of Perceived Behavioural Control on Behavioural Intention is related to effect of Behavioural Intention on Behaviour.

(b) **Correlation.** Pearson Correlation Coefficient (R) = **.676, p(.000) < 0.01 (two tailed) is statistically significant,** as shown in figure 4.55**. Thus there is statistically significant evidence to reject the null hypothesis.**

Correlations

		CONST3_PBC	CONST5_BI
CONST3_PBC	Pearson Correlation	1	.676**
	Sig. (2-tailed)		.000
	N	140	140
CONST5_BI	Pearson Correlation	.676**	1
	Sig. (2-tailed)	.000	
	N	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

Figure 4.55 : Pearson Correlation between Const 3 (PBC) & Const 5 (BI)

(iii) **Inference.** **Effect of Perceived Behavioural Control on Behavioural Intention** was found to be **positively and moderately correlated with effect of Behavioural Intention on Behaviour**,

Correlation between '**Effect of Facilitating Conditions on Behavioural Intention' and 'Effect of Behavioural Intention on Behaviour'.**

(a) **Hypothesis.**

(i) **Null.** There is no correlation between the effect of 'Facilitating Conditions on Behavioural Intention' and effect of 'Behavioural Intention on Behaviour'.

(ii) **Alternate**. The effect of Facilitating Conditions on Behavioural Intention is related to effect of Behavioural Intention on Behaviour.

(b) **Correlation.** Pearson Correlation Coefficient (R) = **.444, p(.000) < 0.01 (two tailed) is statistically significant,** as shown in figure 4.56**. Thus there is statistically significant evidence to reject the null hypothesis.**

Correlations

		CONST4_FC	CONST5_BI
CONST4_FC	Pearson Correlation	1	.444**
	Sig. (2-tailed)		.000
	N	140	140
CONST5_BI	Pearson Correlation	.444**	1
	Sig. (2-tailed)	.000	
	N	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

Figure 56 : Pearson Correlation between Const 4 (FC) & Const 5 (BI)

(iii) **Inference. Effect of Facilitating Conditions on Behavioural Intention** was found to be **positively and moderately correlated with effect of Behavioural Intention On Behaviour**,

Analysis of Rank Order Question

Rank Order Question 28. The respondents were asked to rank order the '**Benefits accrued by Public Private Partnership in Indian Healthcare Service delivery**'. Analysis of the rank order question was undertaken using the **Henry Garrett Ranking Technique**. The brief on **Henry Garrett Ranking Technique** is attached at **Appendix E.**

Rank order was to be done in decreasing order (most important reason a rank of 1 and the least important reason a rank of 5). The five options were:

(a) Improve Access and Reach

(b) Improve Quality/ Practice

(c) Better Management & Efficiency

(d) Augment Resources

(e) Imbibe Best Practices

Responses of 140 respondents are as summarized in Table 4.1. The cumulative totals obtained for each rank are as given in Table 4.2. It was observed that '**Improve Access and Reach**' was ranked first with a score of 58.59 Garrett points. 'Improve Quality/ Practice', 'Better Management & Efficiency', 'Augment Resources' and 'Imbibe Best Practices' were ranked second, third, fourth and fifth respectively with Garett scores of 53.99, 50.05, 47.84 and 38.53 respectively (Detailed calculations have been placed at **Appendix E**). The test was also run using conventional method of calculation and the results were found to be same.

Benefits of Public Private Partnership (PPP) in Indian Healthcare Service delivery	1	2	3	4	5
Improve Access and Reach	67	17	19	20	17
Improve Quality/ Practice	19	62	23	25	11
Better Management & Efficiency	19	22	59	22	18
Augment Resources	19	25	22	56	18
Imbibe Best Practices	16	14	17	17	76

Table 4.1 : Rank Order by Respondents

Benefits of Public Private Partnership (PPP) in Indian Healthcare Service delivery	1	2	3	4	5	Total	Mean (Total/No. of Responses (140)	Final Rank
Improve Access and Reach	5025	1020	950	800	408	8203	58.59	1
Improve Quality/ Practice	1425	3720	1150	1000	264	7559	53.99	2
Better Management & Efficiency	1425	1320	2950	880	432	7007	50.05	3
Augment Resources	1425	1500	1100	2240	432	6697	47.84	4
Imbibe Best Practices	1200	840	850	680	1824	5394	38.53	5

Table 4.2 : Rank Order by Henry Garrett Ranking Technique

Inference. Majority of the respondents agree that 'Public Private Partnership in Indian Healthcare Service delivery' would improve access and reach of healthcare service to everyone and would also facilitate availability of improved quality of healthcare service in India.

Textual Analysis of Responses

Textual Analysis of the responses received to the **Open Ended Question No. 28, '*Any other Comments/ suggestions/ recommendation'*** was carried out to

identify main issues/ themes.

Inferences. Following are the major themes which emerged from the textual analysis:-

(a) PPP only way forward to enhance healthcare facility in India.

(b) Regulatory Framework by Government to promote PPP..

(c) Incentives/ Easy Loans/ Tax Break by Government to encourage Private Players to adopt PPP Model.

(d) Initiate PPP in Healthcare through available templates like CT Scan/ MRI through PPP in Govt Hospitals.

(e) Exploitation of Technology through PPP Model.

(f) Increased efficiency and effectiveness of healthcare facilities.

Summary of Data Analysis

Data Analysis and Hypothesis testing under various heads has been carried out using SPSS in order to ascertain the veracity and accuracy of the collected data as also to test the hypothesis proposed. Some of the deductions arrived at are given as under:

(a) The study could cover responses from across the country and adequate responses (n = 140) were received to draw inferences towards the population from perception of the respondents regarding intention and behaviour of private sector towards the Public Private Partnership.

(b) The Kaiser-Meyer-Olkin (KMO) value of 0.871 indicated reasonable adequacy of the sample size.

(c) The Cronbach's Alpha value of **0.920** indicated good reliability and consistency of the survey instrument.

(d) Nearly all respondents were aware of the study at hand. Hence, the responses can be considered as valid and based on realistic experiences.

(e) The constructs are approximately normally distributed (Descriptive Statistics and Normality Test). All the five constructs with a mean score less than 3.5 on a 5 point Likert scale indicated the perception of respondents that Public Private Partnership in Indian Healthcare Service can be leveraged.

(f) Constructs 1 to 4 (summated independent variables) are found to be positively and moderately correlated with construct 5 (summated dependent variable)as indicated by the Pearson Correlation Coefficient. Hence, it can be safely assumed that four constructs AB, SN, PBC and FC will significantly contribute towards BI.

(g) Results of One Sample T-Test for all five constructs were statistically highly significant at 95% confidence level, thus providing sufficient statistical evidence to reject the null hypotheses.

(h) The One-way ANOVA test indicated statistically no significant difference between mean of all five constructs based on 'Occupation' and Experience' except for difference between mean for Construct 5 (BI) based on Occupation.

Post-hoc Tukey (HSD) Test for the construct indicated statistically significant difference between categories 'Armed Forces Personnel' and Public/Others, indicating that level of agreement with respect to the 'Effect of Behavioural Intention on Behaviour' is higher amongst 'Public/Others' as compared to 'Armed Forces Officers'.

(j) Majority of the respondents agree that 'Public Private Partnership in Indian Healthcare Service delivery' delivery' would improve access and reach of healthcare service to everyone and would also facilitate availability of improved quality of healthcare service in India.

CHAPTER V

FINDINGS/ CONCLUSION AND RECOMMENDATIONS

Introduction

The relevance and importance of the Public Private Partnership in Indian Healthcare Service needs no further elucidation. This research established an analytical framework based on modified TPB to determine the influence and relative contribution among certain independent variables for the private sector's intention and behaviour towards participating in Indian Healthcare Market via Public Private Partnership.

Overall Findings

. **Research Hypotheses**. All five research hypotheses are validated (refer table 5.1 below).

