A Review on quality of services provided using SERVQUAL model in Indian Hospitals
&
Online Course Report on Microsoft Excel – Excel from Beginner to Advanced

Summer Training Report submitted to the
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DATE:

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PART 1:

A review on quality of services provided using SERVQUAL model in Indian Hospitals

Abstract:

Background: This review is done to explore the quality of services given and gap between patients' expectations and perceptions (according to SERVQUAL model) in Indian Hospitals through an analysis of existing literature.

SERVQUAL model is most frequently used technique for assessing quality of services provided. It is utilized to analyse the patients' desires/expectations before they utilize the services and their perceptions/discernments in the wake of experiencing the real services. It has five dimensions in particular: Tangibility, Reliability, Empathy, Assurance, and Responsiveness.

Methods: Articles were searched in scientific databases like PubMed, Google Scholar, ResearchGate, SciHub to identify the various studies that used the SERVQUAL model in various hospital settings across all the north, south, east, west and central regions of India to examine the quality of services given and the difference each dimension has. The databases were searched using keywords like "SERVQUAL model", "SERVQUAL studies", "hospitals", "service quality" & "India". The articles were selected within the time frame from 2011 to 2018.

Conclusion: The study found that by comparing the gap between the expectations and perceptions of patients in the 5 service quality dimension across India for various hospital types, it was seen that there is a negative gap score which indicates that the patients' expectations are not met. As a conclusion, improving the service quality in hospitals is required with more focused attention by policy-makers, health professionals and hospital administrators.

Keywords: Service quality, hospital service quality, SERVQUAL model, SERVQUAL studies, India, hospitals

Introduction:

Nowadays people tend to go for quality services as they are more informed and have knowledge about the on goings in the specific sector. Health scenario has changed in India. According to the World Health Organization (WHO), among 1324 million population in India (as of 2016), only 1/3rd of the population gets satisfactory healthcare services.

Customers have become selective about where to invest their hard-earned money. If they have to receive any healthcare services, they would want to receive the best consequently, or else, they don't stop for a second to switch over to another healthcare provider. Thus, 'survival of the fittest' depends on the consumers' choice. An evaluation of quality of services provided can give a chance to the administration of the healthcare service providers to discover the loopholes in services given for future adjustments and to find out the variables that are essential to give satisfying services to the consumers. Therefore, it is necessary to check the health care service quality routinely (Pramanik, 2016). In India, healthcare has become one of the biggest contributing sectors – both in terms of revenue and employment (Moffitt, 2020).

Hospitals in India are largely divided as private and public; where the primary care and prevention is given by the public clinics and hospitals i.e. Primary Health Centres, Community Health Centres and district hospitals and more complex, secondary and tertiary care is often being offered by the private, corporate hospitals, charitable hospitals and government & teaching hospitals. Until 1980s, the hospitals run by Government or the charitable hospitals were the main suppliers of the subsidized healthcare. It was during the last two decades that the number of various corporate and private hospitals extensively increased in our country. The role of private sector is now increasing and becoming more important in administering healthcare to an expanding population of the country.

Service Quality

Service is an act or performance (that is intangible but often requires use of physical products) offered by one party to another. It is an economic activity that does not result in ownership. Two parties are involved for a service to be produced – the producers and the customers. The customers are the ones who receives the services from the supplier organization whereas the producers are the ones who help create or produce the service opportunity for the people to use. To manage the operation of services; the service concept, the service delivery mechanism and

service levels must be understood. Customers play a crucial part in evaluation of all these three elements, hence their expectations and perceptions have to be kept in mind by the producers i.e. the service managers.

Quality means "to the degree to which the specifications are met by a variety of inherent features" according to ISO 9000 (2005). This definition is described through customer instead of producers. It is measured as to how the customer expectations are met. A contrast of customer preferences with real service performance results in the perception of quality of service. (Pramanik, 2016). Healthcare in order to be of high quality has to be safe, effective, efficient, timely, patient-centered and equitable.

Service Quality (SQ) is a comparison of expectations (E) of a particular service with the real perceived service (P), which is measured as: SQ = P – E. This service quality is indicated as the gap score. It has been communicated by a couple of researchers that a negative gap score demonstrates disappointment in the quality of services given and a positive gap score indicates that the consumers are happy and composed with the services given. Service Quality because of its intangible nature of services, is very hard to quantify. In one of the earliest attempts to measure the service quality, it was seen as having two basic dimensions (Gronroos, 1984):

> ***Technical quality:*** What the customer gets because of associations with the administration firm
>
> ***Functional quality***: How the customer gets the service; the expressive nature of the service delivery

Service Quality largely determines the customers' satisfaction i.e. how successfully and to what extent the expectations of the customers are met. Service Quality assessment is a challenging process. Numerous measurements of quality of service were therefore suggested (Brady, 2001). Customer satisfaction is a proportion of how an organization's products and services satisfy consumer requirements. Customer satisfaction is affected through Service Quality which impacts customer loyalty directly and positively.

SERVQUAL Model

SERVQUAL is one of the most utilized Service Quality Measurement scale in healthcare industry. This model was invented by Parasuraman, Zeithaml and Berry in 1985. Parasuraman

et al., 1985 reported 97 characteristics that had an effect on the quality of services. Such characteristics were the parameters used to determine the expectations and perceptions of the consumers about the services that are provided (Kumar et al., 2009). They then explored ten attributes for model that included: tangibility, security, reliability, communication, responsiveness, competence, assurance, courtesy, empathy, and credibility but later in 1988 these were reduced to five which are:

Tangibility: physical facilities, equipment, and appearance of personnel

Reliability: ability to perform the promised service dependably and accurately

Responsiveness: willingness to help customers and provide prompt service

Assurance: knowledge and courtesy of employees and their ability to inspire trust and confidence

Empathy: caring individualized attention the firm provides to its customers

These five parameters are linked to Parasuraman et al., 1985's 22 statements. SERVQUAL model deals with how the gaps are measured in comparison to consumer's expectations and perceptions through these five suggested dimensions (Ghotbabadi et al., 2015). The use of perceived as opposed to actual service received helps us measure the gap as shown in fig 1 below:

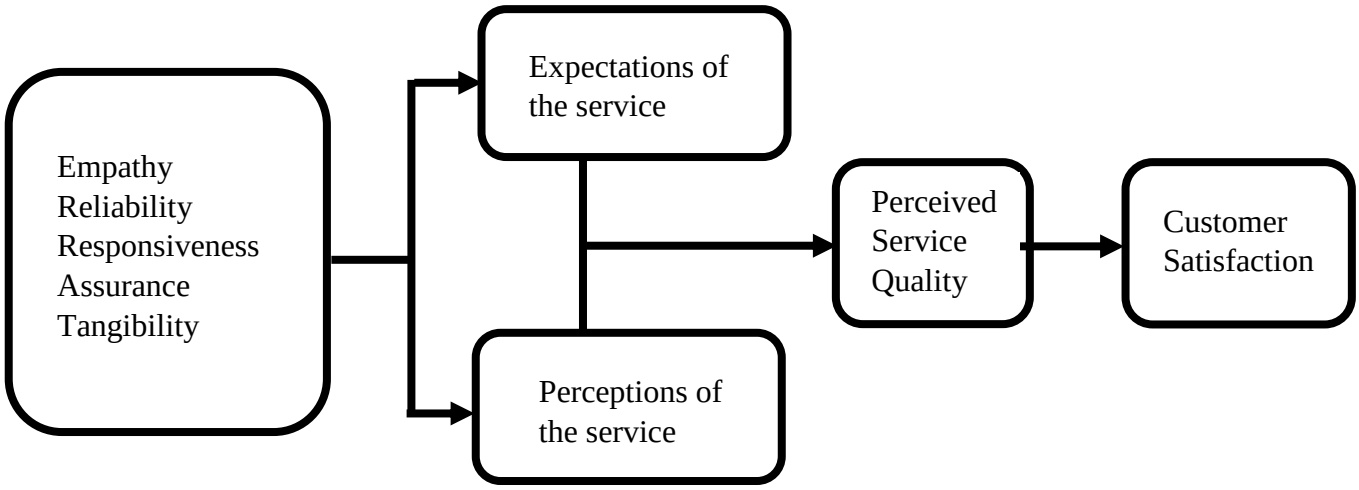

Fig 1. SERVQUAL Conceptual Model

Source: SERVQUAL Conceptual Model (Daniel & Berinyuy, 2010)

SERVQUAL model measures gap between the expectations (E) and perceptions (P) of consumers. It is measured by P-E.

