

HR Analytical Competency in Service Industry: A Case Study

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Abstract

In the rapidly evolving landscape of the service industry, the role of Human Resources (HR) professionals has become increasingly complex and demanding. This paper explores the analytical competencies essential for HR professionals in the service sector through a comprehensive case study. The goal of the study is to pinpoint the crucial analytical abilities and subject areas that HR professionals need to be proficient in this fast-paced workplace.

The research employs a mixed-methods approach, combining statistical tools and questionnaire survey with HR professionals from various service industry sectors. The data collected provides valuable insights into the analytical competencies most prized by HR practitioners and their perceived impact on organizational effectiveness.

By giving insight on the changing nature of HR jobs in the service industry and the rising significance of analytical capabilities in HR professionals' skill sets, this study adds to the body of HR literature. In order to keep up with industry trends, it emphasizes the importance of continual training and development for HR professionals. In the end, the study emphasizes how crucial analytical skills are to improving HR's strategic contribution to the achievement of service sector firms.

Keywords: Analytical Competencies, HR Professionals, Service Industry.

Introduction

The service sector has become a crucial sector with a direct impact on the world economy in today's quickly changing economic landscape. Organizations in this sector have particular difficulties as a result of the spread of technology, shifting customer expectations, and a competitive employment market, which call for the presence of HR specialists who are highly competent and flexible. HR professionals in the service sector need a special set of skills to address these issues head-on, with analytical abilities being of utmost importance.

The service sector is distinguished by its intangible products and the crucial role that people play in providing high-quality services. Recruitment, development, and retention of talent are the responsibilities of HR professionals in this industry to guarantee the consistent provision of great customer experiences. Since they allow for data-driven decision-making, strategic planning, and the creation of cutting-edge HR practices, analytical skills have become crucial for HR professionals in the service sector.

This paper explores the multifaceted landscape of analytical competencies within the HR function of the service industry. It delves into the following key areas:

- 1. The Evolution of HR in the Service Industry:** A historical overview of how the HR function has changed in the service industry and the shifting dynamics that have made it necessary for HR practitioners to develop analytical abilities.
- 2. Definition of Analytical Competencies:** a thorough examination of what analytical competencies mean in the context of human resources in the service sector. This section will highlight the particular knowledge and skill sets required for HR practitioners to succeed, including data analysis, workforce planning, predictive analytics, and the use of HR technologies.
- 3. The Role of Analytical HR in Strategic Decision-Making:** This section discusses how analytical skills enable HR practitioners to strategically contribute to the success of an organization.
- 4. Challenges and Barriers:** This section looks at the challenges HR professionals encounter while attempting to learn and use analytical skills. The best strategies for resolving these issues are also covered in this section.
- 5. The Future of HR Analytics in the Service Industry:** Provides information on upcoming trends and developments in HR analytics as well as suggestions for HR professionals on how to get ready for the changing environment.

This paper aims to provide a thorough understanding of how HR professionals can adapt to and thrive in an ever-

changing business environment, ultimately contributing to the success of their organizations, by shedding light on the crucial role of analytical competencies within the HR function of the service industry.

Review of Literature:

Here's a review of the literature on the analytical competencies of HR professionals in the service industry, along with references:

1. Evolution of HR in the Service Industry:

Ulrich and Brockbank (2005) claim in their key book that HR has changed from being a simply administrative function to a strategic partner in enterprises. This transition is especially important in the service sector, where HR is vital to guaranteeing customer and employee happiness.

2. Analytical Competencies Defined:

In their 2017 article, Marler and Boudreau (2017) emphasized the value of HR analytics and described analytical competencies as including knowledge of data analysis, statistical modeling, and the capacity to convert HR measurements into useful information.

The capacity of HR practitioners to use HR technology and data analytics tools successfully is important, especially in the service business where knowing worker dynamics is crucial, according to a study by Van Den Heuvel and Bondarouk (2017).

3. Role of Analytical HR in Strategic Decision-Making:

Rasmussen et al. (2018) offer insights into the strategic role that analytical HR techniques, like workforce planning and predictive analytics, play in the service sector. They contend that these actions link personnel management plans to corporate goals.