Sr.No.	Researcher's Hypothesis	Validated (Yes/No)
H1	AB (Attitude towards Behaviour) has significant positive effect on BI (Behavioural Intention).	**Yes**
H2	SN (Subjective Norm) has significant positive effect on BI (Behavioural Intention).	**Yes**

H3	PBC (Perceived Behavioural Control) has significant positive effect on BI (Behavioural Intention).	**Yes**
H4	FC (Facilitating Conditions) has significant positive effect on BI (Behavioural Intention).	**Yes**
H5	BI (Behavioural Intention) has significant positive effect on Behaviour (B).	**Yes**

Table 5.3 : Validation of Research Hypothesis

Research Objectives. The importance of Private Sector in Indian Health Care delivery was always considered important, the following objectives were identified for the research and are achieved (table 5.2):

Sr.No.	**Researcher's Objective**	**Achieved (Yes/No)**
2	**Objective 2**. To assess the intention and behaviour of private sector in getting into a Public - Private Partnership.	**Yes**
3	**Objective 3**. To analyse the approach of private sector in the Indian health care market via Public-Private Partnership (PPP) in narrowing down the medical resource gaps.	**Yes**

Table 5.4 : Validation of Research Objectives

Major Inferences

(a) **Inference 1**. Perception amongst respondents is that private sector has **positive affective reaction** towards participation in Indian Healthcare Market via Public Private Partnership. The attitude towards behaviour of private sector has positive effect on behavioural intention and behaviour.

(b) **Inference 2**. Perception amongst respondents is that private sector has **positive behavioural perception** towards participation in Indian Healthcare Market via Public Private Partnership. The subjective norms of private sector has positive effect on behavioural intention and behaviour.

(c) **Inference 3**. Perception amongst respondents is that private sector **exhibits positive confidence in controlling the resources** towards participation in Indian Healthcare Market via Public Private Partnership. The perceived behavioural control of private sector has positive effect on behavioural intention and behaviour.

(d) **Inference 4**. Perception amongst respondents is that favourable measures in a situational context from **organisational support could generate a positive belief** in the private sector towards participation in Indian Healthcare Market via Public Private Partnership. The facilitating conditions of private sector has positive effect on behavioural intention and behaviour.

(e) **Inference 5**. Perception amongst respondents is that the **behavioural intention of private sector raises the possibility of the actual behaviour** to be performed towards participation in Indian Healthcare Market via Public Private Partnership. The behavioural intention of private sector has positive effect on behaviour.

(f) **Inference 6**. Effect of Attitude towards Behaviour on Behavioural Intention was found to be **positively and moderately correlated** with effect of **Behavioural Intention on Behaviour.**

(g) **Inference 7.** Effect of **Subjective Norm on Behavioural Intention** is **positively and moderately correlated** with effect of **Behavioural Intention on Behaviour**.

(h) **Inference 8.** Effect of **Perceived Behavioural Control on Behavioural Intention** is **positively and moderately correlated** with effect of **Behavioural Intention on Behaviour.**

(i) **Inference 9**. Effect of **Facilitating Conditions on Behavioural Intention** is positively and moderately correlated with effect of **Behavioural Intention On Behaviour**.

(j) **Inference 10**. Majority of the respondents agree that '**Public Private Partnership in Indian Healthcare Service delivery**' would improve **access and reach** of healthcare service to everyone and would also facilitate availability of **improved quality** of healthcare service in India.

Scope for Further Research

The present research has been done by capturing the perception of personnel spread across the country various locations regarding willingness of 'Private sector to participate through Public Private Partnership in Indian Healthcare' and the 'Benefits of PPP Model' in enhancing efficiency and effectiveness of Healthcare Service in India. Further research can be carried out in the following fields:

(a) Road map for Participation of Private Sector through PPP Model in IHM.

(b) Identification of Specific Services for PPP Model.

(c) Framework of proposed Regulatory Provisions by Govt to encourage private sector.

Conclusion

Previous studies have been conducted regarding the willingness of the private sector to invest in economic infrastructure via Public Private Partnership. However, certain critical factors related to intention and behaviour of private sector participation in Indian Healthcare Market via Public Private Partnership and the relative importance to which Attitude towards Behaviour, Facilitating Conditions, Perceived Behavioural Control, and Subjective Norms affect Behavioural Intention were analysed in the relevant literature. This study analyzed the influencing factors of Behavioural Intention and the identification of effect on Behavioural Intention based on modified TPB. The finding shows that Attitude towards Behaviour, Facilitating Conditions, Perceived Behavioural Control, and Subjective Norms are positively significant to Behavioural Intention, and that Behavioural Intention has a significant effect on behaviour. These provides reference for governments and public authorities to implement appropriate policies for stimulating the private

sector's motivation to participate in Indian Healthcare Market via Public Private Partnership and subsequently narrow down the gap of medical resources and ameliorate the quality of Indian Healthcare Services.

The private entities should be encouraged to establish partnership with public authorities through integration, transformation, or leasing of existing healthcare facilities. The financing risks of these types are distinctly lower, and private investors might broaden the scope of cooperation and market in a new approach. In addition, the social sector should be encouraged to participate in Indian Healthcare Market in the form of consortium, which could magnify the advantages of construction enterprises in financing, construction, and external relations, as well as the strength of medical industry, property investment companies and private hospitals in service performance.

Recommendations

Opening of IHM through PPP Model. Participation of private sector be considered through PPP Model for provision of healthcare service in India. This would enhance to availability of quality healthcare for everyone.

Regulatory Framework of Participation. Appropriate framework may be formulated to facilitate participation of private sector in IHM through PPP Model. The framework should be made in consultation with all stakeholders like Indian Medical Association, Dept of Health, State Govt, Private Sectors, Big Hospitals, Public Representatives etc.

Incentives to Private Sector for Participation in IHM through PPP Model. Adequate incentives like affordable loan with Govt Guarantee, tax breaks etc may be provided initially for a limited period to encourage private sector.

Pan-India Coverage. The PPP Model should be implemented Pan-India including rural areas. The tendency to invest only in big cities by private sector must be discouraged.

Transparency in Policy Guidelines. Policy guidelines should be elaborate and transparent to provide clarity to the private sector regarding participation in IHM through PPP Model.

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Appendix A

STUDY ON INDIAN HEALTH CARE SECTOR : PARTICIPATION OF PRIVATE SECTOR UNDER PUBLIC PRIVATE PARTNERSHIP

1. Private sector participation in the Indian Healthcare Market via Public-Private Partnership (PPP) could be considered an available approach to narrow down the medical resource gap and improve the operational efficiency and healthcare facilities.

2. As part of my research, I wish to seek your valuable inputs for examining in particular the influence, relative importance, general intention and behaviour of the private sector towards its participation in Indian Healthcare Market via PPP. Through a questionnaire, may I seek your kind response to each of the statements listed below towards furtherance of the study. I assure that personal information will remain confidential and anonymity maintained at all times.

   Air Commodore U Manoj

3. Please mark your response for each of the following statements in the most appropriate box provided. In case you are unable to decide whether to agree or disagree with the statement, mark the neutral box appropriately. SD–Strongly Disagree D–Disagree N–Neutral A–Agree SA–Strongly Agree

---

Private sector is not able to derive prospective investment opportunities for itself through Public Private Partnership in Indian Healthcare Sector. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Participation in Indian Healthcare Market through Public Private Partnership could decrease operational benefits for private sector. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

The Private sector will not be able to strengthen its competitiveness in clinical work by establishing partnership with public authorities / institutions. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Public Private Partnership in healthcare sector would simply not strengthen the capacity to deliver better healthcare services in India. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

The Private Sector in its partnership with public authorities / institutions cannot strengthen its competitiveness in non-clinical work. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Participating in Indian Healthcare service delivery via Public Private Partnership would not improve social standing of the private sector. *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Investing in Indian Healthcare Service delivery via Public Private Partnership will not facilitate private sector to win even more recognition from public authorities. *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Public Private Partnership in Indian Healthcare Market would simply not be beneficial to the involved stakeholders. *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Participation by private sector in Indian Healthcare Market under PPP will not succeed in delivering universal and comprehensive healthcare service. *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Private sector through Public Private Partnership would not benefit in terms of expertise and from capital invested in Indian Medical Service delivery. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Private sectors participation in healthcare delivery through PPP will not aid them in making inroads / forays into newer investment opportunities in future. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

The private sector through Public Private Partnership alone cannot bridge the investment required in Indian Medical Service delivery. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

The government through Public Private Partnership is not likely to create a healthy and conducive environment towards aiding privatization in Healthcare Service delivery. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Public authorities do not encourage private investors to participate in Indian Healthcare Market. *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Supportive governmental policies with tangible benefits have not been issued to make it easy for private capital investment in Indian Healthcare Market through PPP. *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Official guidance and hand holding is not available to private sector in Indian Healthcare Market to establish partnership with public authorities and invest. *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Private sector is just not keen to participate in Indian Healthcare Market via Public Private Partnership. *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