The cornerstone of the SERVQUAL model is built on the basis of Gaps Model given by Parasuraman et al., 1985. The Gaps model given in fig 2 says that customer satisfaction is indicated by the size and direction of a person's expectations and also his real experience (Parasuraman et al., 1985). This distance/gap between the expectations and the perception gives the measurement of Service Quality.

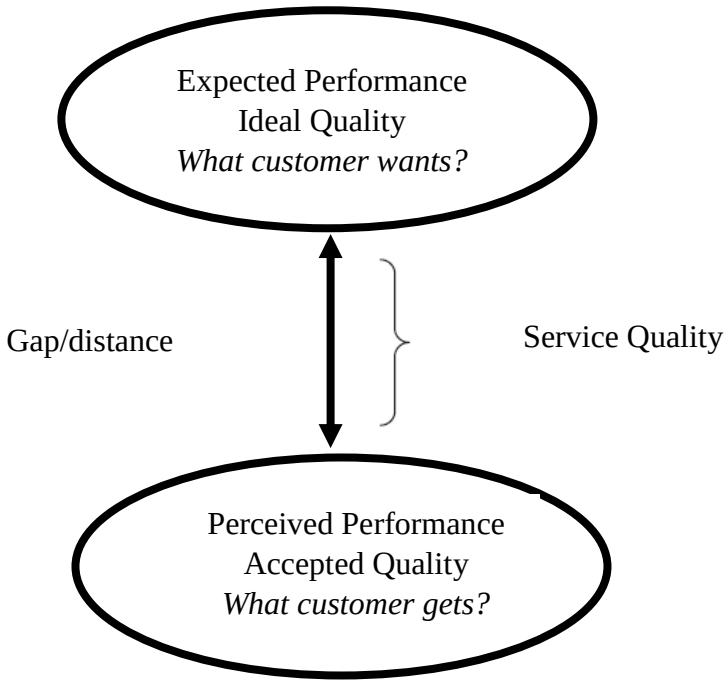

Fig 2. Conceptual Model of Service Quality
Source: Conceptual Model of Service Quality (Pramanik, 2016)

The study suggested that there were 5 gaps between the expectations and perceptions in the service quality.

- **Gap 1:** The difference between the managements' perception of customers' expectations and customers' expectations.
- **Gap 2:** The difference between management perceptions of customers' expectation and service quality specifications

- **Gap 3:** The difference between management's perceived service quality specifications and actual service provided
- **Gap 4:** The difference between service provided and external communications to the customers
- **Gap 5:** The difference between customers' expectation and customers' perception of the service.

This study is explained in the fig 3 below:

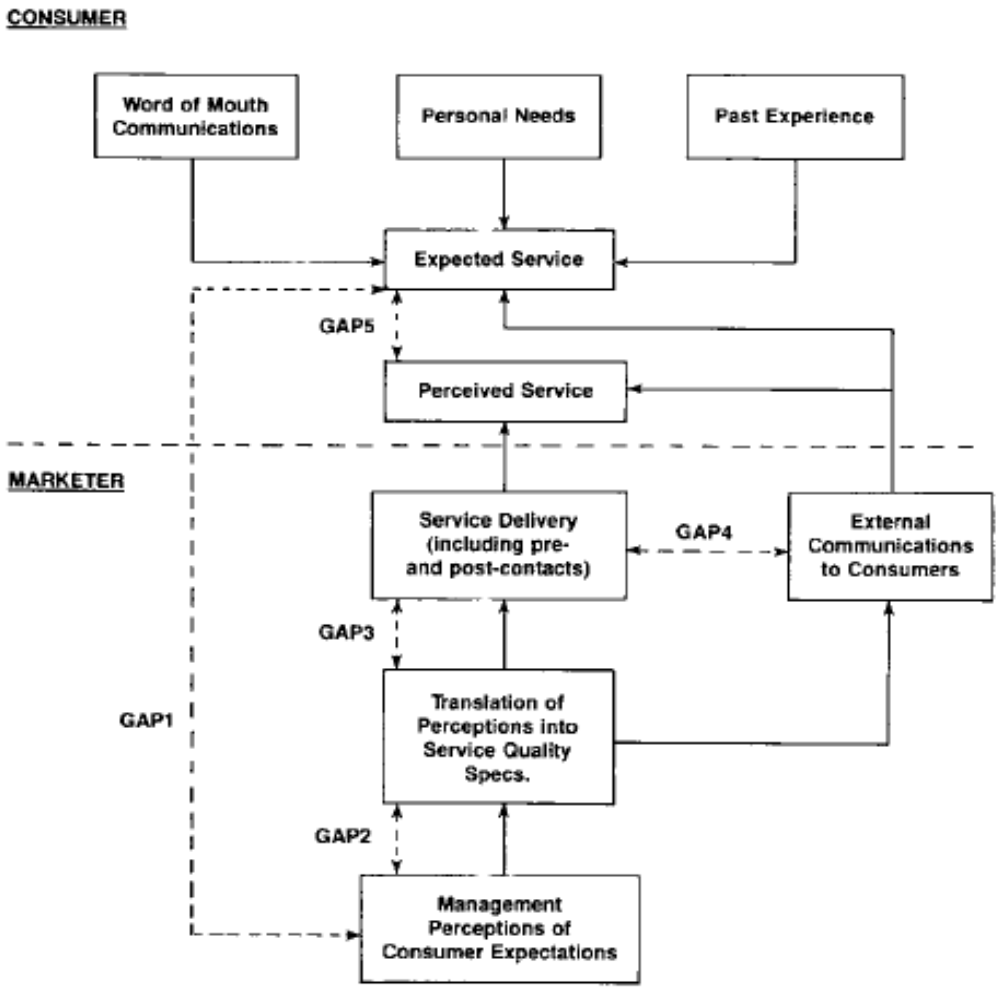

Fig 3: Gap Theory of Service Quality

Source: Gap Theory of Service Quality, Parasuraman et al., 1985

SERVQUAL Model is used extensively because of its various benefits. That includes:

- SERVQUAL Model is acknowledged as a standard for evaluating various components/dimensions of service quality
- It has a uniform analysis procedure to help in translation and getting results
- It has been demonstrated to be valid for many of the service situations
- It has been proved and known to be reliable
- SERVQUAL Instrument has a set number of items and this helps the customers and other users to complete it rapidly

Objective of the Study:

- To review the literatures on SERVQUAL model for assessment of quality of services given in various types of hospitals across all the north, south, east, west and central regions of India
- To determine whether the patients are satisfied with the services provided by the hospitals

Material and Methods:

Search Technique

This review is conducted in 2020. The articles were searched in scientific databases like PubMed, Google Scholar, ResearchGate, SciHub to identify the various studies that utilized SERVQUAL model to assess quality of services provided and the difference each dimension has. The databases were searched using keywords like SERVQUAL model, SERVQUAL studies, hospitals, service quality, gap, expectations and perceptions, patients and India. References were added and managed by Mendeley software to organise the titles and citations. Review articles on the quality of hospital services have also been searched by hand for additional articles.

Study Selection

The titles and abstracts of all the articles were screened to recognize the original studies that assess the gap between the patients' expectations and their perceptions and their perspectives about service quality of the hospitals.

Inclusion criteria: original research, having the gap mean score between the expectations and perceptions of patients in terms of hospital service quality, done in hospital setting, time frame from 2011 till 2018 and conducted in India.

Exclusion criteria: papers not within the time frame of 2011 to 2018, work not having the mean scores, proceeding papers, interventional studies, and literature reviews.

Out of 95 abstracts studied, around 45 relevant articles were identified that had the study about the SERVQUAL model with gap scores between the expectations and the perceptions of patients and those where the study was done in hospital setting in India. Out of it, 18 were excluded as they had works from outside India or with no proper gap scores or not within the time frame, and 13 were literature reviews and articles explaining the concepts of service quality and hence were also excluded. This study is based on total of 14 article.

The review is done on the basis of the available articles following the inclusion and exclusion criteria.

Data Analysis

The graphs were made by Microsoft Office Excel 2013 software.