According to empirical research by King, Kylie. (2016), businesses with a higher degree of service quality tend to use HR analytics in decision-making. These insights assure a motivated and well-trained workforce.

4. Challenges and Barriers:

Ployhart and Moliterno (2011) point out obstacles HR professionals must overcome to develop analytical skills, such as poor data quality, a reluctance to adopt new technologies, and resistance to change.

Marler and Boudreau (2017) point to cultural opposition to data-driven decision-making as a major obstacle to the adoption of HR analytics.

5. The Future of HR Analytics in the Service Industry:

In order to predict workforce trends and improve employee engagement, Schiemann (2016) predicts that HR analytics in the service sector will substantially use artificial intelligence and machine learning in the future.

Davenport (2019) discusses how incorporating big data analytics and predictive modeling into HR procedures would fundamentally alter how the service industry makes strategic decisions.

According to the literature, analytical skills are crucial for HR professionals in the service sector to adapt to the ever-changing environment, make data-driven decisions, and strategically contribute to organizational success. The future of HR analytics in the service industry is likely to incorporate cutting-edge technology like AI and predictive modeling, but there are still issues like data quality and cultural resistance that need to be addressed.

Objectives

1. To identify the HR Analytical Software being used by service industry
2. To analyze the analytical competency level of HR professionals
3. To identify difference in analytical competency level of HR professionals with respect to type of service industry
4. To check the impact of demographic variables on analytical competencies of HR professionals

Hypotheses

1. There is a no significant difference in analytical competency level of HR professionals with respect to type of service industry
2. There is no significant impact of demographic variables on analytical competencies of HR professionals

Research Methodology

Research Design: the research is intended to study the analytical proficiency of HR professionals working in

various sectors of service industry. To serve this objective descriptive research design was used.

Sampling: the population frame included all the hr professionals working in the five service industry i.e. Fmcg& retail, healthcare, information technology, banking & finance and telecommunication. In the final sample 118 HR professionals were included.

Data Collection Tool: to serve the objective a well-structured closed ended questionnaire was used. The questionnaire was divided into two parts. The first part covered demographic and professional profile of respondents whereas second part analyzed the analytical competency of HR professionals.

Data Analysis Tool: the collected data was coded into ms excel and then same was imported in spss 21.0. To serve the objectives of research mean, standard deviation, coefficient of variation, anova and chi-square test were used.

Analysis of Data

Demographic & Professional Profile of Respondents

The first part of the questionnaire collected information about respondents' demographics and job profile, and the data pertaining to same is presented in table 1

- Gender of Respondents: the ration of male and female sample HR professionals was found to be 9:11. It shows that HR departments are having more females as compared to male employees.
- Age of Respondents: As per the age bifurcation depicted in table 1, majority of HR professionals were aged between 40 to 50 years (33.05%) followed by 50 to 60 years (30.51%) and 30 to 40 years (21.19%). Less than 10% of the HR professionals were aged below 30 years and above 60 years.
- Service Industry of Respondents: As this research considered five major service sectors of economy so research tried to cover all sectors equally, however the actual respondents selected from each sector is shown in table 1. The highest numbers of HR professionals were picked from IT sector whereas least number of employees was included from telecommunication sector.

- **Work Experience of Respondents:** On the basis of work experience respondents were classified into three categories as depicted in table shown below. Majority of respondents (41.53%) were having experience of less than 5 years followed by 5 to 10 years (33.90%) and more than 10 years (24.58%).
- **Position in HR department:** Respondents were asked to indicate their designation in HR department and as a response it was observed that 41.53% respondents were HR assistant, 22.03% employees were assistant HR managers, 24.58% HR professionals were managers, 9.32% respondents were senior manager and 2.54% employees were designated as HR director.
- **Functional Area of Respondents:** As the HR department has various portfolios so at the end of section one of questionnaire the respondents were asked to indicate their portfolios. The various portfolios highlighted by the HR professionals were recruitment & selection, training & development, Compensation management, succession planning and employee engagement.

