Abstract— the goods and service tax (GST) is a value added tax levied in India on the supply of goods and services. It is a comprehensive multistage, destination based on one nation one tax. Goods & Service Tax has made large scale changes in the working pattern of all the sectors of Indian Economy. One of the sectors is construction industry. GST on construction sector hiked to 18%. The government has hiked the Goods Service Tax Rate for the construction sector to 18% from 12%. But it also allowed deduction of land value equivalent to one third of total amount charged by the developer for GST calculation. In this paper the factors which affect the construction industry through GST is identified. And the analysis of identified factors has been done. Introduction of Goods & Service Tax has made large scale changes in the working pattern of all the sectors of Indian Economy. The Construction Sector, often known as an “unorganized sector” has been hit by it the most as in construction sector, there are large number of activities involved, a big budget is put up initially, knowledge regarding the document management as well as the management of financial aspects is not done as per the required terms. Often there are shortcuts taken to deal with the tax enhancing activities, which is making the construction industry prone to the bad effects of GST on its working and is regularizing the unorganized sector. There are myths that construction sector is facing a slow down due to GST, there is a rise in the cost of materials, machinery as well as man power due to GST, but the actual scenario is being studied by taking an existing building if construction as per the old system of taxation and if the same is constructed as per the GST regime. The difference in the cost is calculated on unit basis to check the effects of GST on Construction Sector.

Keywords— construction industry, good service tax (GST), economy, GST, Construction, Effects of GST, GST in Construction, Construction Cost for GST, Building Construction.

1. INTRODUCTION

The Construction Sector, often known as an unorganized sector has been hit by it the most as in construction sector, there are large number of activities involved, a big budget is admire initially, intelligence considerate the form management as well as the direction of economic aspects is not done as per the required terms. Often there are alternative taken to deal with the tax boost activities, which is making the construction industry level to the cursed effects of GST on its working and is assign the random sector. There are illusion that construction sector is facing a slow down due to GST, there is a growth in the cost of materials, devices as well as personnel due to GST, but the actual status is being calculation by taking an surviving building if construction as per the old system of tax collection and if the same is constructed as per the GST reign. Introduction of Goods & Service Tax has made enormous changes in the working pattern of all the sectors of Indian recession. The disparity in the cost is calculated on unit basis to check the effects of GST on Construction Sector.

The detailed studies starting from the incubation stage to the submitting stage would detail in where is the area of disquiet where the cost of project has affected due to GST appliance. These consideration not only give a fair drawing of what all area of concern are to be seen to close out the avoidable charge but it will also help the project executive to evaluate and form such itinerary. Those are met with as per the lineup cost and itinerary.

These alteration introduced a national Goods and Services Tax (GST) in India from 1 July 2017. The Goods and Service Tax Bill was approved in the SANSAD on March 30, 2017, with four extra commandments—

- The Central GST charge
- The Integrated GST charge
- The GST charge
- The Union Territory GST charge.
In Construction industry, there has always been a need to improvise the way of working to achieve better results, saving in time, energy and cost. In doing so, there are lot of shortcuts taken, lots of time saving activities are conducted which results in inadequate data regarding all aspects of the projects. There are certain things which are completely absent when it comes to documentation of all the project data on completion of project. In all these things, there exists a scope of improvement, in order to regularize this; the finance ministry has put up Goods & Service Tax (GST) in order to regularize the construction sector. Introduction of Goods & Service Tax (GST) by the government of India has led to a lot of ambiguity in the Construction industry because it’s not only a new thing to deal with but, it will also regularize the so called “Unorganized Sector”.

To arrive at a conclusion, detailed studies starting from the gestation phase to the handover phase would depict in detail where are the area of concern where the cost of project has affected due to GST implementation. These studies not only give a clearer picture of what all area of concern are to be seen to eliminate the unnecessary cost but it will also help the project manager to analyze and form such schedules that are met with as per the scheduled cost and time frame to nullify the effects of cost variation in the building construction industry. So, to get a clear picture of increase or decrease in cost due to GST, detailed study of a project before and after GST is done for a check in cost variation.

The GST has changed the entire outline of the oblique taxation system in India. It is considered as the biggest ever tax reform. GST undivided all the indirect taxes less than one gamp and created a soft national market. The main objective behind implementing GST is to avoid carbon copy of taxes and thus focus on one nation one tax. By 2020 the India Real Estate Sector is expected to grow annually. In Real estate sector, a huge percentage of each project costing goes unrecorded in the record. Real estate sector also has benefited with new tax law having a positive effect on all additional industries.