Discussions:

Out of all the articles reviewed for the study, 14 articles were found to match the inclusion criteria for the review. The articles had the studies in various hospital settings like Government hospitals, NGO run hospital, Peripheral Service hospital, Private General hospitals, Private super-specialty hospitals, College affiliated hospitals, Healthcare centres, and Government Homeopathic hospitals. All these types of hospitals were from different regions of India – North, South, East, West and Central regions.

Study	Setting/Hospital type	Place	Region	Sample size		Gap Mean Score
				Total	Usable response	
Ahuja et al., 2011	Government/NGO hospitals	Haryana	North	120	100	0.0408
Umath & Marwah, 2015	Hospitals	Indore, Dewas, Ujjain	Central	340	270	0.1634
Chakravarty, 2011	Peripheral Service hospital	Pune	West	50	50	-0.3280
Wath, 2017	Private hospitals	Jalgaon and Dhule	West	120	120	-0.2092
Jaswal & Walunj, 2017	College Affiliated Hospitals; Not for profit; No profit no loss; for profit basis	Ahmednagar	West	303	303	-1.4660
Madan & Goel, 2015	Private hospitals	Delhi/NCR	North	122	100	-0.2920
Ghritlahre & Ghritlahre, 2016	Private hospitals	Chhattisgarh	Central	100	100	-0.6015
Service Quality Perception of Patients on Health Care, n.d.	Healthcare centres	Coimbatore	South	1012	1012	-0.0280
Pandit, 2015	Private super-specialty; Government Medical college and hospitals; Private General hospitals	Kolkata	East	150	150	-0.2075
Dr Ranjith PV, 2018	Hospitals	Navi Mumbai	West	35	35	-0.6077
Koley et al., 2015	Government Homeopathic hospitals	West Bengal	East	703	644	-0.3450
Sadia Samar Ali, Arati Basu, 2016	Private/corporate hospitals	Delhi/NCR	North	210	210	0.5900
Madhura Prabhu & Iyer, 2018	Hospitals	Lucknow, Vizag, Vellore, Indore, Belgaum, Mangalore	North/Central/ South	100	100	-1.2760
Pramanik, 2016	Government and private hospitals – Urban/Rural	Kolkata, Pune, Orissa, Bihar	East/West	380	368	-1.3640/-0.8760

Table 1. Hospital setting type, location and mean gap score

Source: Review papers (cited in the table)

Service Quality is measured by subtracting the expectations from the perceptions i.e. by checking the difference between the actual service received by the patients and what they thought or what they expected to the services to be before receiving them. The negative score determines that the expectations are not met by the hospitals or healthcare provider and positive

score means that the hospitals meet the expectations of the patients while providing them the services.

The usable patient sample was 3562 in oppose of total 3745. The gap mean score of each study as given in the articles itself is mentioned in the table 1 above. The positive gap score represents that the patients are happy and composed by the services received that can be seen in Sadia Samar Ali, Arati Basu, 2016 study with mean gap score of 0.59, in Umath & Marwah, 2015's study with mean gap score as 0.1634 and in study of Ahuja et al., 2011 having mean gap score has 0.0408. The negative gap score indicates that the patients' expectations are not met. The minimum difference was seen in Jaswal & Walunj, 2017's study with mean gap score of -1.466.

The review of these articles helped us understand the various hospital settings and the various types of methods used to perform the same service quality study using the SERVQUAL Model.

Table 2 below shows the gap scores (P-E) as given in the articles itself for all the dimensions of SERVQUAL Model – Reliability, Assurance, Tangibility, Empathy and Responsiveness.

Study	Reliability Gap	Assurance Gap	Tangibility Gap	Empathy Gap	Responsiveness Gap
Ahuja et al., 2011	0.06	0.15	-0.173	0.54	-0.373
Umath & Marwah, 2015	0.476	0.173	0.159	0.152	-0.143
Chakravarty, 2011	-0.04	-0.28	-0.56	-0.11	-0.65
Wath, 2017	0.2334	-0.1917	-0.1021	-0.8833	-0.1021
Jaswal & Walunj, 2017	-1.56	-1.44	-1.32	-1.38	-1.63
Madan & Goel, 2015	-0.48	-0.15	-0.2925	-0.335	-0.2025
Ghritlahre & Ghritlahre, 2016	-0.68	-0.535	-0.4575	-0.47	-0.865
Service Quality Perception of Patients on Health Care, n.d.	0.5	-0.27	-0.15	-0.07	-0.15
Pandit, 2015	-0.136	-0.09	-0.326	-0.194	-0.29133
Dr Ranjith PV, 2018	-0.686	-0.205	-0.665	-0.78	-0.7025
Koley et al., 2015	-0.28	-0.3	-0.525	-0.32	-0.3
Sadia Samar Ali, Arati Basu, 2016	0[1]	0.65	0.58	0.64	0.49
Madhura Prabhu & Iyer, 2018	-1.35	-1.13	-1.41	-1.48	-1.01
Pramanik, 2016 – Urban	-1.48	-1.63	-1.67	-0.6	-1.44
Pramanik, 2016 – Rural	-0.78	-0.57	-0.97	-1.05	-1.01

Table 2. The values of gap scores for each dimension of the SERVQUAL Scale
Source: Review papers (cited in the table)

[1] As the reliability dimension did not show any gap in the study, it is given as 0.

Assurance signifies employee courtesy towards the patients, and the ability to build trust and confidence among them. Tangibility is the physical structure of the hospital, machinery, equipments, the visual appearance, neatness of the employees and the hospital, the infrastructure and the connectivity for one service to another. Empathy means providing individual care and attention to the patients. It was emphasized by Yavas et al., 1997 in his study that empathy is needed to impress the customers. Responsiveness signifies the promptness in providing the service and helping the patient when they need. It emphasizes on timeliness of response given to the patients. Reliability specifies how the patient expects the hospital staff to deliver the services on time and be safe in delivering the services, to be open to them about the treatment processes and show interest in providing the best solution by getting the things right the first time. They want the best for themselves. In few articles, it has been assumed that the Reliability is the result of all the other four dimensions i.e. Reliability = Assurance + Tangibility + Responsiveness + Empathy. (Sadia Samar Ali, Arati Basu, 2016).

There are various types of hospital settings where these studies have taken place. In the study by Ahuja et al., 2011, the respondents were selected who underwent surgery in Government/NGO Hospital and did not have any previous experience related to any eye care services in the hospital in Haryana. Total 120 respondents were assessed. The questionnaire had 4 parts in total: Part 1 – socio-demographic characteristics of the respondents; Part 2 – 22 item scale for measuring patients' expectations; Part 3 – 22 item scale for measuring patients' perceptions; Part 4 – it asked the respondents to give weightages to all the 5 dimensions with total 100 points and rank them according to their importance. Out of the 5 dimensions of service quality, assurance and reliability is found to be of most importance by the respondents. Whereas the tangibility and responsiveness showed a negative gap.

The study of Umath & Marwah, 2015 was done in around 5-6 hospitals in Ujjain, Dewas and Indore city of MP. Total 340 respondents were given the questionnaires, out of which 270 gave positive response. The questionnaire was given to patients, doctors, nurses and other staff of the hospitals. It had 22 statements and 2 sets – one for the expectations and one for the perceptions. It was shown that the author found all the 5 dimensions to be important for the service quality and only responsiveness showed a negative gap.

A study was done in Peripheral Service hospital in Pune by Chakravarty, 2011 to know the gap between the customer expectations and the perceptions related to the OPD quality services offered by the hospital. The patients were asked to fill the questionnaire of 22 statements and

were selected on the criteria that they had visited the hospital OPD at least once before the current visit. It was seen that the gaps were found in all the 5 dimensions, with significant gaps in responsiveness and tangibility dimensions.

Wath, 2017 conducted a study in private hospitals in North Maharashtra – specifically in Dhule and Jalgaon districts to assess the service quality. A 22 statement questionnaire was developed. It also included the socio-demographic information of the patients. From 10 various private hospitals, total 120 respondents were taken for the study. It was seen that the hospital was doing better in terms of reliability dimension and all other dimensions were not up to the mark in terms of private hospital where empathy was found to be the weakest dimension.