Table 1: Demographic & Professional Profile of Respondents

Gender	N	Percentage	Work Experience	N	Percentage
Male	54	45.76	Less than 5 Years	49	41.53
Female	64	54.24	5 to 10 Years	40	33.90
Transgender	0	0.00	More than 10 Years	29	24.58
Total	118	100	Total	118	100
Age	N	Percentage	Position in HR Dept	N	Percentage
20-30 Years	11	9.32	HR Assistant	49	41.53
30-40 Years	25	21.19	Asst. Manager	26	22.03
40-50 Years	39	33.05	Manager	29	24.58
50-60 Years	36	30.51	Sr. Manager	11	9.32
Above 60 Years	7	5.93	HR Director	3	2.54
Total	118	100	Total	118	100
Type of Service Industry	N	Percentage	HR Functional Area	N	Percentage
FMCG & Retail	25	21.19	Recruitment & Selection	27	22.88
Healthcare	19	16.10	Training & Development	35	29.66
Information Technology	31	26.27	Compensation Management	26	22.03
Banking & Finance	28	23.73	Succession Planning	18	15.25
Telecommunication	15	12.71	Employee Engagement	12	10.17
Total	118	100	Total	118	100

HR Analytical Software being used in Service Industry

One of the objectives of this research is to identify HR Analytical Software being used by service industry, so this section presents the data pertaining to this objective in following sub-sections:-

- **Number of HR Analytical Software Used:** Table 2 is showing the number of analytical software used in the HR departments of service industry. As per results majority of service companies are using only one HR

analytical software whereas 27% and 24% companies are using two and three software respectively.

Table 2: Number of HR Analytical Softwares Used

No of Softwares Used	N	Percentage
Only One	41	34.75
Two	32	27.12
Three	28	23.73
Four	12	10.17
More than Four	5	4.24
Total	118	100

HR Analytical Software used in Service Industry:

Further respondents were asked to indicate the HR analytical software(s) being used by their company. It was found that MS Excel is the most used HR analytical

software followed by SPSS and R. More than 20% of the HR professionals highlighted that their companies are using SAS, Tableau and Python for analysis of data. Only 14.41% respondents indicated the use of Qlik View.

Table 3: HR Analytical Softwares used in Service Industry

Softwares Used for Analytics	N	Percentage
MS Excel	91	77.12
SPSS	47	39.83
SAS	32	27.12
R	39	33.05
Python	28	23.73
Tableau	31	26.27
Qlik View	17	14.41

Analytical Competency of HR Professionals

By using the analytical software various statistical calculations can be done to analyse and interpret the data. From the extensive review of literature the most used statistical tools were identified and listed. This list was given to HR professionals and they were asked to indicate their proficiency on five point scale ranging from basic to expert. The scale items were described as follows:-

1. Basic: The respondent has heard about this tool and possessing common knowledge about that tool. Respondent might not have idea to apply that tool by using analytical software.
2. Novice: The respondent has learned about that tool recently either by attending a training program or by his own experience.
3. Intermediate: The respondent is capable of performing statistical analysis under the guidance of an expert.
4. Advanced: The respondent has gained sufficient proficiency that now he is able to do analysis independently without the help of any expert.
5. Expert: The respondent has become expert now and now he assist other to perform statistical analysis as well as he troubleshoot and answer questions.

Table 4 is showing the count and percentages of proficiency levels for each statistical tools; further table 5 is presenting the mean, standard deviations and coefficient of variations for each statistical tool. From the mean score it can be inferred that HR professional are having advanced proficiency in performing basic statistical calculations i.e. averages and percentiles etc.

The respondents indicated that they can perform measures of dispersion, correlation, regression, ANOVA, factor analysis, reliability, sampling techniques and multivariate techniques under the supervision of experts. That indicates their intermediate proficiency about these tools. The respondents also said that they can prepare statistical reports to make statistical results understandable under the guidance of expert.