The private sector perceives that investing in Indian Healthcare Market by PPP is not a viable productive proposition when compared to other avenues. *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Instead of privatising completely Indian Healthcare Market, seeking private sector to invest by PPP is a bad business proposal. *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Indian Healthcare Service delivery under PPP would not be one of the preferred fields for private sector to invest. *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Private sector till date has not engaged itself in Indian Healthcare via Public Private Partnership. *

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

Public Private Partnership is just not the right model suited in healthcare for improving the general wellbeing of the population in urban & rural areas. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Success in a few isolated cases may not necessarily open flood gates encouraging other private players to invest heavily in Indian Healthcare Market via PPP. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Under PPP in healthcare, private sector cannot be expected to push in investment regularly and endlessly. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

In healthcare delivery service, private sector participation via PPP will not enhance healthcare access and reach to all citizens of the country. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Private sector involvement in medical services delivery via Public Private Partnership (PPP) will improve the operational efficiency of healthcare facilities. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Extensive participation of private sector via PPP would still not improve the quality of healthcare infrastructure in the country. *

- ○ Strongly disagree
- ○ Disagree
- ○ Neutral
- ○ Agree
- ○ Strongly agree

Rank order on a scale of 1 to 5 with 1 being most important, the benefits of Public Private Partnership (PPP) in Indian Healthcare Service delivery *

	Improve Access and Reach	Improve Quality/ Practice	Better Management & Efficiency	Augment Resources	Imbibe best practices
1st	○	○	○	○	○
2nd	○	○	○	○	○
3rd	○	○	○	○	○
4th	○	○	○	○	○
5th	○	○	○	○	○

Any other comments/ suggestions/ recommendations

Working Experience in years *

- upto 10 years
- 10 to 20 years
- More than 20 years

Occupation *

- Armed Forces Personnel (other than Doctors / Surgeons)
- Doctor / Surgeon from Army / Navy / Air Force
- Doctors / Surgeons / other health professionals
- Personnel from Indian Civil Services
- Public / others

Submit

Appendix B

Factor Analysis of Responses using Varimax Rotation and Principal Component Analysis

1. Communalities

Communalities

	Initial	Extraction
Q1 Investment Opportunities	1.000	.433
Q2 Operational Benefits	1.000	.503
Q3 Competitiveness in Clinical Work	1.000	.614
Q4 Enhanced Capacity	1.000	.633
Q5 Competitiveness in Non Clinical Work	1.000	.694
Q6 Improved Social Standing	1.000	.769
Q7 Recognition	1.000	.685
Q8 Benefits to Stakeholders	1.000	.682
Q9 Comprehensive Healthcare Service	1.000	.595
Q10 Acquired Expertise	1.000	.672
Q11 Future Investment Oppurtunities	1.000	.577
Q12 Bridge Investment Gap	1.000	.498
Q13 Conducive Environment	1.000	.562
Q14 Encouragement by Public Authorities	1.000	.603
Q15 Supportive Governmental Policies	1.000	.776
Q16 Official Guidance & Assistance	1.000	.635
Q17 Keenness	1.000	.630
Q18 Viability	1.000	.731
Q19 Advantage of PPP over Privatisation	1.000	.658
Q20 Preference to Invest	1.000	.478
Q21 Current Engagement	1.000	.561
Q22 Suitability	1.000	.511
Q23 Encouragement for Other Private Players	1.000	.552
Q24 Regular Investment	1.000	.684
Q25 Access and Reach	1.000	.680
Q26 Operational Efficiency	1.000	.600
Q27 Quality Improvement of Healthcare	1.000	.626

Extraction Method: Principal Component Analysis.

2. **<u>Total Variance (Five Factors with Eigen Value more than 1)</u>**. Five factors accounted for 61

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.543	35.344	35.344	9.543	35.344	35.344	6.523	24.161	24.161
2	2.861	10.597	45.941	2.861	10.597	45.941	2.847	10.545	34.705
3	1.610	5.963	51.904	1.610	5.963	51.904	2.481	9.190	43.895
4	1.419	5.255	57.159	1.419	5.255	57.159	2.431	9.005	52.900
5	1.210	4.483	61.642	1.210	4.483	61.642	2.360	8.742	61.642
6	1.012	3.749	65.391						
7	.907	3.358	68.749						
8	.826	3.058	71.807						
9	.696	2.577	74.384						
10	.690	2.556	76.940						
11	.638	2.362	79.302						
12	.628	2.327	81.629						
13	.591	2.189	83.818						
14	.544	2.014	85.832						
15	.479	1.775	87.607						
16	.444	1.645	89.252						
17	.405	1.501	90.753						
18	.390	1.446	92.199						
19	.387	1.435	93.634						
20	.315	1.165	94.799						
21	.288	1.066	95.865						
22	.246	.910	96.774						
23	.222	.824	97.598						
24	.199	.737	98.335						
25	.174	.644	98.979						
26	.166	.614	99.593						
27	.110	.407	100.000						

Extraction Method: Principal Component Analysis.

3. **Rotated Component Matrix**

Rotated Component Matrix[a]

	Component				
	1	2	3	4	5
Q6 Improved Social Standing	.844				
Q5 Competitiveness in Non Clinical Work	.802				
Q4 Enhanced Capacity	.789				
Q8 Benefits to Stakeholders	.745				
Q7 Recognition	.742				
Q10 Acquired Expertise	.694		.305		
Q3 Competitiveness in Clinical Work	.681				.353
Q9 Comprehensive Healthcare Service	.636		.356		
Q19 Advantage of PPP over Privatisation	.629			.479	
Q22 Suitability	.539		.389		
Q11 Future Investment Oppurtunities	.537		.381	.349	
Q20 Preference to Invest	.466			.440	
Q15 Supportive Governmental Policies		.842			
Q16 Official Guidance & Assistance		.776			
Q14 Encouragement by Public Authorities		.707			
Q21 Current Engagement		.519		.406	
Q1 Investment Opportunities		.476			.374
Q25 Access and Reach	.353		.702		
Q27 Quality Improvement of Healthcare	.396		.635		
Q26 Operational Efficiency		-.372	.633		
Q13 Conducive Environment	.390		.488		
Q18 Viability				.817	
Q17 Keenness				.690	
Q24 Regular Investment					.736
Q12 Bridge Investment Gap					.667
Q23 Encouragement for Other Private Players				.441	.512
Q2 Operational Benefits	.448				.494

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.[a]

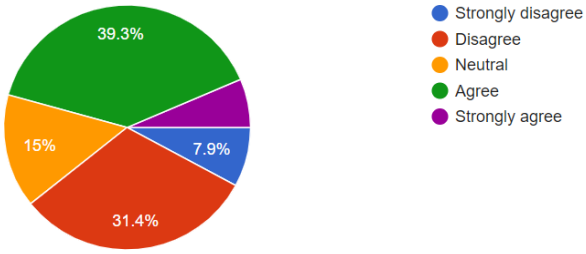
a. Rotation converged in 7 iterations.

Appendix C

QUESTIONNAIRE RESPONSES

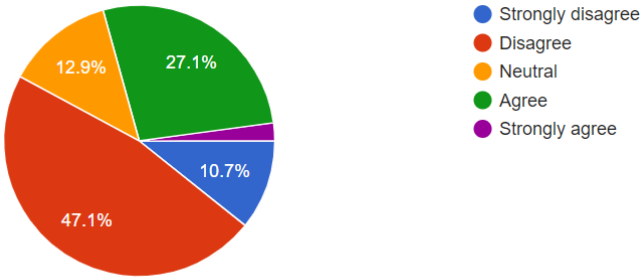
Private sector is not able to derive prospective investment opportunities for itself through Public Private Partnership in Indian Healthcare Sector.

140 responses



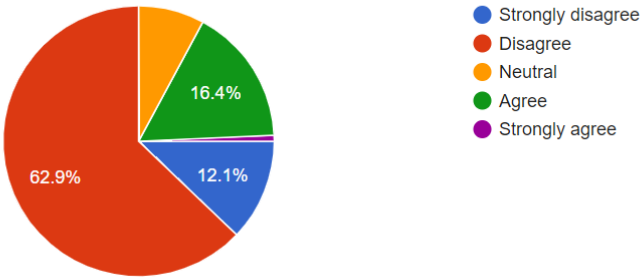
operational benefits for private sector.