The introduction of GST at the Central level is not only include comprehensively more indirect Central taxes and integrate goods and service taxes for the purpose of set-off relief, but may also lead to revenue gain for the Centre through widening of the dealer base by capturing value addition in the distributive trade and increased compliance. In the GST, both the cascading effects of CENVAT and service tax are removed with set-off, and a constant chain of set-off from the original producer’s point and service provider’s point up to the retailer’s level is established which reduces the burden of all cascading effects. This is the real meaning of GST, and this is why GST is not simply VAT plus service tax but an improvement over the previous system of VAT and disjointed service tax. Moreover, with the introduction of GST, burden of Central Sales Tax (CST) will also be removed. The GST at the State-level is, therefore, justified for-

- Additional Power of Levy of Taxation of Services for the States
- System of Comprehensive Set-off Relief
- Subsuming of Several Taxes in the GST
- Removal of Burden of CST

Engineer to study the GST impact, for the same following points can be stated for which a Civil Engineer needs to study GST & it’s consequences in construction sector:

- High Initial Investing Sector.
- Contractor’s Relied on Labour’s.
- Service Charges.
- Machinery Cost.
- Material Cost.
- Man Power Cost.
- Rate of Interest on Borrowings.

Building material costs are the major components in construction development costs while GST implementation has been identified to have inflated the construction material prices within a year of implementation. Findings as shown in Table 1 indicate that all building materials set the highest cost increase after GST implementation is not surprising as prior to GST implementation only second schedule materials were being charged of sales and service tax (SST). On the other hand, GST had also led to an increment to the land acquisition cost although supply of land for housing properties is exempted from GST. Hence, the argument of Dato’ Subromaniam Holsay saying that the “biggest cost components” which is land being exempted from GST would lead to cost saving for housing developers is imprecise. Besides, marketing costs has also been raised after GST implementation which may be a result of developers outsourcing marketing agents to help them boost the sales of. Moreover, labour cost as indicated at Table 1 does not get a significant GST impact as neither increase nor decrease.

GST, which has been one of the longest awaited tax reforms, got unanimous approval of both houses of parliament this monsoon session. Union government of India has set a deadline of April 2017 for its roll out how it might impact taxes in residential real estate transactions has got varied views of industry experts. Let’s first understand the various taxes applicable in a residential real estate transaction.

1. Service Tax – If you are purchasing an under-construction property, developer will have to charge you service tax and deposit it with central government. This tax was not applicable till 1st July 2010. The key reason for the same was contract between builder and buyer for construction of residential unit was disputed as works contract as it also includes value of land. Hence rules regarding taxes on work contract were not applicable on residential complex construction. In finance act 2010, government added an explanation to definition of construction of residential complex and made it deemed service. For the simplicity sake government has given abatement of 3/4th of cost of unit as land and goods for construction and only 1/4th of the cost of unit is treated as service. Hence presently most homebuyers are paying 3.75% of cost of unit as service tax (1/4th of 15%). Recently service tax on under construction property has again been put under question as Delhi High Court ruled against this and matter is sub-judice at Supreme Court of India.

2. VAT (Value Added Tax) – If you are purchasing an under-construction property, you will have to pay additional VAT in

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some states such as Karnataka, Haryana and Maharashtra. Developers charge this value added tax and deposit it with state government. VAT has also been under dispute for long time and still there are many states such as UP who do not charge VAT. Also unlike service tax there is no uniform way of computing VAT across states. E.g. in Maharashtra under composition scheme VAT is charged as 1% of agreement value whereas in Haryana the same proposal was passed but not yet agreed by developers. In Karnataka VAT is charged at 5% of agreement value of unit. To calculate accurate value of VAT and not use composition scheme, developers will have to maintain proper accounts of goods purchased for construction and VAT paid by them for the same to get input credits which is cumbersome and makes it tough for buyers to understand.

3. Stamp Duty – Stamp duty is charged by state government, again at varying rates, for registration of sale agreement for real estate transactions

Incidentally if you are buying a ready to move-in property directly from developer after he has obtained completion certificate from authority, you don’t need to pay service tax and VAT hence saving 3.75% to 9% of property cost depending on state where you are buying property. Now lets understand how GST will impact these three taxes. Service Tax and VAT will be replaced by Central GST and State GST whereas stamp duty stay unchanged as it is out of purview of GST.

1.1 BACKGROUND

The Roles of Construction Actors in Construction cost there are diverse interests in the construction industry. The principal interest or actors in the construction industry are:

- The Client
- The Consultant
- The Contractor

The Client is, by far, the single most important member of the construction team. He is the initiator and financier of all the projects. Noted that the major contribution the client can make to the successful operations of the construction industry lies in his skill in specifying his needs prior to the preparation of the design. It is also important for the client to set cost limits of the project at the briefing. He should also ensure that adequate financial provisions are made prior to the commencement of any project.

The Consultant Cost considerations are among the most important and basic considerations that Consultants must deal with. It is essential to see that projects are contained within the client’s budget and cost forecasts. Cost has the final control over virtually every project. Accurate cost analysis and control is one of the necessary services the client requires from the consultants.

The Contractor further reveals that the major task of Contractors is to assemble and allocate the resources of labour, equipment and materials to the project in order to achieve completion at maximum efficiency in terms of time, quality and cost.

Tax policies play an important role on the economy through their impact on both efficiency and equity. A good tax system should keep in view issues of income distribution and, at the same time, also endeavor to generate tax revenues to support government expenditure on public services and infrastructure development. Cascading tax revenues have differential impacts on firms in the economy with relatively high burden on those not getting full offsets. Analysis of the tax levy can be extended to international competitiveness of the adversely affected sectors of production in the economy. Such domestic and international factors lead to inefficient allocation of productive resources in the economy. This results in loss of income and welfare of the affected economy.