HR professionals said that they have learned about few tools recently by experience or in training programs i.e. causal paths, six sigma analysis and treatment v/s control groups. It was observed that none of the statistical technique was found in basic category that means all the HR professionals were having bear minimum proficiency in statistical analysis.

Table 4: Frequency Distribution of Analytical Competency of HR Professionals

Proficiency Level	Basic		Novice		Intermediate		Advanced		Expert	
	N	%age	N	%age	N	%age	N	%age	N	%age
Performing basic statistical calculations - Averages (Mean, Median), Percentiles	16	13.56	18	15.25	22	18.64	32	27.12	30	25.42
Calculating statistically significant differences - Range, Variances, Standard deviation	25	21.19	17	14.41	31	26.27	27	22.88	18	15.25
Performing Correlation, Regression	24	20.34	27	22.88	25	21.19	24	20.34	18	15.25
Performing ANOVA, Factor Analysis	29	24.58	25	21.19	27	22.88	21	17.80	16	13.56
Selecting sample, designing survey item, Verifying validity and reliability	12	10.17	29	24.58	39	33.05	27	22.88	11	9.32
Using Advanced multivariate models (Structural equations models, Bivariate / multivariate choice models, Cross-level models)	20	16.95	24	20.34	38	32.20	22	18.64	14	11.86
Identify causal paths	21	17.80	42	35.59	45	38.14	4	3.39	6	5.08
Six Sigma analysis	31	26.27	34	28.81	35	29.66	9	7.63	9	7.63
Formulate treatment vs. control groups	29	24.58	40	33.90	31	26.27	15	12.71	3	2.54
Preparing statistical reports to make statistical results understandable	25	21.19	32	27.12	34	28.81	10	8.47	17	14.41

Table 5: Mean, S.D. and C.V. about Analytical Competency of HR Professionals

Items	Mean	S.D.	C.V.	Proficiency Level
Performing basic statistical calculations - Averages (Mean, Median), Percentiles	3.41	1.86	0.55	Advanced
Calculating statistically significant differences - Range, Variances, Standard deviation	2.97	1.83	0.62	Intermediate
Performing Correlation, Regression	2.87	1.84	0.64	Intermediate
Performing ANOVA, Factor Analysis	2.75	1.85	0.67	Intermediate
Selecting sample, designing survey item, Verifying validity and reliability	2.97	1.25	0.42	Intermediate
Using Advanced multivariate models (Structural equations models, Bivariate / multivariate choice models, Cross-level models)	2.88	1.53	0.53	Intermediate
Identify causal paths	2.42	0.97	0.40	Novice
Six Sigma analysis	2.42	1.38	0.57	Novice
Formulate treatment vs. control groups	2.35	1.13	0.48	Novice
Preparing statistical reports to make statistical results understandable	2.68	1.68	0.63	Intermediate

Table 6 is depicting the overall analytical competency of HR professional considered under study. It can be seen that 26.27% respondents were having good analytical competency and the analytical competency of 29.66%

respondents was average. However analytical competency level of majority of respondents (44.07) was found to be bad.

Table 6: Overall Analytical Competency of HR Professionals

Overall Proficiency Level	N	Percentage
Good	31	26.27
Average	35	29.66
Bad	52	44.07
Total	118	100

Further overall analytical competency of HR professionals was ascertained with respect to type of service industry as shown in table 7. It can be observed that analytical competency of HR professionals working in IT industries

was highest (2.19) followed by HR employees of FMCG (1.84) and telecommunication (1.73). It was observed that HR professional of healthcare (1.68) and banking & finance (1.54) were having least analytical competency.