Jaswal & Walunj, 2017 selected private hospitals with bed size 100 for their study. The reason for this type of selection was that the big hospitals will be more prompt in providing the better services as opposed to the expectations of the patients. The IPD patients were selected for this study as they could have experienced the service quality first hand. Questionnaire included 22 statements given by Parasuraman et al., 1985 with 3 additional questions. Total 303 sample was taken for this study. The author selected College affiliated hospitals, not for profit hospitals, hospitals of no profit no loss basis and hospitals for profit basis. They took these different types of hospitals for their study as they have different structures. For example the hospital affiliated with medical college have interns attend the patients to learn have a completely different structure as compared to the hospitals running for profit or hospitals running by charitable organizations. Keeping this in mind, the author presumed that the types of hospitals would be a key differentiator. But after the study, the found that the types of hospitals did not have an impact on the reported gaps in service quality. It was reported that reliability was the most important dimension followed by responsiveness, assurance and empathy. The least important was found to be tangibility dimension.

In Madan & Goel, 2015's study the questionnaire consisted of 23 statements for the patients in the setting of various private hospitals in Delhi and NCR. Apart from that, the respondents' demographic profiles were also taken. Out of total 122 questionnaires, total 100 were used as they were filled completely. It was seen that the private hospitals have a sufficient performance in terms of the service quality dimensions. The conclusion was given that the larger gap score was for the patient's lack of knowledge and experience to judge the particular dimensions.

The study done by Ghritlahre & Ghritlahre, 2016 was done in selected private hospitals of three major cities of Chhattisgarh. Total sample size was 100. The modified version of SERVQUAL Scale given by Parasuraman et al., 1991 and used in the study by Sadiq Sohail, 2003 was used with 15 statements' questionnaire. All the 5 dimensions has a negative gap. The author found that expectations exceeded the perceptions in regard to service quality. They assumed that the perception score was low as the patients are not very sure of what to expect in a hospital setting and even as they could not draw out their experience properly after 1-2 visits.

Service Quality Perception of Patients on Health Care Centres in Coimbatore City, n.d. was a study done in healthcare centres in Coimbatore city with 1012 respondents. It was concluded that assurance was seen with maximum gap between the expectations and perceptions followed by tangibility, responsiveness, empathy and no gap was seen in reliability. Rather it was that the perception was more than the expectations in this reliability dimension.

Pandit, 2015 performed a study in some 15 hospitals in Kolkata with 5 each under categories of Private Super-specialty hospitals, Government Medical colleges & hospitals and Private General hospitals. The author used 22 statement questionnaire among the 150 total respondents with 10 from each hospital. They were asked to give weightage to all the 5 dimensions as to what importance it had for them. The total was to be 100 points. Overall it was found that the hospitals did not meet the expectations of the customers.

A study was conducted by Dr Ranjith PV, 2018 in Nerul, Navi Mumbai's hospitals with 22 statement questionnaire among 35 respondents – patients and relatives of patients. The gap between the expectations and perceptions was found to be high in all the dimensions with least gap in assurance and highest in reliability.

Koley et al., 2015 conducted a study in OPD patients of 4 Government Homeopathic hospitals in West Bengal. There were 703 respondents selected initially from which 59 refused and so final 644 respondents filled the questionnaire which had 22 statements. The questionnaire had 3 parts; one with socio-demographic details of the respondents, the other two evaluated the expectations and perceptions of the respondents in service quality of homeopathic hospitals in West Bengal. All the dimensions showed a negative gap.

In the study conducted by Sadia Samar Ali, Arati Basu, 2016 in private hospitals of Delhi and NCR, the total sample size was 210 patients who were recently discharged or about to be discharged from the hospitals. The questionnaire had 20 statements in two parts – expectations

and perceptions. The gap scores were all negative with maximum gap in assurance and minimum in responsiveness dimension.

Madhura Prabhu & Iyer, 2018's study was conducted regarding the expectation and perceptions about the service quality particularly in Hospital Information System among tier 2 cities of India like Lucknow, Vizag, Vellore, Indore, Belgaum and Mangalore. Total 100 respondents from OPD were selected for the study. The maximum importance was found in the reliability dimension.

Pramanik, 2016 studied the service quality gaps in various Private and Government hospitals of urban and rural areas in Bihar, Kolkata, Orissa and Pune. Out of a total of 380 questionnaires with 22 statements, 368 responses were received. It was seen that there was a large difference in urban and rural India in terms of service quality. Responsiveness and tangibility dimensions were found to be more important in urban India whereas more importance was given to empathy and responsiveness.

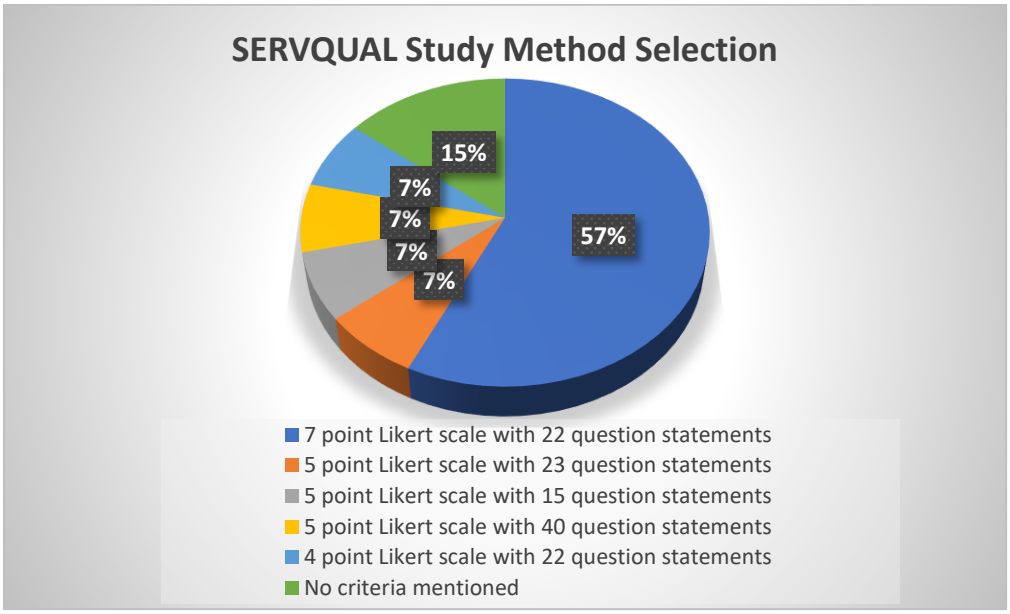

Fig 4. SERVQUAL Study Method Selection

It can be seen in the fig 4 above that around 57% of the authors of these articles had used the Parasuraman et al., 1985's 22 statement in their questionnaires with 7 point Likert scale to measure the response whereas others used different types of questionnaires and the response scale like 5 point Likert scale with 23 question statements; 5 point Likert scale with 15 question

statements; 5 point Likert scale with 40 question statements; 4 point Likert scale with 22 question statements and 14% articles did not mention their criteria.

As stated that the positive gap signifies that the expectations are met whereas negative gap signifies that the expectations are not met, it can be seen that almost each dimension has a negative value. There is only one study of Sadia Samar Ali, Arati Basu, 2016 with positive gap scores in all the 5 dimensions. Another study by Umath & Marwah, 2015 has positive gap score in 4 of the dimensions – tangibility, reliability, assurance, empathy and negative in responsiveness. Out of 5 dimensions, negative gap was seen in tangibility and responsiveness in study by Ahuja et al., 2011. Only single positive gap dimension was seen in reliability (*SERVICE QUALITY PERCEPTION OF PATIENTS ON HEALTH CARE*, n.d.) which means that the patients were satisfied only in reliability dimension and not in any other.

It can be seen among the articles reviewed for this study, that the positive gap score can be seen in Sadia Samar Ali, Arati Basu, 2016's study with mean gap score of 0.59, in Umath & Marwah, 2015's study with mean gap score as 0.1634 and in study of Ahuja et al., 2011 having mean gap score as 0.0408; overall it tells us that the patients are satisfied by the services they receive from the hospitals i.e. the perception exceeds the expectations.