Even though the country has moved on the path of tax reforms since yet there are various issues which need to be restructured so as to boost productivity and international competitiveness of the Indian exporters.

- Sales of services to consumers are not appropriately taxed with many types of services escaping the tax net.
- Intermediate purchases of inputs by the business firms do not get full offset and part of non-offset taxes may get added up in prices quoted for exports thus making exporters less competitive in world markets.
- With the implementation of Goods & Service Tax (GST), it seems beastly important for civil Engineers, Architects, Chartered Accountants, Builders & other allied agencies relating to manufacture activities to study, understand & correspondingly implement these new forms in their actual & impending projects.
- Working, testing & research referring to this topic have been done under the realm Project/Construction Management.
- With the implementation of one nation One Tax there has been a forceful change in the working situation of the construction industry which has led to changing costing of labourers, construction materials, and equipment referring to construction, automation used in construction, which has ultimately affected the cost of construction as well as the cost of obtaining & advertise of properties.

Detailed analysis of both the act gave a positive conclusion as ultimately both these reforms are regularizing the so called “Disorganized Industry”.

Basic approach to understand the actual impact of GST on building construction is to compute the cost of construction of a structure before & after implementation of GST.

Basic assumption in cost analysis is that the time frame of construction of the project is same, only the change in taxation on the basic cost are studied & arrived at the impact on cost of construction.

1.2 RELATED WORK

In the earlier indirect tax regime, there were many indirect taxes levied by both state and center. States mainly collected taxes in the form of Value Added Tax (VAT). Every state had a different set of rules and regulations. Interstate sale of goods was taxed by the Centre. CST (Central State Tax) was applicable in case of interstate sale of goods.

Other than above there were many indirect taxes like entertainment tax, octopi and local tax that was levied by state and center. This led to a lot of overlapping of taxes levied by both state and center. For example, when goods were manufactured and sold, excise duty was charged by the center. Over and above Excise Duty, VAT was also charged by the
State. This lead to a tax on tax also known as the cascading effect of taxes. The following is the list of indirect taxes in the pre-GST regime:

- Central Excise Duty
- Duties of Excise
- Additional Duties of Excise
- Additional Duties of Customs
- Special Additional Duty of Customs
- CESS
- State VAT
- Central Sales Tax
- Purchase Tax
- Luxury Tax
- Entertainment Tax
- Entry Tax
- Taxes on advertisements
- Taxes on lotteries, betting, and gambling

CGST, SGST, and IGST have replaced all the above taxes. However, the chargeability of CST for Inter-state purchase at a concessional rate of 2%, by issue and utilization of c-Form is still prevalent for certain Non-GST goods such as:

- Petroleum crude
- High-speed diesel
- Motor spirit (commonly known as petrol)
- Natural gas
- Aviation turbine fuel
- Alcoholic liquor for human consumption, in respect of following transactions only.
  - Resale
  - Use in manufacturing or processing
  - Use in the telecommunication network or in mining or in the generation or distribution of electricity or any other power

Goods and Services Tax (GST) in India is proposed to be the maiden reform (and not an amendment) in the existing indirect taxation structure. The proposed GST is a long pending and much awaited tax reform in India which is hoped to iron out the wrinkles in the existing indirect taxation system. This comprehensive tax policy is expected to be one of the most important contributors to the India growth story (An insight of GST in India, Tax Research Department, and the Institute of Cost Accountants of India. Implementation of GST will have a far reaching impact on all the industrial sectors including real estate. The real estate sector is one of the most globally recognized sectors. In India, real estate is the second largest employer after agriculture and is slated to grow at 30 per cent over the next decade.

### 1.3 AIMS AND NEED OF GST STUDY

Construction industry comes under the Industry Sector out of the three sectors of Indian Economy. As it is a known fact that India is one of the fastest growing economies, there is lot of infrastructure development going on in the country to constantly grow at this faster rate of growth in the range of 6-7%. In the second quarter of 2017, growth rate of Indian Economy was at 7.2% which surpassed China too. Contribution of industrial sector to GDP is 29% of the total GDP. In this 29%, construction industry contributes to 11% of the industry sector. This seems to be a big digit when it comes to revenue generation of the nation. Even the latest annual budget has given due importance to the infrastructure development as a country is said to be developed if it has the best infrastructure facilities which invites other sectors, leading to generation of revenue and growth of country.

The study has the following objectives:

- To understand the concept of GST
- To understand the current scenario of real estate sector in India
- To analyze the possible impact of GST on the Construction Industry

Construction industry comes under the Industry Sector out of the three sectors of Indian Economy. As it is a known fact that India is one of the fastest growing economy, there is lot of infrastructure development going on in the country to constantly grow at this faster rate of growth in the range of 6-7%. In the second quarter of 2017, growth rate of Indian Economy was at 7.2% which surpassed China too. Contribution of industrial sector to GDP is 29% of the total GDP. In this 29%, construction industry contributes to 11% of the industry sector. This seems to be a big digit when it comes to revenue generation of the nation. Even the latest annual budget has given due importance to the infrastructure development as a country is said to be developed if it has the best infrastructure facilities which invites other sectors, leading to generation of revenue and growth of country.