Table 7: Service Industry wise Overall Analytical Competency of HR Professionals

Type of Service Industry	Bad	Average	Good	Total	Mean	Rank
FMCG & Retail	12	5	8	25	1.84	2
Healthcare	11	3	5	19	1.68	4
Information Technology	6	13	12	31	2.19	1
Banking & Finance	17	7	4	28	1.54	5
Telecommunication	6	7	2	15	1.73	3
Total	52	35	31	118		

Although it has been observed that HR professional working in different service industries are possessing different analytical competency, still to measure significant difference in analytical competencies of HR professional following hypothesis has been taken under study:-

H01: There is a no significant difference in analytical competency level of HR professionals with respect to type of service industry

Ha1: There is a significant difference in analytical

competency level of HR professionals with respect to type of service industry

To test this hypothesis ANOVA test was applied and results received are presented in table 8. At 5% level of significance the value of F-statistic is significant which leads to the rejection of null hypothesis so it can be concluded that there is a significant difference in analytical competency level of HR professionals with respect to type of service industry.

Table 8: ANOVA test result to measure difference in analytical competency level of HR professionals with respect to type of service industry

Source of Variation	Sum of Squares	Degree of Freedom	Mean Sum of Squares	F-Ratio	p-value	Result
Between Samples	5834.6	4	1458.650	8.129	0.000	Significant
Within Samples	20276.127	113	179.435			
Total	26110.727	117				

Level of Significance=5%

The review of literature highlighted that analytical competency of professionals differ with respect to

demographic variables, so in this research this hypothesis was framed:-

H02: There is no significant impact of demographic variables on analytical competencies of HR professionals

Ha2: There is a significant impact of demographic variables on analytical competencies of HR professionals

Firstly the data of HR analytical competency was cross tabulated with the demographic profile of respondents and then chi-square test was applied as presented in table 9. The value of chi-statistic was found to be significant for gender and work experience of respondents whereas it was not significant for the age of respondents. So it can be

concluded that gender and work experience of HR professionals have significant impact on their analytical competencies.

Table 10 is showing the mean analytical competency level of HR professionals with respect to their gender and work experience. It was found that male HR professionals (2.00) were more competent in statistical analysis as compared to the female HR professionals. In work experience category the employees having work experience of 5 to 10 years were having the highest competency in statistical analysis.

Table 9: Chi-Square test result to measure impact of demographic variables on analytical competencies of HR professionals

Demographic Variable		Overall Proficiency Level				Chi-Square Value	p-Value	Significance
		Good	Average	Bad	Total			
Gender	Male	13	28	13	54	25.74	0.000	Significant
	Female	18	7	39	64			
	Total	31	35	52	118			
Age	20-30 Years	3	5	3	11	11.32	0.183	Not Significant
	30-40 Years	8	11	6	25			
	40-50 Years	9	10	20	39			
	50-60 Years	9	6	21	36			
	Above 60 Years	2	3	2	7			
	Total	31	35	52	118			
Work Experience	Less than 5 Years	8	9	32	49	26.27	0.000	Significant
	5 to 10 Years	19	11	10	40			
	More than 10 Years	4	15	10	29			
	Total	31	35	52	118			

Level of Significance=5%

Table 10: Analytical competencies of HR professionals with respect to Demographic Variables

Demographic Variable		Mean
Gender	Male	2.00
	Female	1.67
Work Experience	Less than 5 Years	1.51
	5 to 10 Years	2.22
	More than 10 Years	1.79

Conclusion and Recommendations

1. The results indicated that even in the era of technology majority of HR Professionals are using MS Excel for statistical analysis. It is recommended that companies should use advanced software, which will not only save

time but it will also increase efficiency of analysis.

2. It was found that more than 50% of the respondents were having good and average level of analytical competency but approximately 44% of the HR professional were

found bad in analysis. It is suggested that these HR professional should be given training so that they can compete in future.

3. Hypothesis testing revealed that HR professionals working in different service industries were having the different level of analytical competency. The employees of IT industry were found to be highly expert in statistical analysis. Other service companies are also advised to adopt the strategies followed by the IT industries in the field of analytical skills.
4. Results concluded that gender wise and work experience wise significant difference exists in the analytical competencies of HR professionals, so the management should assign the analysis work as per the demographic profile of employees and different training programs should be conducted for the employees belonging to the different demographic profile.

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Authors' contributions

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Authors declare that they have no conflict of interest.

Consent for publication

All the authors have provided their consent for publication in the PBR journal

Availability of data and materials

Not Applicable

Competing interests

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