140 responses



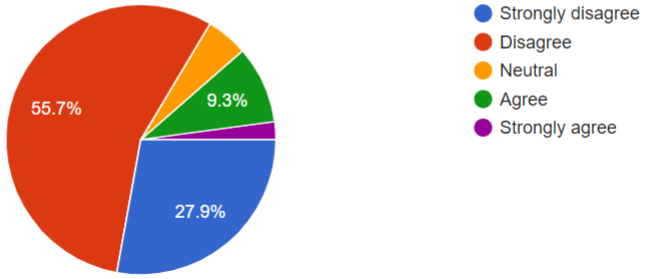
The Private sector will not be able to strengthen its competitiveness in clinical work by establishing partnership with public authorities / institutions.

140 responses



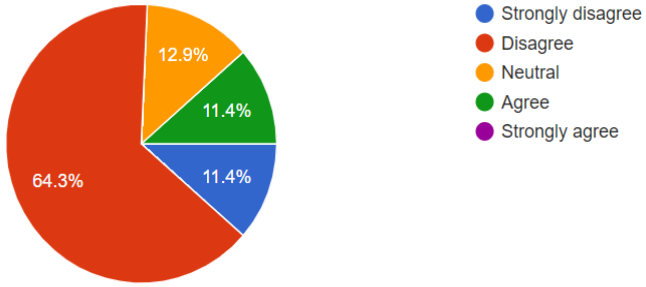
Public Private Partnership in healthcare sector would simply not strengthen the capacity to deliver better healthcare services in India.

140 responses



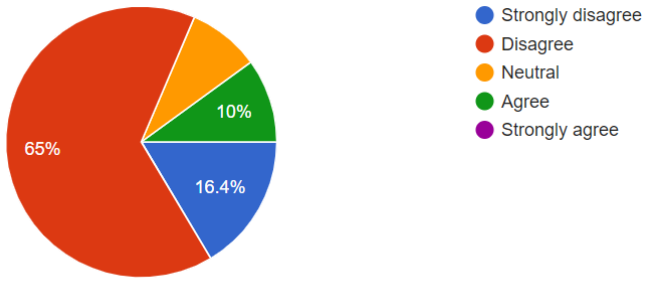
The Private Sector in its partnership with public authorities / institutions cannot strengthen its competitiveness in non-clinical work.

140 responses



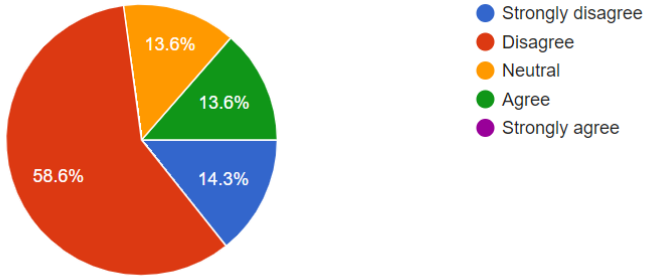
Participating in Indian Healthcare service delivery via Public Private Partnership would not improve social standing of the private sector.

140 responses



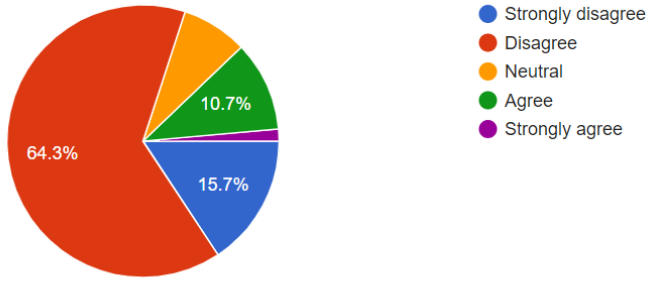
Investing in Indian Healthcare Service delivery via Public Private Partnership will not facilitate private sector to win even more recognition from public authorities.

140 responses



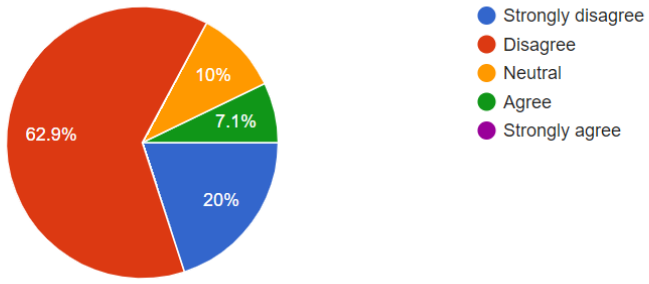
Public Private Partnership in Indian Healthcare Market would simply not be beneficial to the involved stakeholders.

140 responses



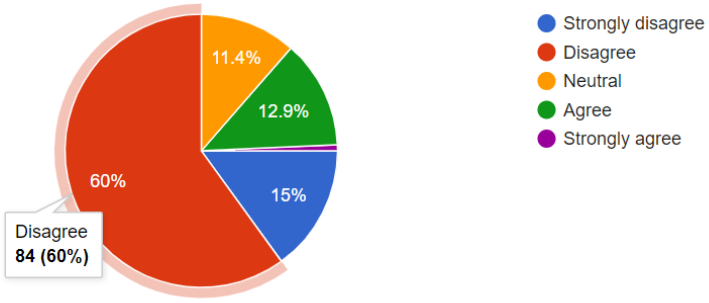
Participation by private sector in Indian Healthcare Market under PPP will not succeed in delivering universal and comprehensive healthcare service.

140 responses



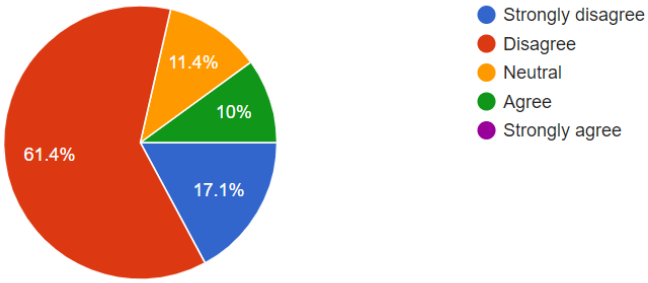
Private sector through Public Private Partnership would not benefit in terms of expertise and from capital invested in Indian Medical Service delivery.

140 responses



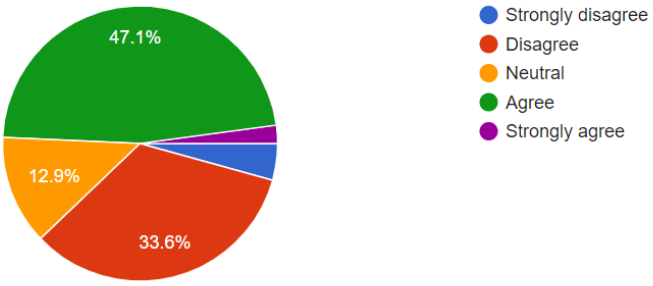
Private sectors participation in healthcare delivery through PPP will not aid them in making inroads / forays into newer investment opportunities in future.

140 responses



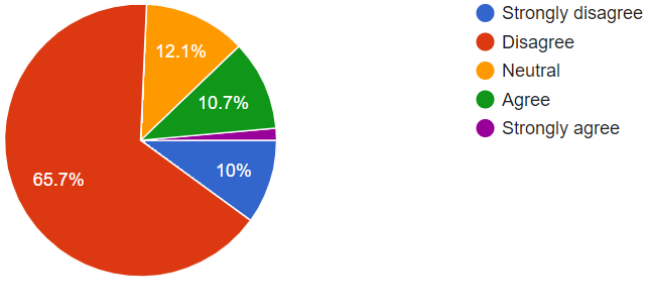
The private sector through Public Private Partnership alone cannot bridge the investment required in Indian Medical Service delivery.

140 responses



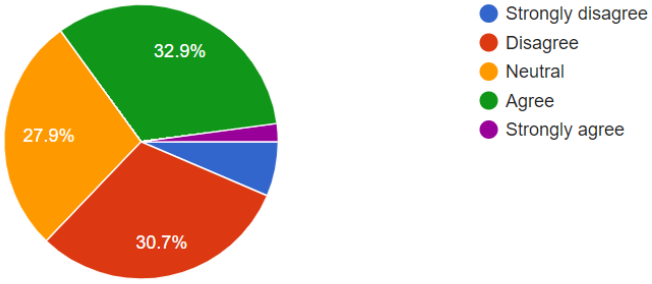
The government through Public Private Partnership is not likely to create a healthy and conducive environment towards aiding privatization in Healthcare Service delivery.