### I. LITERATURE REVIEW

A Study on Growth of Goods and Services Tax (GST) in India an Golden Opportunity for Growth of Indian Corporate Sectors

**Author:** Bar hate (2018)

**Abstract:** Found that people have no doubt whatsoever regarding the proposed benefits of GST irrespective of their business type, legal status of business for the reason being they feel irritated by the present system which appears to be cumbersome. Most respondents believe that GST will bring monetary gains to their business and do not anticipate any significant boost in tax compliance costs. Interestingly, respondents expect the spending on tax compliance to go down after GST is implemented. The lack of information coupled with the apathy towards reforms may paralyze the speedy implementation of this system especially in small towns where still not a single orientation programs have been planned and executed till date by competent authorities.

GST in India: A Big Leap in the Indirect Taxation System

**Author:** Dr. R. Vasanthagopal (2011)

**Abstract:** The replacement of the Central excise duty of the government of India by Central Value Added Tax (CENVAT) and sales tax system of the State governments by the VAT marked a major mile stone in the reform process of indirect taxes in India. It addressed the cascading effect under the erstwhile system by giving set-off for tax paid on inputs as well as tax paid on previous purchases and resulted in a major simplification of the rate structure and broadening of the tax base. But both the CENVAT and the State VAT have certain incompleteness. Though a number of initiatives by the various machineries at the Centre, the present taxation regime is marked as cumbersome, complicated and unfriendly. It is in this perspective, the Central government has entrusted chairman of 13th Finance Commission to suggest a rational, scientific and modern but unified system of taxation in tune with developed nations form the base behind the introduction of Goods and Service Tax (GST) in India. Although there are many hurdles to be crossed before the implementation of GST the Central government reiterated its commitment towards the adoption of a ‘flawless’ GST for the survival of the India’s economy in the face of increasing international
competition consequent to globalization and liberalization. Despite the various impediments to the proposed transition, until the time GST is implemented, it would be worthwhile to assess its positive impacts on the various development areas viz. agriculture, manufacturing industry, MSME, housing, poverty reduction, employment, price level, EXIM trade, GDP, government revenue, etc. and this aspect is the subject matter of this paper

Building Construction: Before & After GST
Meet H. Rawal et al. (2018)
Introduction of Goods & Service Tax has made large scale changes in the working pattern of all the sectors of Indian Economy. The Construction Sector, often known as an “unorganized sector” has been hit by it the most as in construction sector, there are large number of activities involved, a big budget is put up initially, knowledge regarding the document management as well as the management of financial aspects is not done as per the required terms. Often there are shortcuts taken to deal with the tax enhancing activities, which is making the construction industry prone to the bad effects of GST on its working and is regularizing the unorganized sector. There are myths that construction sector is facing a slow down due to GST, there is a rise in the cost of materials, machinery as well as man power due to GST, but the actual scenario is being studied by taking an existing building if construction as per the old system of taxation and if the same is constructed as per the GST regime. The difference in the cost is calculated on unit basis to check the effects of GST on Construction Sector. In Construction industry, there has always been a need to improvise the way of working to achieve better results, saving in time, energy and cost. In doing so, there are lot of shortcuts taken, lots of time saving activities are conducted which results in inadequate data regarding all aspects of the projects.

Goods and Services Tax (GST) in India – An Overview and impact
Songara Manoj et al. (2019)
GST would be a major move towards Indian economy as since independence India has faced some of the issues because of complex indirect tax system, this complexity is assumed to be resolved by present GST structure replacing all state and central indirect taxes in to one simple unique tax.1 GST is a comprehensive indirect tax on manufacture, sale and consumption of goods and services at national level. One of the biggest taxation reforms in India is the (GST) all set to integrate state economies and boost overall growth. The aim of this research paper is regarding impact of GST and its impact on various sectors. With the introduction of GST, there is chaos and confusion among common man. GST bill will be a form for economic integration of India. The main trait of the GST is to transform India into a unified market by dismantling the present fiscal barrier among states and can expect improved tax compliance. There would be only one tax that too at the nation all Level, monitored by the central government. GST is also different in the way it is levied at the final point of consumption and not at the manufacturing stage.

Computation of impact of GST revision on net property prices
Author: April 2019
Abstract: With regard to those properties where construction work has already begun, Jaitley said a committee of officers will draft the transition rules and frame guidelines. “The fitment committee and law committee, by March 10, 2019 will draft those guidelines and immediately place before the GST Council, which will meet via video conference so that ministers do not have to travel to Delhi in election period,” he said. To ensure that the real estate sector does not go back to a cash economy and to fix the accountability of back supply chain, a very high percentage of goods will have to be procured from GST-registered dealers. Jaitley added. “For that back chain, a condition will be put that a very high percentage of purchases to avail of this, will have to be from registered dealers. The GoM has proposed 80 per cent. Whether it is 80 per cent or more, the group will reconsider it and present before the Council,” he said, adding this will ensure that the back chain does not go to a cash-based system.