The negative gaps were seen in study *SERVICE QUALITY PERCEPTION OF PATIENTS ON HEALTH CARE*, n.d. done in Coimbatore (-0.028); study done in randomly selected Private Super-specialty Hospitals, Government hospitals and Private General Hospitals in Kolkata (Pandit, 2015) (-0.2075); Wath, 2017's study which was done in selected private hospitals of Jalgaon and Dhule districts in North Maharashtra (-0.2092); study done in private hospitals in Delhi and NCR (Madan & Goel, 2015) (-0.292); a study conducted at a peripheral service hospital in Pune (Chakravarty, 2011) (-0.328); the study done by Koley et al., 2015 in four Government Homeopathic Hospitals in Kolkata (-0.345); study done in selected private hospitals in Chhattisgarh (Ghritlahre & Ghritlahre, 2016) (-0.6015); study done in Nerul, Navi Mumbai (Dr Ranjith PV, 2018) (-0.6077); the study by Madhura Prabhu & Iyer, 2018 in Tier 2 cities like Lucknow, Vizag, Vellore, Indore, Belgaum and Mangalore (-1.276); study done in hospitals in Urban and Rural Kolkata, Bihar, Orissa and Pune (Pramanik, 2016) (-0.876 for Rural and -1.364 for Urban) and the study at private hospitals of Ahmednagar (Jaswal & Walunj, 2017) (-1.466). This negative score is indicative of not meeting the expectations of the patients by the hospitals when they take the service for real.

A negative gap in assurance dimension signifies that the hospital does not meet the expectations of the patients in terms of employee courtesy towards the patients, the ability to build trust and confidence among the patients, and other attributes like fast response, quick and correct solution, transparency in explaining the financial aspects of the treatments and prognosis and other aspects related to the treatment. To overcome this, the employees need to be more courteous towards the patients, change their attitude and help the patients in all aspects, be non-confronting and should have regular trainings and learnings to improve the service quality of the hospitals. A negative gap in responsiveness dimension signifies that the hospitals and healthcare providers were not able to meet the expectations of the patients in terms of responsiveness. This includes factors like responding to the patients in time, not keeping them waiting, to help them in all aspects, to provide prompt services and responding to the requests of the patients. These all factors have to be converted in positive ways by paying maximum attention in responsiveness dimension for improving the overall service quality of the hospital. The reliability dimension signifies that the patients expects the hospital staff to be reliable, to satisfy the patients by delivering them the services on time and be safe in delivering the services, to be open to them about the treatment processes and show interest in providing the best solution by getting the things right the first time. A negative gap in tangibility means that the physical appearance does not appeal the patients to a great extent. The patients would not mind not having fancy and modern equipments and furniture, but would require safe treatments. Empathy dimension signifies that the employees need to provide undivided individualised attention to the patients.

As the authors have taken various methods to carry out the same SERVQUAL Model and even done in various hospital settings, it is not possible to compare it with one another; but still it can be seen that overall in various types of hospitals and in all regions of India, the hospitals does not have a proper service delivery system. The hospital administrators, healthcare providers and medical specialists need to focus on providing the best quality services to the patients.

Conclusion:

As per the articles reviewed, it can be seen that overall the patients' expectations are not met in almost all hospital types and in all regions of India. Patients have more expectations towards

private hospitals as they think that private hospitals are more professionally managed as compared to other hospitals. As the negative gap exists in all the 5 dimensions, it is attributed to lack of knowledge, lack of experience and expensive medical treatments. To overcome these gaps, a great improvement is required by the Government by creating various policies and procedures and even by private practitioners by following those policies and by giving necessary trainings, inculcating practices that are beneficial for the patients and giving satisfactory services initially only thus reducing waste of time and money on resolving and overcoming the complaints and issues.

To sustain in this competitive era, healthcare suppliers should consider the opinions of their consumers. Else it gets hard for them to keep the current patients and to recruit new patients. This propels the hospitals to comprehend what service quality intends to the consumers and how it will be best estimated. With the service quality the organizations would know the desires for its consumers, and attempts to keep up sufficient quality of services or products. There were many other quality models created previously, yet SERVQUAL was considered as the best model.

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PART 2:

A report on online course
Microsoft Excel – Excel from Beginner to Advanced

Microsoft Excel – Excel from Beginner to Advanced

-By Udemy

Introduction:

Microsoft Excel is a spreadsheet for Windows, Mac, OS, Android and iOS created by Microsoft. This includes computation, graphing tools, pivotal tables and a Visual Basic for Applications macro programming language. Excel is included in the software kit of Microsoft Office

Microsoft Excel incorporates the basic characteristics of all tablets, which can coordinate data manipulation including arithmetic operations using a grid of cells organized in numbered rows and letter names. We are fitted with a battery of functions to meet statistical, technological and financial needs. Furthermore, data can be seen in line charts, histogram and maps and a very restricted graphical view in three dimensions. Information can be divided into various variables to display their dependencies for different viewpoints (by using pivot tables and the scenario manager).

VBA programming

Excel supports Microsoft Visual Basic for Applications (VBA) programming that is a variant of Visual Basic, the version of Windows Excel. VBA programming enables manipulation of the screen with normal screen techniques which is difficult or impossible. The Visual Basic Editor (VBE) can be used for the writing of code directly by programmers, providing an organization window, debug code and application module environment. The user can use

digital methods to automate tasks such as formatting or the organization of data in VBA and can direct calculation by means of any requested intermediate results.

Course Description:

This is a Microsoft Excel all in one package combining 4 different courses.

1. Microsoft Excel 101 – An Introduction to Excel
2. Microsoft Excel 102 – Intermediate level Excel
3. Microsoft Excel 103 – Advanced level Excel
4. Microsoft Excel Macros and VBA

Other details include:

- Master Microsoft Excel from Beginner to Advanced
- Build a solid understanding on the Basics of Microsoft Excel
- Learn the most common Excel functions used in the Office
- Harness the full power of Microsoft Excel by automating your day to day tasks through Macros and VBA
- Maintain large sets of Excel data in a list or table
- Create dynamic reports by mastering one of the most popular tools - PivotTables
- Unlocking dynamic formulas with IF, VLOOKUP, INDEX, MATCH functions and many more.

Instructor

Mr Kyle Pew (Microsoft Certified Trainer)

Course Duration

17 hours and 30 minutes

Objectives of the Course:

To have thorough knowledge and understanding about Microsoft Excel Interface. To be able to perform functions using this and have knowledge of Basic excel, Intermediate excel, Advance excel and Macros and VBA.

Course Contents:

Microsoft Excel 101 - An Introduction to Excel

Section1: Microsoft Excel 101 course introduction.
Section 2: Microsoft Excel Fundamentals.
Section 3: Entering and Editing Text and Formulas.
Section 4: Working with Basic Excel Functions.
Section 5: Modifying an Excel Worksheet.
Section 6: Formatting Data in an Excel Worksheet.
Section 7: Inserting Images and Shapes into an Excel Worksheet.
Section 8: Creating Basic Charts in Excel.
Section 9: Printing an Excel Worksheet.
Section 10: Working with Excel Templates.

Microsoft Excel 102 - Intermediate Level Excel

Section12: Microsoft Excel 102 Course Introduction.
Section 13: Working with an Excel List.
Section 14: Excel List Functions.
Section 15: Excel Data Validation.
Section 16: Importing and Exporting Data.
Section 17: Excel PivotTables.
Section 18: Working with Excel's PowerPivot Tools.
Section 19: Working with Large Sets of Excel Data.

Microsoft Excel 103 - Advanced Level Excel

Section 21: Microsoft Excel 103 Course Introduction.
Section 22: Working with Excel's Conditional Functions.

Section 23: Working with Excel's Lookup Functions

Section 24: Working with Excel's Text Based Functions.

Section 25: Auditing an Excel Worksheet.

Section 26: Protecting Excel Worksheets and Workbooks.

Section 27: Mastering Excel's "What If?" Tools.

Section 28: Automating Repetitive Tasks in Excel with Macros.

Microsoft Excel Macros and VBA in 6 Simple Projects

Section 30: Microsoft Excel Macros and VBA Course Introduction.

Section 31: Project #1: Using Excel's Macro Recorder Tool.

Section 32: Excel VBA Concepts.

Section 33: Project #2: Moving Beyond the Basics and into VBA.

Section 34: Project #3: Preparing and Cleaning Up Data with a Little VBA.

Section 35: Project #4: Using VBA to Automate Excel Formulas.

Section 36: Project #5: Bringing it All Together and a Weekly Report.

Section 37: Project #6: Working with Excel VBA User Forms.

Section 38: Project #7: Importing Data from Text Files.