140 responses



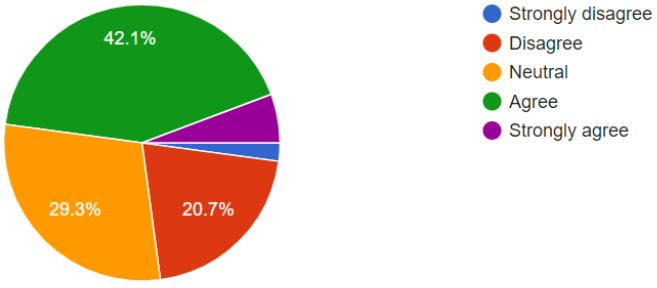
Public authorities do not encourage private investors to participate in Indian Healthcare Market.

140 responses



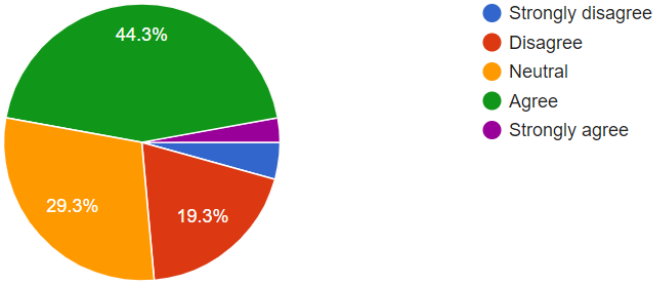
Supportive governmental policies with tangible benefits have not been issued to make it easy for private capital investment in Indian Healthcare Market through PPP.

140 responses



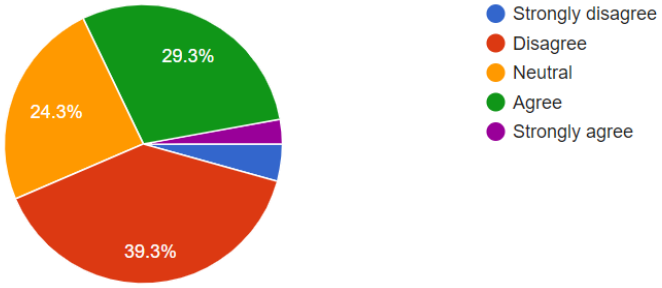
Official guidance and hand holding is not available to private sector in Indian Healthcare Market to establish partnership with public authorities and invest.

140 responses



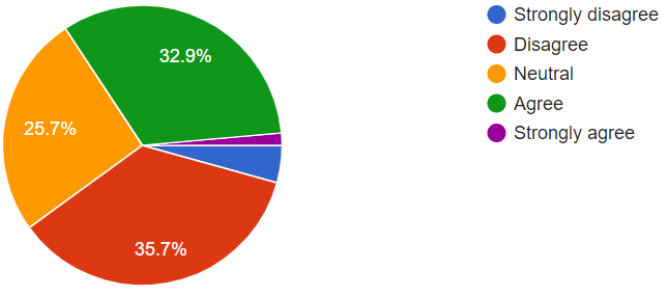
Private sector is just not keen to participate in Indian Healthcare Market via Public Private Partnership.

140 responses



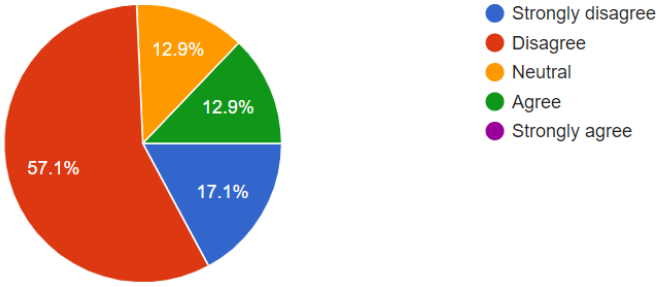
The private sector perceives that investing in Indian Healthcare Market by PPP is not a viable productive proposition when compared to other avenues.

140 responses



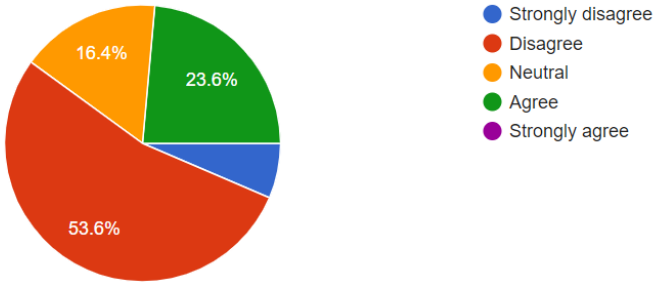
Instead of privatising completely Indian Healthcare Market, seeking private sector to invest by PPP is a bad business proposal.

140 responses



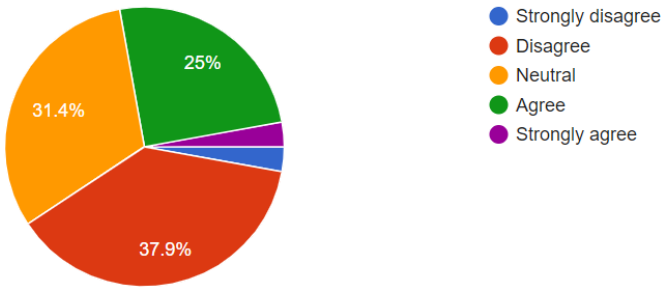
Indian Healthcare Service delivery under PPP would not be one of the preferred fields for private sector to invest.

140 responses



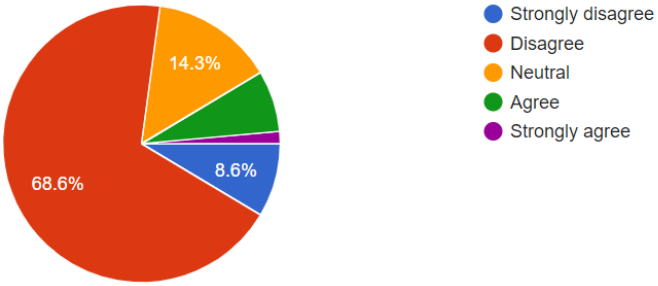
Private sector till date has not engaged itself in Indian Healthcare via Public Private Partnership.

140 responses



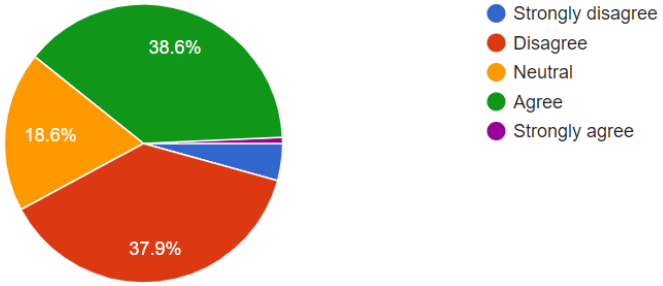
Public Private Partnership is just not the right model suited in healthcare for improving the general wellbeing of the population in urban & rural areas.

140 responses



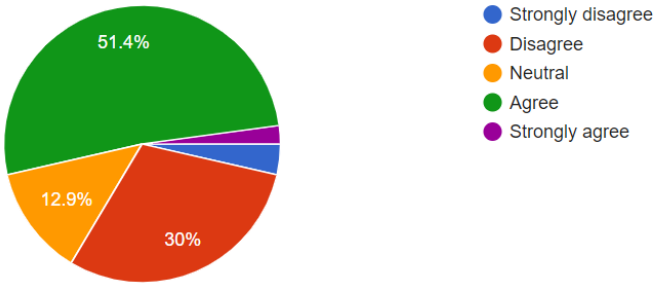
Success in a few isolated cases may not necessarily open flood gates encouraging other private players to invest heavily in Indian Healthcare Market via PPP.

140 responses



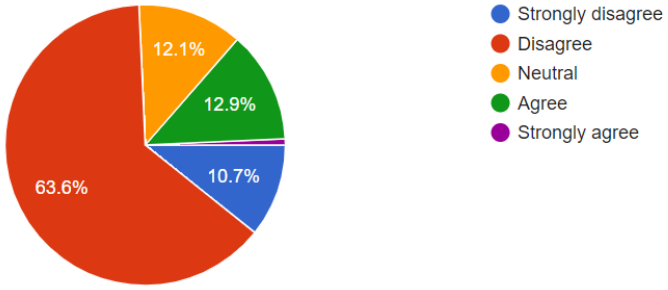
Under PPP in healthcare, private sector cannot be expected to push in investment regularly and endlessly.