GST Impact on Housing and Construction Industry
Author: Azith, Y. (2017)
Abstract: A standout amongst the most complex ranges of the expense imposed by the Center and the States is works contract and offer of property. As of now, such exchanges are broken into three sections – the estimation of products and materials, estimation of administrations and estimation of land. The States apply VAT to the products partition and the Center expenses the administrations divide, with no unequivocal assessment on the exchange estimation of land. The State likewise gathers stamp obligation and enlistment charges for the enrollment of property. Every expert assessment perspectives and valuation free of the others. Over 200% of the esteem is being exhausted in a few States which is no reasonable. Land exchanges tragically are liable to control and undervaluation in many parts of India.

An Overview on Impact of GST on Construction Industry
Author: Deshmukh Pranita, A. N. Bhirud,
Abstract: This paper is an analysis of what the impact of GST (Goods and Services Tax) is on Indian Tax Scenario. Here stated with a brief description of the historical scenario of Indian taxation and its tax structure. Then the need arose for the change in tax structure from traditional to GST model. GST has been detailed discuss in this paper as the background, silent features and the impact of GST in the present tax scenario in India. The Goods and Services Tax (GST) is a value added tax to be implemented in India. GST is the only indirect tax that directly affects all sectors and sections of our economy. Ignorance of law is no excuse but is liable to panel provisions, hence why not start learning GST and avoid the cost of ignorance. Therefore, we all need to learn it whether willingly or as compulsion. The goods and services tax (GST) is aimed at creating a single, unified market that will benefit both corporate and the economy. The changed indirect tax system GST-Goods and service tax is planned to execute in India. Several countries implemented this tax system followed by France, the first country introduced GST. Goods and service tax is a new story of VAT which gives a widespread setoff for input tax credit and subsuming many indirect taxes from state and national level. The GST is declared by government on 01 April 2017. India is a centralized democratic and therefore the GST is implemented parallel by the central and state governments as CGST and SGST respectively. The objective will be to maintain a commonality between the basic structure and design of the CGST, SGST and SGST between states. In this article, I have started with the introduction, in general of GST and have tried to highlight the objectives the proposed GST is trying to
impact on Australia’s economy. It is basically a tax on final consumption from many sources like government and services. The transitional rules relating to the GST as it applies to the real estate industry are not discussed in detail in this article.

II. OBJECTIVES
- To understand the concept of GST
- To understand the current scenario of real estate sector in India
- To analyze the possible impact of GST on the construction Industry
- To provide a conceptual framework of GST and its salient features
- To highlight the benefits associated with the implementation of GST
- To analyze the effects of GST on different sectors in India

III. METHODOLOGY

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Figure 4.1: Proposed System Methodology Flow

Methodology Adopted on Site
- Documentation of the Quantities.
- Project Planning & Scheduling.
- Rate Analysis of all items of Project.
- Finding Tax Rates & Their Breakup.
- Working Out for Area Statement.
- Documentation of Quantities in BOQ.
- Working out cost of all items.
- Arriving with comparative results.

RESEARCH METHODOLOGY

The data are collected from many sources like government reports, newspapers, magazines and websites. The data are secondary and collected on the basis of convenient types of research. The data collected and shorted started from the year 2000 to the year 2015.

Research design
There is a lot of variability found in-between the data collected from the year 2000 to 2015. There are direct variables and indirect variables that immediately affect the result of the study.

Direct variable
The direct variables are basically the indirect taxes like sales tax, service tax, VAT tax, and excise duty which are going to directly get affected by the GST.

Indirect Variable
In this study, the constitution of India, GDP of India and planning commission are term as indirect variables. The constitutional amendment is required for the government to pass the GST bill in India. For the constitutional amendment it is necessary for the government to at least get the two thirst support from both of the houses.

Goods and Service Tax (GST)
Goods and Services Tax is a broad based and a single comprehensive tax levied on goods and services consumed in an economy. GST is levied at every stage of the production-distribution chain with applicable set offs in respect of the tax remitted at previous stages. It is basically a tax on final consumption. In simple terms, GST may be defined as a tax on goods and services, which is to be levied at each point of sale or provision of service, in which at the time of sale of goods or providing the services, the seller or service provider may claim the input credit of tax which he has paid while purchasing the goods or procuring the service. Goods and Services Tax also known as the Value Added Tax or Harmonized Sales Tax (HST) was first devised by a German economist during the 18th century. He envisioned a sales tax on goods that did not affect the cost of manufacture or distribution but was collected on the final price charged to the consumer. Thus it did not matter how many transactions the goods went through, the tax was always a fixed percentage of the final price. The tax was finally adopted by France in 1954. Maurice Lauré, Joint Director of the French Tax Authority, was the first to introduce VAT on April 10, 1954. Initially directed at large businesses, it was extended over time to include all business sectors. Personal end-consumers of products and services cannot recover VAT on purchases, but businesses can recover VAT on the materials and services that they buy to make further supplies or services