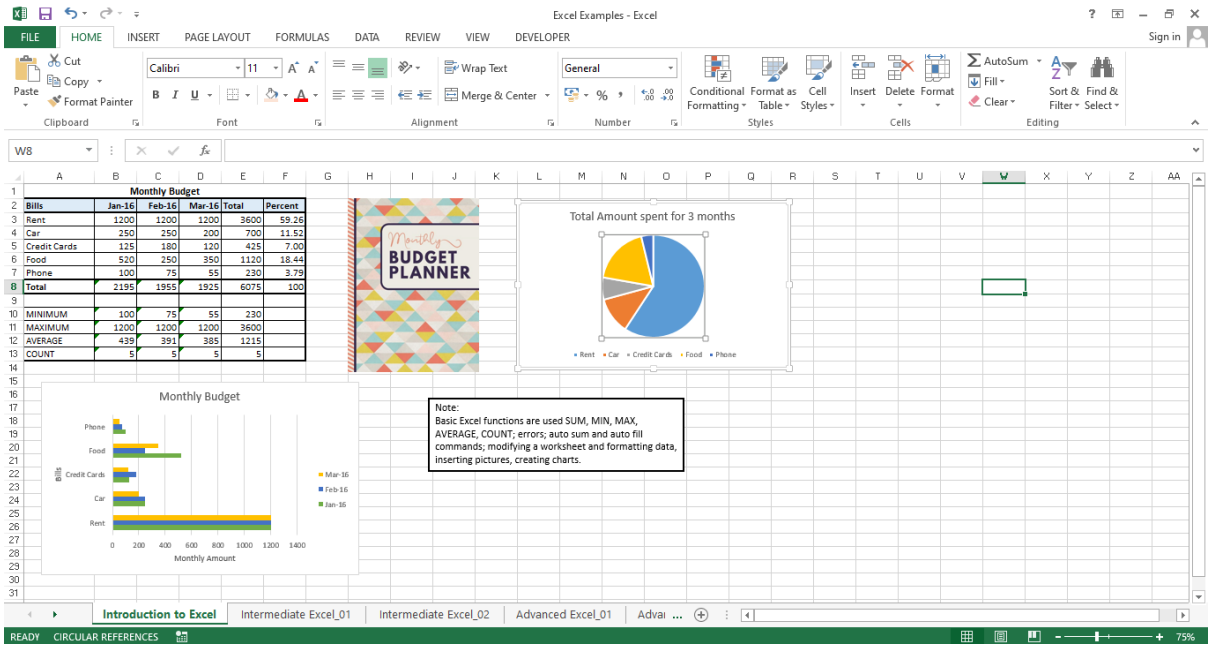
Learning Methodology:

Course content was online with videos followed by resources for hands on training

Key Learnings:

Microsoft Excel 101 - An Introduction to Excel

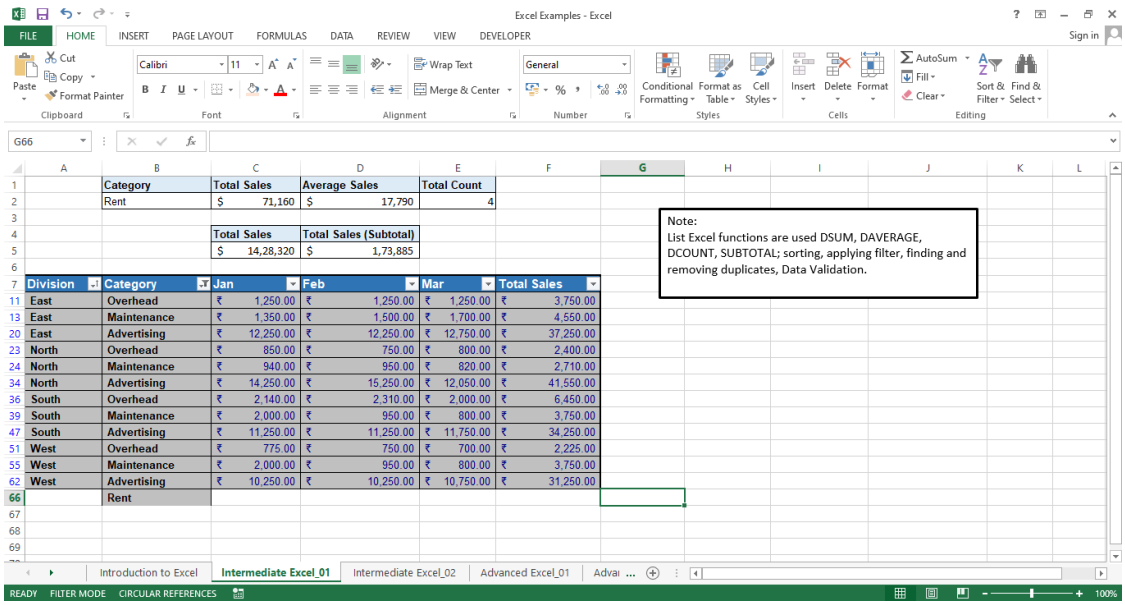
An introduction was given about how to open the Excel, its start-up screen, excel interface, toolbars, shortcut keys and saving and opening files. Got to learn about cell references; basic formulas like SUM, MIN, MAX, AVERAGE, COUNT; errors; auto sum and auto fill commands. Modifying a worksheet and formatting data, inserting pictures, creating charts, printing a sheet and working with excel templates was taught.

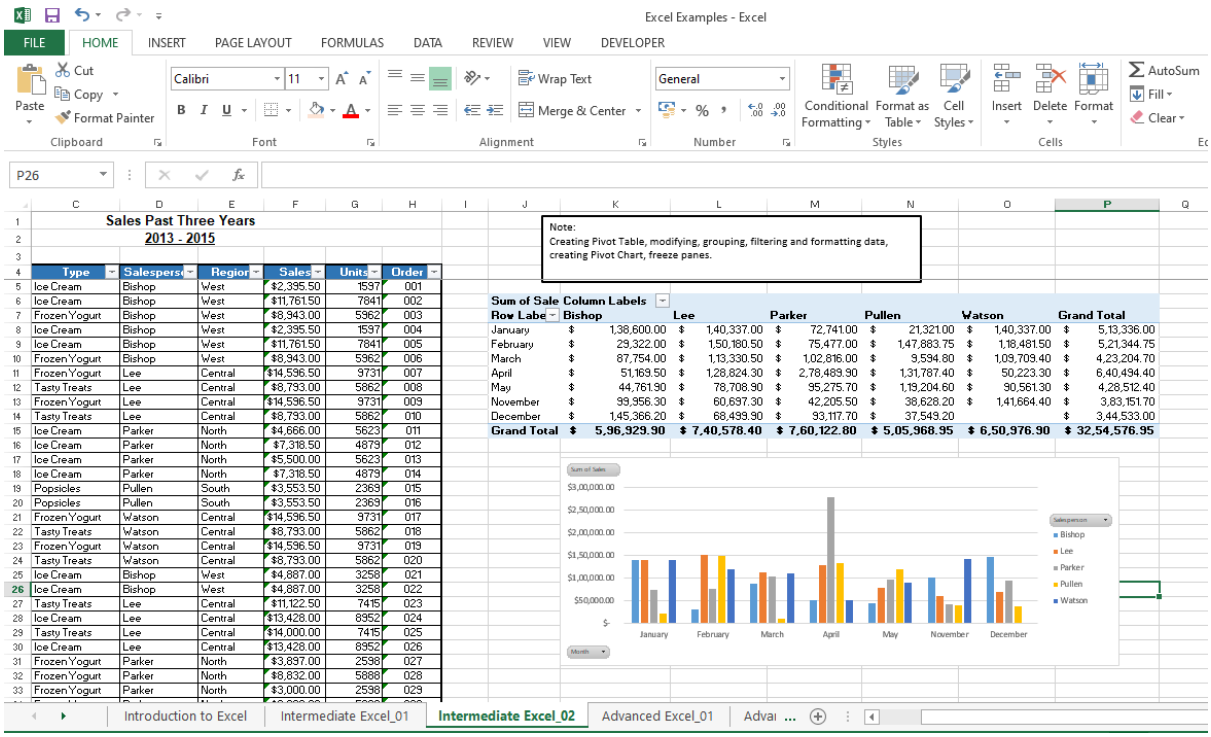


Microsoft Excel 102 - Intermediate Level Excel

Intermediate level excel explained about sorting, applying filter, finding and removing duplicates, Data Validation, working with large data set and about importing and exporting data from Microsoft Excel to other text files or Microsoft Access. Other functions like DSUM, AND, DAVERAGE, DCOUNT and SUBTOTAL were explained.