140 responses



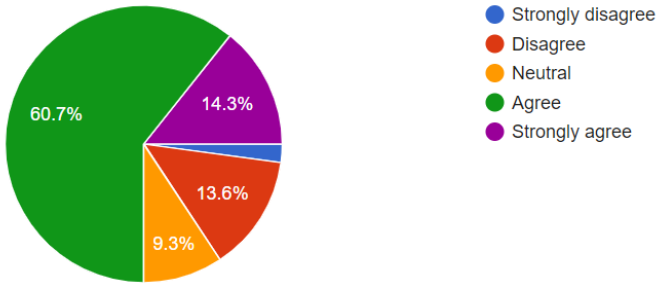
In healthcare delivery service, private sector participation via PPP will not enhance healthcare access and reach to all citizens of the country.

140 responses



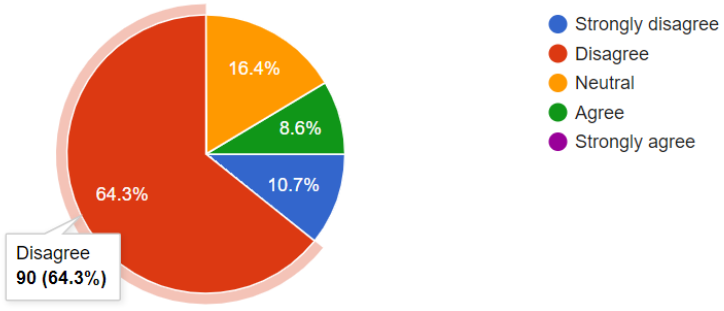
Private sector involvement in medical services delivery via Public Private Partnership (PPP) will improve the operational efficiency of healthcare facilities.

140 responses



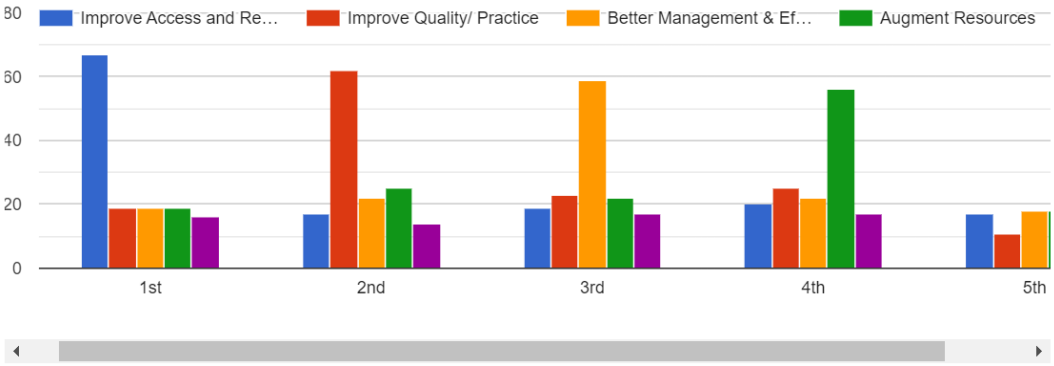
Extensive participation of private sector via PPP would still not improve the quality of healthcare infrastructure in the country.

140 responses



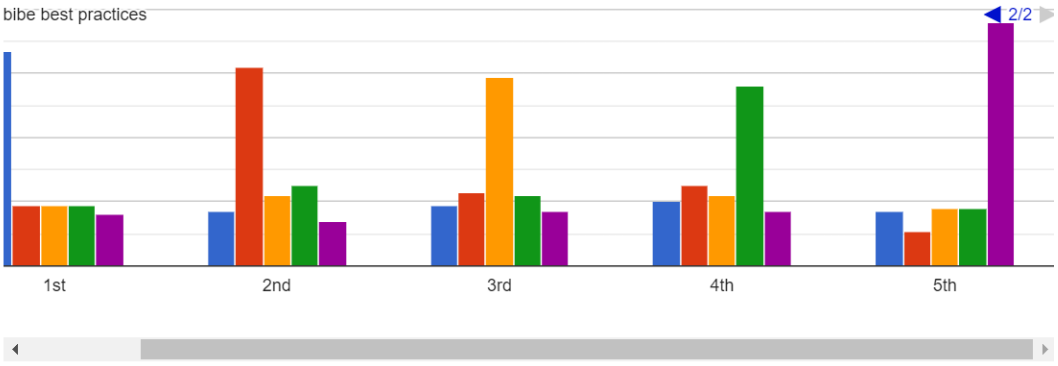
1/2

Rank order on a scale of 1 to 5 with 1 being most important, the benefits of Public Private Partnership (PPP) in Indian Healthcare Service delivery



2/2

Rank order on a scale of 1 to 5 with 1 being most important, the benefits of Public Private Partnership (PPP) in Indian Healthcare Service delivery



Any other comments/ suggestions/ recommendations

22 responses

Nil

With access to technology ppp best model

The benefits of public private partnership in Indian healthcare service will definitely increase its reach to common masses and increase efficiency.

Nik

All the best

Privatr Public Partnership is the only way forward to enhance the health care quality and infrastructire primarily in Rural India.Though it appears to be a distant dream,am hopeful that if the stakeholders are forthcoming and there is a WILL India would set an example to the third world countries and lead the way.

Continued below

Any other comments/ suggestions/ recommendations

22 responses

PPP can initially commence from templates that can easily be replicated. For example a CT/MRI scan/ Pathology lab etc alongside in the premises of a govt hospital wherein the land could be that of govt and the infrastructure could be created by private players on BOT (Build, operate & transfer basis).

However, medical infrastructure is a capital intensive proposition and hence, government should encourage easy, long-term soft loans from PSU Banks for the sector.

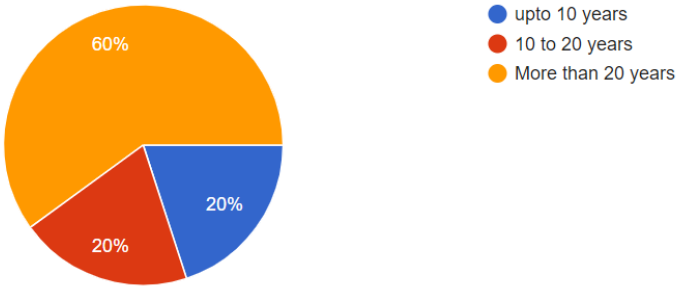
There's a huge scope of replicating success of world class roads and airports, now available to Indian consumer under PPP, which would otherwise have been a far fetched dream if govt were to completely finance and own such infrastructure. Also, quality and management too wouldn't be half as good.

None

Since Health is a state subject, partial PPP in healthcare sector has already been there for a while in some states . However , a national level mandatory participation is required from the private sector with a parallel improvement in the Healthcare Cadre management as well as an augmented healthcare budget. The load of the burgeoning population on the healthcare services is already overstretching the healthcare sector and needs to be addressed asap.

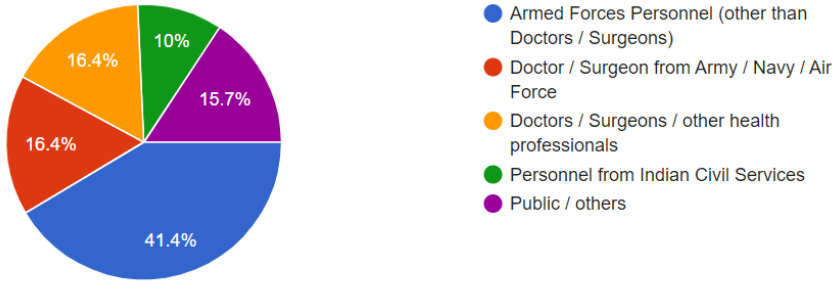
Working Experience in years

140 responses



Occupation

140 responses



Appendix D

Summary of Responses

Q1 Investment Opportunities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	11	7.9	7.9	7.9
	Disagree	44	31.4	31.4	39.3
	Neutral	21	15.0	15.0	54.3
	Agree	55	39.3	39.3	93.6
	Strongly Agree	9	6.4	6.4	100.0
	Total	140	100.0	100.0	

Q2 Operational Benefits

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	15	10.7	10.7	10.7
	Disagree	66	47.1	47.1	57.9
	Neutral	18	12.9	12.9	70.7
	Agree	38	27.1	27.1	97.9
	Strongly Agree	3	2.1	2.1	100.0
	Total	140	100.0	100.0	

Q3 Competitiveness in Clinical Work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	17	12.1	12.1	12.1
	Disagree	88	62.9	62.9	75.0
	Neutral	11	7.9	7.9	82.9
	Agree	23	16.4	16.4	99.3
	Strongly Agree	1	.7	.7	100.0
	Total	140	100.0	100.0	