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directly or indirectly sold to end-users. In this way, the total tax levied at each stage in the economic chain of supply is a constant fraction of the value added by a business to its products, and most of the cost of collecting the tax is borne by business, rather than by the state. VAT was invented because very high sales taxes and tariffs encouraged cheating and smuggling. Value added taxation avoids the cascade effect of sales tax by only taxing the value added at each stage of production. Value added taxation has been gaining favor over traditional sales taxes worldwide. In principle, value added taxes apply to all commercial activities involving the production and distribution of goods and the provision of services. VAT is assessed and collected on the value added to goods in each business transaction. Under this concept the government is paid tax on the gross margin of each transaction.

V. PROBLEM DEFINATION

The present study is done on effects of GST on specific sectors of Indian economy like FMCG, agriculture, Transportation, financial services, pharmaceuticals and textiles etc. The time period for the study is from July 2017 to September 2017.

VI. IMPORTANT CONCEPTS

Impacts of GST on Construction Capital Costs

Building material costs are the major components in construction development costs while GST implementation has been identified to have inflated the construction material prices within a year of implementation. Findings as shown in Table 1 indicate that all building materials set the highest cost increase after GST implementation is not surprising as prior to GST implementation only second schedule materials were being charged of sales and service tax (SST). On the other hand, GST had also led to an increment to the land acquisition cost although supply of land for housing properties is exempted from GST. Hence, the argument of Dato’ Subromaniam Holsay saying that the “biggest cost components” which is land being exempted from GST would lead to cost saving for housing developers is imprecise. Besides, marketing costs has also been raised after GST implementation which may be a result of developers outsourcing marketing agents to help them boost the sales of Moreover, labour cost as indicated at Table 1 does not get a significant GST impact as neither increase nor decrease.

Conceptual framework of GST and its salient features

Goods and service tax is the tax levied by the government with an idea to replace all the indirect taxes and improve the economy of the nation. One of the biggest taxation reform in India. It is one of the simplest, transparent and efficient systems of doing business. Before GST companies and business organizations used to pay number of indirect taxes levied by both central and state government. GST is going to consolidate these multiple taxes into one as One Nation One Tax. As it is going to reduce layers to taxes definitely leads to boosting tax collection. This can also see movement of unorganized sectors to organized sector which will change the business dynamics of industries. Some products like hair oil, soap and toothpaste, two wheelers are expected to benefit on the grounds of lower tax incidence leading to growth in demand and boosting the margins for the sectors. Infrastructure and real estate, financial services, insurance, telecommunication, paints are going to get affected because of increase in its duty. Increase in duty may leads to increase in cost to absorb the higher tax incidence leading to temporary slowdown in demand.

Salient features of GST
- GST is applicable to whole country including Jammu and Kashmir.
- GST is applicable on “SUPPLY” of goods or services as against the present concept of tax on the manufacture of goods or on sale of goods or on provision of services.
- Based on the principle of destination based consumption taxation as against present principle of origin based taxation
- Centre and state simultaneously are levying the tax on a common base hence it is a Dual GST. GST levied by centre is central GST and that levied by states is state GST.
- An integrated GST is levied on interstate supply of goods or services by Centre.
- Import of goods or services is treated as interstate supply and subject to IGST.
- A common threshold exemption of Rs. 20 Lakhs for both CGST and SGST; Further a person whose aggregate turnover in the preceding financial year is less than 75 lakhs (Rs. 50 Lakhs for special category states like Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, and Himachal Pradesh) has an option to pay tax under composition scheme which allows to pay tax at concessional rates on the turnover in the state without the benefit of ITC.
- Exports are zero rated.
- Credit of CGST paid on inputs may be used only for paying CGST on output and credit of SGST/UTGST paid on inputs may be used for paying SGST/UTGST.
- Various modes of payment of tax is available to the taxpayer like internet banking, debit/credit card, National Electronic Fund Transfer (NEFT) / Real Time Gross Settlement (RTGS).
- Audit of registered persons to be conducted in order to verify compliance with provisions of the Act

Initiatives and Suggestions

Housing Developers Transferring all the cost increment to the end buyers is the priority decision among all of the developers. However such a measure will result in an increment of the housing property prices and thus is unadvisable. The initiative of using in-house sources
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which is recommended by MCT Executive Director is not an effective solution to soften the GST impact either as professional soft costs are just a small portion in a project. However, such small portioned savings can help an organization to allocate their resources onto other operational fields. On the other hand, promotions such as giving discounts between 5-10% for those buyers who can pay their installments within a single payment is necessary in order to push up sales rate although developers will still sustain some losses. Additionally, the late claiming issues can be overcome if an organization establishes a GST specialist department to handle all GST related issues. Although investment in a new department may be costly initially, however it can provide a positive return in the long run. Yet, all the suggestions above are not the most effective as that particular solution lies within the government’s role because government is the one who can ensure that the GST implementation can be run efficiently. Once everything is proceeding smoothly, then only anything can be settled easily. Hence, for this moment, the most urgent issue which the government should tackle first is to list all the claimable guidelines clearly and make the claiming process faster so to ensure an organization’s cash flow can be proceeded smoothly.