Detailed explanations were given about PivotTables (creating, modifying, grouping, filtering and formatting data) & PowerPivot tools.

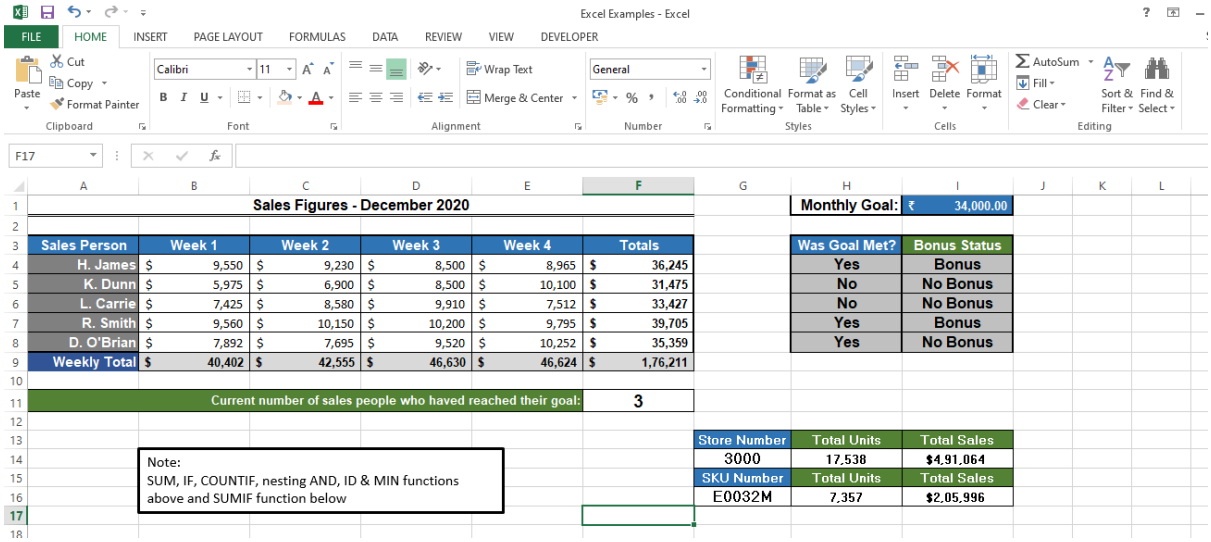


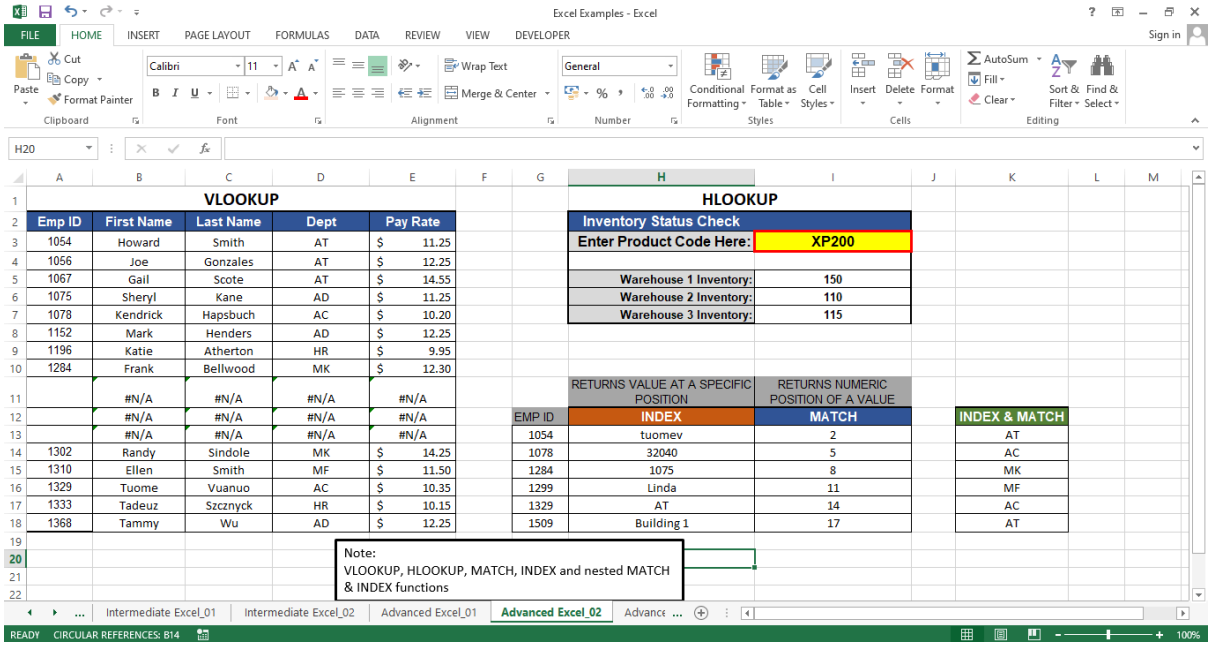


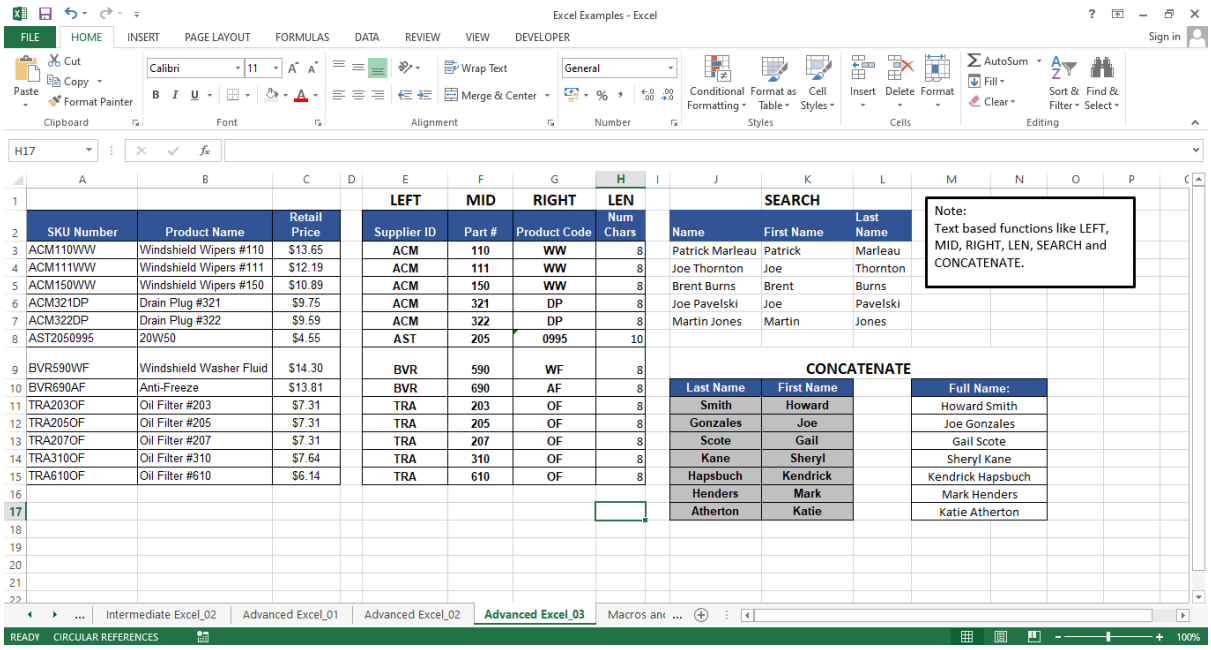
Microsoft Excel 103 - Advanced Level Excel

Conditional functions such as IF, COUNTIF, SUMIF, IFERROR and nesting Excel's AND & IF functions; Lookup functions like VLOOKUP, HLOOKUP, INDEX, MATCH, combined INDEX and MATCH function and combined HLOOKUP and MATCH functions; Text based functions like LEFT, RIGHT, MID, LEN, SEARCH, CONCATENATE functions were explained in detail.

Auditing worksheets, protecting worksheets and workbooks, explanations about Excel's What If tools like Goal Seek, Solver were taught along with explaining a brief about Macros – understanding it, activating the developer tab, creating a macro with macro recorder, editing it with VBA and creating buttons to run a macro was taught.