Q4 Enhanced Capacity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	39	27.9	27.9	27.9
	Disagree	78	55.7	55.7	83.6
	Neutral	7	5.0	5.0	88.6
	Agree	13	9.3	9.3	97.9
	Strongly Agree	3	2.1	2.1	100.0
	Total	140	100.0	100.0	

Q5 Competitiveness in Non Clinical Work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	16	11.4	11.4	11.4
	Disagree	90	64.3	64.3	75.7
	Neutral	18	12.9	12.9	88.6
	Agree	16	11.4	11.4	100.0
	Total	140	100.0	100.0	

Q6 Improved Social Standing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	23	16.4	16.4	16.4
	Disagree	91	65.0	65.0	81.4
	Neutral	12	8.6	8.6	90.0
	Agree	14	10.0	10.0	100.0
	Total	140	100.0	100.0	

Q7 Recognition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	20	14.3	14.3	14.3
	Disagree	82	58.6	58.6	72.9
	Neutral	19	13.6	13.6	86.4
	Agree	19	13.6	13.6	100.0
	Total	140	100.0	100.0	

Q8 Benefits to Stakeholders

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	22	15.7	15.7	15.7
	Disagree	90	64.3	64.3	80.0
	Neutral	11	7.9	7.9	87.9
	Agree	15	10.7	10.7	98.6
	Strongly Agree	2	1.4	1.4	100.0
	Total	140	100.0	100.0	

Q9 Comprehensive Healthcare Service

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	28	20.0	20.0	20.0
	Disagree	88	62.9	62.9	82.9
	Neutral	14	10.0	10.0	92.9
	Agree	10	7.1	7.1	100.0
	Total	140	100.0	100.0	

Q10 Acquired Expertise

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	21	15.0	15.0	15.0
	Disagree	84	60.0	60.0	75.0
	Neutral	16	11.4	11.4	86.4
	Agree	18	12.9	12.9	99.3
	Strongly Agree	1	.7	.7	100.0
	Total	140	100.0	100.0	

Q11 Future Investment Oppurtunities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	24	17.1	17.1	17.1
	Disagree	86	61.4	61.4	78.6
	Neutral	16	11.4	11.4	90.0
	Agree	14	10.0	10.0	100.0
	Total	140	100.0	100.0	

Q12 Bridge Investment Gap

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	4.3	4.3	4.3
	Disagree	47	33.6	33.6	37.9
	Neutral	18	12.9	12.9	50.7
	Agree	66	47.1	47.1	97.9
	Strongly Agree	3	2.1	2.1	100.0
	Total	140	100.0	100.0	

Q13 Conducive Environment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	14	10.0	10.0	10.0
	Disagree	92	65.7	65.7	75.7
	Neutral	17	12.1	12.1	87.9
	Agree	15	10.7	10.7	98.6
	Strongly Agree	2	1.4	1.4	100.0
	Total	140	100.0	100.0	

Q14 Encouragement by Public Authorities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	9	6.4	6.4	6.4
	Disagree	43	30.7	30.7	37.1
	Neutral	39	27.9	27.9	65.0
	Agree	46	32.9	32.9	97.9
	Strongly Agree	3	2.1	2.1	100.0
	Total	140	100.0	100.0	

Q15 Supportive Governmental Policies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	2.1	2.1	2.1
	Disagree	29	20.7	20.7	22.9
	Neutral	41	29.3	29.3	52.1
	Agree	59	42.1	42.1	94.3
	Strongly Agree	8	5.7	5.7	100.0
	Total	140	100.0	100.0	

Q16 Official Guidance & Assistance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	4.3	4.3	4.3
	Disagree	27	19.3	19.3	23.6
	Neutral	41	29.3	29.3	52.9
	Agree	62	44.3	44.3	97.1
	Strongly Agree	4	2.9	2.9	100.0
	Total	140	100.0	100.0	

Q17 Keenness

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	4.3	4.3	4.3
	Disagree	55	39.3	39.3	43.6
	Neutral	34	24.3	24.3	67.9
	Agree	41	29.3	29.3	97.1
	Strongly Agree	4	2.9	2.9	100.0
	Total	140	100.0	100.0	

Q18 Viability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	4.3	4.3	4.3
	Disagree	50	35.7	35.7	40.0
	Neutral	36	25.7	25.7	65.7
	Agree	46	32.9	32.9	98.6
	Strongly Agree	2	1.4	1.4	100.0
	Total	140	100.0	100.0	

Q19 Advantage of PPP over Privatisation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	24	17.1	17.1	17.1
	Disagree	80	57.1	57.1	74.3
	Neutral	18	12.9	12.9	87.1
	Agree	18	12.9	12.9	100.0
	Total	140	100.0	100.0	

Q20 Preference to Invest

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	9	6.4	6.4	6.4
	Disagree	75	53.6	53.6	60.0
	Neutral	23	16.4	16.4	76.4
	Agree	33	23.6	23.6	100.0
	Total	140	100.0	100.0	

Q21 Current Engagement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	2.9	2.9	2.9
	Disagree	53	37.9	37.9	40.7
	Neutral	44	31.4	31.4	72.1
	Agree	35	25.0	25.0	97.1
	Strongly Agree	4	2.9	2.9	100.0
	Total	140	100.0	100.0	

Q22 Suitability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	12	8.6	8.6	8.6
	Disagree	96	68.6	68.6	77.1
	Neutral	20	14.3	14.3	91.4
	Agree	10	7.1	7.1	98.6
	Strongly Agree	2	1.4	1.4	100.0
	Total	140	100.0	100.0	

Q23 Encouragement for Other Private Players

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	4.3	4.3	4.3
	Disagree	53	37.9	37.9	42.1
	Neutral	26	18.6	18.6	60.7
	Agree	54	38.6	38.6	99.3
	Strongly Agree	1	.7	.7	100.0
	Total	140	100.0	100.0	

Q24 Regular Investment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	5	3.6	3.6	3.6
	Disagree	42	30.0	30.0	33.6
	Neutral	18	12.9	12.9	46.4
	Agree	72	51.4	51.4	97.9
	Strongly Agree	3	2.1	2.1	100.0
	Total	140	100.0	100.0	

Q25 Access and Reach

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	15	10.7	10.7	10.7
	Disagree	89	63.6	63.6	74.3
	Neutral	17	12.1	12.1	86.4
	Agree	18	12.9	12.9	99.3
	Strongly Agree	1	.7	.7	100.0
	Total	140	100.0	100.0	

Q26 Operational Efficiency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	2.1	2.1	2.1
	Disagree	19	13.6	13.6	15.7
	Neutral	13	9.3	9.3	25.0
	Agree	85	60.7	60.7	85.7
	Strongly Agree	20	14.3	14.3	100.0
	Total	140	100.0	100.0	

<u>Note</u> : Q26 (Operational Efficiency) was reverse coded question. Response shown here is of original question. In data analysis, responses have been reversed computed.

Q27 Quality Improvement of Healthcare

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	15	10.7	10.7	10.7
	Disagree	90	64.3	64.3	75.0
	Neutral	23	16.4	16.4	91.4
	Agree	12	8.6	8.6	100.0
	Total	140	100.0	100.0	

Appendix E

One-Way Annova of Responses

1. One-Way Anova of Five Constructs Based on Experience

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
CONST1_AB	Between Groups	.146	2	.073	.149	.862
	Within Groups	66.904	137	.488		
	Total	67.050	139			
CONST2_SN	Between Groups	2.445	2	1.222	2.458	.089
	Within Groups	68.142	137	.497		
	Total	70.587	139			
CONST3_PBC	Between Groups	.828	2	.414	.883	.416
	Within Groups	64.165	137	.468		
	Total	64.993	139			
CONST4_FC	Between Groups	.862	2	.431	.896	.411
	Within Groups	65.897	137	.481		
	Total	66.758	139			
CONST5_BI	Between Groups	1.166	2	.583	2.099	.127
	Within Groups	38.050	137	.278		
	Total	39.216	139			