VII. DATA COLLECTION & DATA ANALYSIS

1.1 The Ministry of External Affairs envisages constructing residential apartments for their officials in place of the existing residential building in Pune. The construction of building is started in 2016-17. The site is for the construction of the Residential Apartments.

1.2 The Project area will include 3 categories of residences, a community recreation centre and parking facilities. In addition, provisions for services and security would need to be included in the overall plan.

1.3 The campus is expected to function efficiently with smooth circulation, integration of open and built-up spaces and functional segregation of spaces.

1.4 Climatic Conditions – The climate of Pune is monsoon influenced subtropical bordering semi-arid with high variation between summer and winter temperatures. Pune experiences dust storms, has relatively dry winters and has a prolonged spell of very hot weather, thus causing it to be classified as semi-arid region.1.5 summer start in early April, peak in May with average temperatures of 32 degree C and occasional heat waves with close to 45 degrees C. The monsoon starts in late June and lasts until mid-September, the monsoons recede in late September, and the post-monsoon season continues till late October.

Among the many available methods in collecting data two methods were adopted; these are literature review and questionnaires. The first step involves general information collection, including both first-hand and second-hand data, in order to identify major themes from the literature. In the second step, with the literature review and unstructured interviews, important factors of safety were identified. With these factors, a questionnaire was formed and Survey was conducted. The questionnaires were distributed through various electronic media platform to a variety of respondent working around the construction projects. About 100 people have responded to the questionnaire survey.

The respondents were asked to indicate the positions they held in the respective companies and the duration for which the company is in operation. They were provided with options to choose from. About 26.7% of the respondents who participated in the study are from Top management background, 40% were from middle management, while 33.3% were serving as a lower management as shown in the Fig **. These respondents are well conversant with effect of GST in construction engineering.

SPSS DATA VIEW

The Questioners Survey responses were reported in excel file. After opening data, SPSS displays them in a spreadsheet-like fashion as shown in below figure**. The excel file was export in data View and check the values and other information in spreadsheet.
SPSS Variable View:
An SPSS data file always has a second sheet called variable view. It shows the metadata associated with the data. Metadata is information about the meaning of variables and data values. In Variable View, different columns are displayed. Each line corresponds to a variable. A variable is simply a quantity of something, which varies and can be measured, such as height, weight, number of children, educational level, gender and so forth. Name of the variable it is your own choice, but make it understandable and do not use numbers or symbols as the first letter since SPSS will not accept it. Moreover, you cannot use spaces in the name. The name of variable was used such as EMI, Construction material etc.

SPSS Data analysis:
SPSS can open all sorts of data and display them -and their metadata- in two sheets in its Data Editor window. In our data contain a variable holding respondents’ on GST related question, we can compute the frequency by navigating to Descriptive Statistics as shown in below fig**. For better understanding and detailed study pie charts and Bar chart option is also selected.

SPSS Output Window:
After click Ok, a new window opens up, SPSS output viewer window. It holds a nice table with all statistics on all variables we chose. The screenshot below shows what it looks like. As we see, the Output Viewer window has a different layout and structure than the Data Editor window we saw earlier. Creating output in SPSS does not change our data in any way; unlike Excel, SPSS uses different windows for data and research outcomes based on those data.

Will the amount of EMIs for the home loan rise up due to GST?

Table No 9: Home lone rise up due to GST

<table>
<thead>
<tr>
<th>Responses</th>
<th>Percentages (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>81%</td>
</tr>
<tr>
<td>No</td>
<td>9%</td>
</tr>
<tr>
<td>Other</td>
<td>10%</td>
</tr>
</tbody>
</table>

RII Manual Method
The sample for this study is relatively small. As a result, the analysis had combined all groups of respondents (clients, consultants, contractors and regulatory boards) in order to obtain significant results. Data was analyzed by calculating frequencies and Relative Importance Index (RII). The data analysis was carried out using SPSS. SPSS was used to generate the frequency (fi) of the response category index for the cause and effect factors. The relative importance index (RII) for each
factor was calculated using the frequency data for each response categories generated from SPSS as shown in below table**.
Assessment of questionnaire was carried out using 3 point like scale from 1 to 3 representing can be not at all, no, most of the times, yes respectively. Data analysis was done calculating Relative Important Index (RII) by following formula.

$$RII = \frac{\sum W}{A \times N}$$

Where, $W =$ weight given to each factor by respondents (1-3)
$A =$ highest weight (i.e. 3)
$N =$ total number of respondents (i.e. 100)