Excel Examples - Excel
FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW DEVELOPER
F17
Sales Figures - December 2020
Monthly Goal: ₹ 34,000.00
Sales Person | Week 1 | Week 2 | Week 3 | Week 4 | Totals
H. James | $ 9,550 | $ 9,230 | $ 8,500 | $ 8,965 | $ 36,245
K. Dunn | $ 5,975 | $ 6,900 | $ 8,500 | $ 10,100 | $ 31,475
L. Carrie | $ 7,425 | $ 8,580 | $ 9,910 | $ 7,512 | $ 33,427
R. Smith | $ 9,560 | $ 10,150 | $ 10,200 | $ 9,795 | $ 39,705
D. O'Brian | $ 7,892 | $ 7,695 | $ 9,520 | $ 10,252 | $ 35,359
Weekly Total | $ 40,402 | $ 42,555 | $ 46,630 | $ 46,624 | $ 1,76,211
Was Goal Met? | Bonus Status
Yes | Bonus
No | No Bonus
No | No Bonus
Yes | Bonus
Yes | No Bonus
Current number of sales people who haved reached their goal: 3
Note:
SUM, IF, COUNTIF, nesting AND, ID & MIN functions above and SUMIF function below
Store Number | Total Units | Total Sales
3000 | 17,538 | $4,91,064
SKU Number | Total Units | Total Sales
E0032M | 7,357 | $2,05,996


Excel Examples - Excel
FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW DEVELOPER
H20
VLOOKUP
Emp ID | First Name | Last Name | Dept | Pay Rate
1054 | Howard | Smith | AT | $ 11.25
1056 | Joe | Gonzales | AT | $ 12.25
1067 | Gail | Scote | AT | $ 14.55
1075 | Sheryl | Kane | AD | $ 11.25
1078 | Kendrick | Hapsbuch | AC | $ 10.20
1152 | Mark | Henders | AD | $ 12.25
1196 | Katie | Atherton | HR | $ 9.95
1284 | Frank | Bellwood | MK | $ 12.30
#N/A | #N/A | #N/A | #N/A
#N/A | #N/A | #N/A | #N/A
#N/A | #N/A | #N/A | #N/A
1302 | Randy | Sindole | MK | $ 14.25
1310 | Ellen | Smith | MF | $ 11.50
1329 | Tuome | Vuanuo | AC | $ 10.35
1333 | Tadeuz | Szcznyck | HR | $ 10.15
1368 | Tammy | Wu | AD | $ 12.25
HLOOKUP
Inventory Status Check
Enter Product Code Here: XP200
Warehouse 1 Inventory: 150
Warehouse 2 Inventory: 110
Warehouse 3 Inventory: 115
RETURNS VALUE AT A SPECIFIC POSITION
RETURNS NUMERIC POSITION OF A VALUE
EMP ID | INDEX | MATCH
1054 | tuomev | 2
1078 | 32040 | 5
1284 | 1075 | 8
1299 | Linda | 11
1329 | AT | 14
1509 | Building 1 | 17
INDEX & MATCH
AT
AC
MK
MF
AC
AT
Note:
VLOOKUP, HLOOKUP, MATCH, INDEX and nested MATCH & INDEX functions
Intermediate Excel_01 | Intermediate Excel_02 | Advanced Excel_01 | Advanced Excel_02 | Advance ...
READY CIRCULAR REFERENCES: B14



Microsoft Excel Macros and VBA in 6 Simple Projects

Project #1: Using Excel's Macro Recorder Tool

Introduction was given about a macro, inserting and editing text in a macro, recording a macro, running a macro and practical uses of macro. VBA – Visual Basic Application concepts, VBE – Visual Basic Editor concepts, VBA modules, process of creating a VBA procedure, adding codes, understanding variables, working with IF statement and with VBA loops were all taught.

Project #2: Understanding the VBA

Explanations were given about breaking down the VBA code, prompting the user for information, creating VBA InputBox and alerting the users for errors. Other practical uses of messages and InputBox were also mentioned.

Project #3: Preparing and cleaning up data with VBA

Got to learn about cleaning and formatting data with VBA. An example was given on how to add headers, format headers by recording a macro and then running the loop.

Project #4: Automating Excel formulas with VBA

Explanations were given for how to automate Excel formulas by an example of automating SUM function through code, to test it and to perform it in loop over multiple worksheets.

Project #5: Combining to make final report

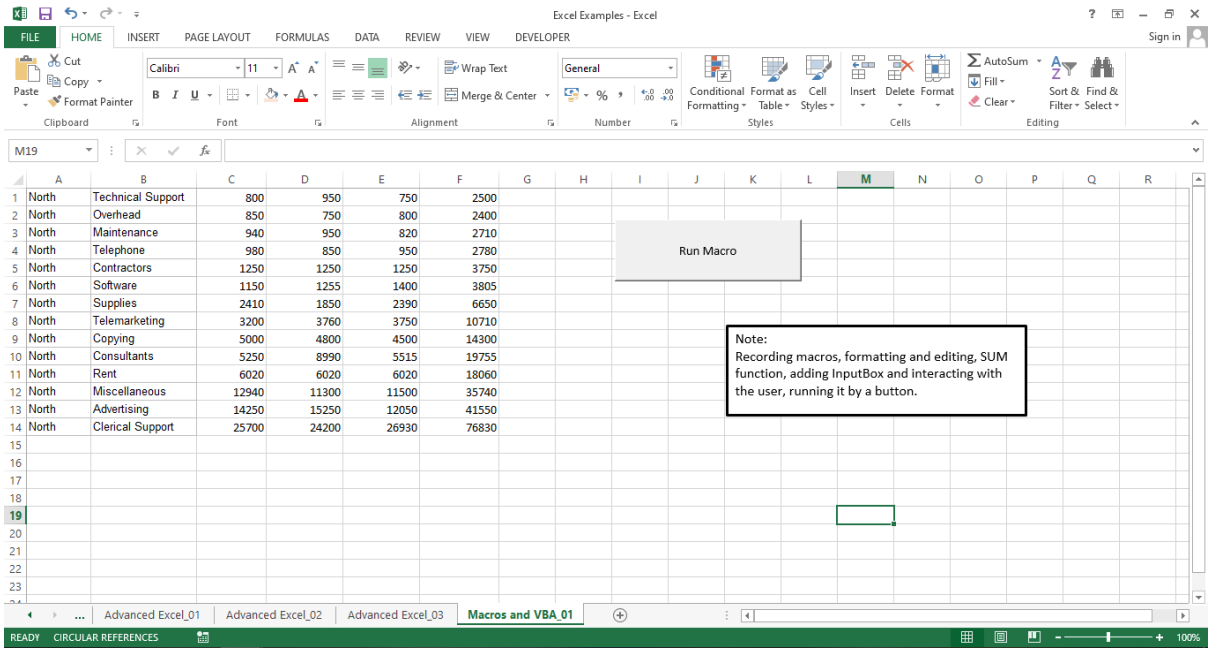
How to create a final report, making a final report loop, copying and pasting data using VBA and running the final report procedure were taught.

Project #6: Excel VBA user forms

Introduction was given about Excel VBA User Form. Further explanations were given about how to create it, how to add control to the form, how to add VBA code to initialize event, how to add VBA code to ComboBox change event, how to add VBA code to add worksheet button and to change name of the worksheet and how to add VBA code to create report button.

Project #7: Importing data from text files

Explanations were given about how to open a text file for import, how to get data from text file, how to import multiple text files with the GetOpenFilename method, to create a loop to read each file, to add a new sheet for imported data and creating reusable code with a VBA function.



North	Technical Support	800	950	750	2500	
North	Overhead	850	750	800	2400	
North	Maintenance	940	950	820	2710	
North	Telephone	980	850	950	2780	
North	Contractors	1250	1250	1250	3750	
North	Software	1150	1255	1400	3805	
North	Supplies	2410	1850	2390	6650	
North	Telemarketing	3200	3760	3750	10710	
North	Copying	5000	4800	4500	14300	
North	Consultants	5250	8990	5515	19755	
North	Rent	6020	6020	6020	18060	
North	Miscellaneous	12940	11300	11500	35740	
North	Advertising	14250	15250	12050	41550	
North	Clerical Support	25700	24200	26930	76830	

The same examples of what has been learnt is shown in an Excel Document given below. The different Course Contents are given in different worksheets in the same workbook. Please follow this link:

[Excel\Excel Examples.xlsm]