2. One-Way Anova of Five Constructs Based on Occupation

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
CONST1_AB	Between Groups	.175	4	.044	.088	.986
	Within Groups	66.875	135	.495		
	Total	67.050	139			
CONST2_SN	Between Groups	2.854	4	.713	1.422	.230
	Within Groups	67.733	135	.502		
	Total	70.587	139			
CONST3_PBC	Between Groups	1.805	4	.451	.964	.429
	Within Groups	63.188	135	.468		
	Total	64.993	139			
CONST4_FC	Between Groups	3.974	4	.994	2.136	.080
	Within Groups	62.784	135	.465		
	Total	66.758	139			
CONST5_BI	Between Groups	3.498	4	.875	3.305	.013
	Within Groups	35.718	135	.265		
	Total	39.216	139			

3. **Post Hoc Test (Tukey HSD) for Construct 5 (BI) based on 'Occupation' to Identify Variation in Mean**

Multiple Comparisons

Dependent Variable: CONST5_BI

Tukey HSD

(I) Occupation	(J) Occupation	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Armed Forces Personnel (other than Doctors / Surgeons)	Doctor / Surgeon from Army / Navy / Air Force	-.32084	.12675	.090	-.6713	.0296
	Personnel from Indian Civil Services	-.09695	.15317	.969	-.5205	.3266
	Doctors / Surgeons / other health professionals	-.20226	.12675	.503	-.5527	.1482
	Public / others	-.40510*	.12879	.017	-.7612	-.0490
Doctor / Surgeon from Army / Navy / Air Force	Armed Forces Personnel (other than Doctors / Surgeons)	.32084	.12675	.090	-.0296	.6713
	Personnel from Indian Civil Services	.22388	.17436	.701	-.2582	.7060
	Doctors / Surgeons / other health professionals	.11858	.15168	.936	-.3008	.5380
	Public / others	-.08426	.15339	.982	-.5084	.3399
Personnel from Indian Civil Services	Armed Forces Personnel (other than Doctors / Surgeons)	.09695	.15317	.969	-.3266	.5205
	Doctor / Surgeon from Army / Navy / Air Force	-.22388	.17436	.701	-.7060	.2582
	Doctors / Surgeons / other health professionals	-.10531	.17436	.974	-.5874	.3768
	Public / others	-.30815	.17585	.406	-.7944	.1781
Doctors / Surgeons / other health professionals	Armed Forces Personnel (other than Doctors / Surgeons)	.20226	.12675	.503	-.1482	.5527
	Doctor / Surgeon from Army / Navy / Air Force	-.11858	.15168	.936	-.5380	.3008
	Personnel from Indian Civil Services	.10531	.17436	.974	-.3768	.5874
	Public / others	-.20284	.15339	.678	-.6270	.2213
Public / others	Armed Forces Personnel (other than Doctors / Surgeons)	.40510*	.12879	.017	.0490	.7612
	Doctor / Surgeon from Army / Navy / Air Force	.08426	.15339	.982	-.3399	.5084
	Personnel from Indian Civil Services	.30815	.17585	.406	-.1781	.7944
	Doctors / Surgeons / other health professionals	.20284	.15339	.678	-.2213	.6270

*. The mean difference is significant at the 0.05 level.

CONST5_BI

Tukey HSD[a,b]

Occupation	N	Subset for alpha = 0.05
		1
Armed Forces Personnel (other than Doctors / Surgeons)	58	2.4420
Personnel from Indian Civil Services	14	2.5390
Doctors / Surgeons / other health professionals	23	2.6443
Doctor / Surgeon from Army / Navy / Air Force	23	2.7628
Public / others	22	2.8471
Sig.		.067

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 22.616.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Appendix F

ANALYSIS OF RANK ORDER QUESTION

Henry Garrett Ranking Technique

1. Henry Garrett ranking method can be used for analysis of any rank order question irrespective of the number of responses ranked by a respondent (even if there are missing observations). The technique was used to analsye the rank given by the respondents from 1 to 5 (in decreasing order of preference) to the questions '**Benefits accrued by Public Private Partnership in Indian Healthcare Service delivery**'

2. The rank order given by the respondents was converted into ranks by using the following formula:-

Percentage Position = 100 (Rij – 0.5)/ Nj

(A)

where Rij – is the Rank given for the ith item by the jth individual.

Nj – is the number of items ranked by the jth individual.

3. The percentage position obtained is then converted into a score with the aid of Garrett's conversion table (refer Figure below). The mean is then computed and ranks are assigned to the respective ranked items. The item with the highest mean is ranked first in the order

of importance. The other items are then ranked in a descending order on the basis of the calculated means.

4. The percentage positions obtained for ranking the five reasons for sub- optimal performance using Equation (A) above, are as indicated at Table below. Garrett Values corresponding to each percentage position are then obtained from the Garett Ranking Conversion Table.

Rank	**1**	**2**	**3**	**4**	**5**
Percentage Position	10	30	50	70	90
Garrett Value	75	60	50	40	24

GARRETT RANKING CONVERSION TABLE

The conversion of orders of merits into units of amount of "socres"

Percent	Score	Percent	Score	Percent	Score
0.09	99	22.32	65	83.31	31
0.20	98	23.88	64	84.56	30
0.32	97	25.48	63	85.75	29
0.45	96	27.15	62	86.89	28
0.61	95	28.86	61	87.96	27
0.78	94	30.61	60	88.97	26
0.97	93	32.42	59	89.94	25
1.18	92	34.25	58	90.83	24
1.42	91	36.15	57	91.67	23
1.68	90	38.06	56	92.45	22
1.96	89	40.01	55	93.19	21
2.28	88	41.97	54	93.86	20
2.69	87	43.97	53	94.49	19
3.01	86	45.97	52	95.08	18
3.43	85	47.98	51	95.62	17
3.89	84	50.00	50	96.11	16
4.38	83	52.02	49	96.57	15
4.92	82	54.03	48	96.99	14
5.51	81	56.03	47	97.37	13
6.14	80	58.03	46	97.72	12
6.81	79	59.99	45	98.04	11
7.55	78	61.94	44	98.32	10
8.33	77	63.85	43	98.58	9
9.17	76	65.75	42	98.82	8
10.06	75	67.48	41	99.03	7
11.03	74	69.39	40	99.22	6
12.04	73	71.14	39	99.39	5
13.11	72	72.85	38	99.55	4
14.25	71	74.52	37	99.68	3
15.44	70	76.12	36	99.80	2
16.69	69	77.68	35	99.91	1
18.01	68	79.17	34	100.00	0
19.39	67	80.61	33		
20.93	66	81.99	32		

Calculation of Rank Order Questions for Sample Data Set

5. Question 28 (Benefits accrued by Public Private Partnership in Indian Healthcare Service delivery). Responses of 140respondents are as summarized below:

Benefits of Public Private Partnership (PPP) in Indian Healthcare Service delivery	1	2	3	4	5
Improve Access and Reach	67	17	19	20	17
Improve Quality/ Practice	19	62	23	25	11
Better Management & Efficiency	19	22	59	22	18
Augment Resources	19	25	22	56	18
Imbibe Best Practices	16	14	17	17	76

6. The cumulative totals obtained for each rank are then multiplied by the Garrett Value obtained earlier in Para 4. The products are then summed up for each Option and a mean is calculated by dividing it by the number of respondents. The resulting means are arranged in descending order to obtain a composite ranking.

Benefits of Public Private Partnership (PPP) in Indian Healthcare Service delivery	1	2	3	4	5	Total	Mean (Total/No. of Responses (140)	Final Rank
Improve Access and Reach	5025	1020	950	800	408	8203	58.59	**1**
Improve Quality/ Practice	1425	3720	1150	1000	264	7559	53.99	**2**
Better Management & Efficiency	1425	1320	2950	880	432	7007	50.05	**3**
Augment Resources	1425	1500	1100	2240	432	6697	47.84	**4**
Imbibe Best Practices	1200	840	850	680	1824	5394	38.53	**5**

7. The results of Henry Garrett method was cross-checked using the conventional numerical method of calculating the rank order question. Each rank has been multiplied by a corresponding value and the cumulative total has been calculated by adding all the responses for each rank under each option and indicated in the total column. Both methods have given the same results.

Benefits of Public Private Partnership (PPP) in Indian Healthcare Service delivery	Rank 1 (A)	Rank 2 (B)	Rank 3 (C)	Rank 4 (D)	Rank 5 (E)	Total (A*5 + B*4 + C*3 + D*2 + E*1)	Final Rank
Improve Access and Reach	67	17	19	20	17	517	**1**
Improve Quality/ Practice	19	62	23	25	11	473	**2**
Better Management & Efficiency	19	22	59	22	18	422	**3**
Augment Resources	19	25	22	56	18	391	**4**
Imbibe Best Practices	16	14	17	17	76	297	**5**