**Table: SPSS generated frequency**

<table>
<thead>
<tr>
<th>Que. No.</th>
<th>Questions</th>
<th>Yes(3)</th>
<th>No(2)</th>
<th>Other(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q.1</td>
<td>Will the amount of EMIs for the loan rise up due to GST?</td>
<td>81</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Q.2</td>
<td>Will the prices for the property go up, as GST is implemented on most</td>
<td>70</td>
<td>21</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>construction related materials and services?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q.3</td>
<td>Is GST going to impact the property rentals?</td>
<td>50</td>
<td>35</td>
<td>15</td>
</tr>
<tr>
<td>Q.4</td>
<td>Does a borrower have to pay tax on the total home loan amount, if in case where only some part of the EMIS is due?</td>
<td>55</td>
<td>35</td>
<td>10</td>
</tr>
<tr>
<td>Q.5</td>
<td>Is the impact of GST on resale properties?</td>
<td>86</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Q.6</td>
<td>Purchasing an office, does a businessman can get input credit for GST that he has paid?</td>
<td>47</td>
<td>39</td>
<td>14</td>
</tr>
<tr>
<td>Q.7</td>
<td>A builder passes on the gst benefits earned by him to home buyers when he can increase his profit margin by retaining the benefits?</td>
<td>65</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>Q.9</td>
<td>Is GST fully implemented, how it will result in the overall increase or decrease</td>
<td>71</td>
<td>19</td>
<td>10</td>
</tr>
</tbody>
</table>

**Table No Data analysis by Relative Important Index (RII)**
VIII. RESULTS & DISCUSSION

<table>
<thead>
<tr>
<th>Question No.</th>
<th>Questions</th>
<th>MEAN</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q.1</td>
<td>Will the amount of EMIs for the loan rise up due to GST?</td>
<td>1.29</td>
<td>0.64</td>
</tr>
<tr>
<td>Q.2</td>
<td>Will the prices for the property go up, as GST is implemented on most construction related materials and services?</td>
<td>1.39</td>
<td>0.65</td>
</tr>
<tr>
<td>Q.3</td>
<td>Is GST going to impact the property rentals?</td>
<td>1.65</td>
<td>0.73</td>
</tr>
<tr>
<td>Q.4</td>
<td>Does a borrower have to pay tax on the total home loan amount, if in case where only some part of the EMIS is due?</td>
<td>1.55</td>
<td>0.672</td>
</tr>
<tr>
<td>Q.5</td>
<td>Is the impact of GST on resale properties?</td>
<td>1.19</td>
<td>0.506</td>
</tr>
<tr>
<td>Q.6</td>
<td>Purchasing an office, does a businessman can get input credit for GST that he has paid?</td>
<td>1.67</td>
<td>0.711</td>
</tr>
<tr>
<td>Q.7</td>
<td>A builder passes on the GST benefits earned by him to home buyers when he can increase his profit margin by retaining the benefits?</td>
<td>1.45</td>
<td>0.672</td>
</tr>
<tr>
<td>Q.8</td>
<td>Is GST will impact the stamp duty on purchasing a property? What about maintenance charges, registration charges, etc.?</td>
<td>1.45</td>
<td>0.592</td>
</tr>
<tr>
<td>Q.9</td>
<td>Is GST fully implemented, how it will result in the overall increase or decrease in the property prices?</td>
<td>1.39</td>
<td>0.665</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
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<td>5</td>
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<td>1.39</td>
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</table>

IX. CONCLUSION

It can be easily observed from the above calculations that even though ITC is not taken in consideration, there has been a considerable reduction of up to 1.2% of the Project Cost by application of GST. Experts say that GST is likely to improve tax collections and Boost India’s economic development by breaking tax barriers between States and integrating India through a uniform tax rate. Under GST, the taxation burden is divided equitably between manufacturing and services, through a lower tax rate by increasing the tax base and minimizing exemptions. All sections of economy viz., big, medium, small scale units, intermediaries, importers, exporters, traders, professionals and consumers shall be directly affected by GST. If the ITC studies are taken in consideration, then this cost will reduce even more & hence, it can be said that it is a good effect of GST on construction industry. It is also seen that only the contractors bidding for labor contract. There is a need to urgently engage with government to minimize this impact by clarifying position on works contract, composition scheme and already paid service tax and VAT by developers on under construction property. As per the latest news, the goods and services tax (GST) is set to be rolled out from 1 July 2017. This section discusses the questioners’ results obtained by analysis of data collected by Relative Importance Method and finding the most important influencing question caused for GST. Table and show Questioners ranking according to RII method.

ACKNOWLEDGMENT

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REFERENCES

[2]. Akshara Mahesh “Impact of GST on Automobile Industry in India” IOSR Journal of Business and Management (IOSR-JBM) e-ISSN: 2278-487X, p-ISSN: 2319-7668
[3]. PP 01-03 www.iosrjournals.org
[5]. Niraj Dhar Dubey “An Enquiry into the Effect of GST on Real Estate Sector of India” International Journal of Trend in Scientific Research and Development (IJTSDR) ISSN: 2456-6470
[7]. RozlinZainal “The Effects of GST (Goods and Services Tax) on Construction Capital Costs and Housing Property Prices” ISSN: 2357-1330 Selection and peer-review under responsibility of the Organizing Committee of the conference

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