



Analytics and its Application to Net Promoter Score (NPS)



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1. Introduction

Analytics is defined as the interpretation of data patterns that aid decision-making and performance improvement. Analytics in HR is the application of statistics, modelling, and analysis of various factors especially employee related metrics to improve business outcomes. This includes HR Analytics- covers metrics of HR function, People Analytics- Applies to customers of an organization and its employees and Workforce Analytics- Applies to employees, remote, gig workers, freelancers and consultants. The application of analytics to different set of stakeholders is what differentiates HR, People and Workforce analytics.



Figure 1: HR and Multiple Metrics

The key aspect of HR analytics is to provide data on the impact the HR department has on the organization as a whole. Establishing a relationship between what HR does and business outcomes – and then creating strategies based on that information – is what HR analytics is all about.

Business uses Cost, Time, Quantity, Quality and Human reaction to measure anything. How do we know what is important at any given point of time to track? The answer is: It depends. If measurement is an activity and activity is expense, it follows that we don't want to waste our time on metrics of little value. Value comes from knowledge of things that matter. And what matters is a business question, not an HR question: what matters at what points in time and for what organizational purpose.

Analytics helps us to answer few of these questions and requires us to delve deep into:

- **Recording** all the activities which we do (hiring, paying, training, coaching, and retaining)
- **Relating** the work to our organizational goals



- **Comparing** results and outcomes with benchmarked organizations
- **Understanding** past behavior and outcomes
- **Predicting** future probabilities

The HR needs to know and be able to explain why, what, and how it is doing what it does. It is only reasonable that when we ask for resources, we explain what we are going to do with them and the value that we intend to produce as a result. If we cannot provide supporting data, management is obliged to shift resources to those tasks and activities which generate “value” to the organization.

Traditionally, human capital management has provided more metrics and indicators on the processes than results. After all, counting money is easier than measuring happiness. Counting hours is easier than analyzing competence. Counting days is easier than estimating potential. Measurement is important for those situations where measurement is essential for management. Researches and scholars had deduced hypothesis based on their research for management use but not every time it is necessary to prove them to know if the management has been successful. For example, a handshake and a smile from an employee tell more about his or her “engagement” than an opinion poll. A sincere pat on the shoulder can do more to motivate than a bonus calculated with a rigorous algorithm. With interpersonal relationships, common sense is a key we should not forget. For many managers, measuring processes makes them feel in control.

Information about the past is important as long as it helps us understand the present and enables us to make decisions about the future. In the recent times, the Indian Government has been able to save valuable lives of people and other livestock’s basis the smart usage of Analytics during thunderstorm and monsoon season. Not only they knew where it has been causing havoc in the past or where it is now but it has with fair degree of probability started to even predict where it will be in near future and thus taking necessary actions. Trying to predict the future with certainty is always beyond our intellectual possibilities, even with wide and accurate measurements. Yet trying to predict the future and proactively attempting to make it favourable are two of the key elements of success including in corporate world.

HR analytics demonstrates the causal relationship between the activities exacted by an HR department and the business outcomes that result from this activity. Once this causal relationship is discovered, HR analytics professionals can devise and implement a strategic plan to assist the business in attaining better outcomes.



2. Three levels of HR Analytics and Reporting

We can define three levels of HR Analytics and Reporting as follows;

Level 1- Descriptive Analytics – This is reporting of the basic metrics, their frequencies and percentages by various cuts using the tools like SAS/Reports and can be monthly, quarterly or annual reports. It provides “*What happened*”. The primary focus is on cost reduction and process improvement. From it, we begin to see trends from the past; yet, it is risky to extrapolate from the past into the future, considering the volatile, rapidly changing markets of today and likely tomorrow. It includes, for example, dashboards and scorecards; workforce segmentation; data mining for basic patterns and periodic reports.

Level 2- Predictive Analytics – It covers a variety of techniques (statistics, modelling, data mining) that uses current and historical facts to make predictions of future. It’s about probabilities and potential impact. It involves, for example, models used for increasing the probability of selecting the right people to hire, train and promote. It provides “*What can happen*”.

Level 3 – Prescriptive Analytics –It outlines decision options and workforce optimization. It is used to analyze complex data to predict outcomes, provide decision options, and show alternative business impacts. It involves, for example, models used for understanding how alternative learning investments impact the bottom line. It provides “*How to make it happen*”.

Predictive and prescriptive analytics interact just as doctor’s diagnosis and prescription. The doctor tells that if you take this medicine or follow a certain regimen, you will be cured. That is doctor’s prediction. When you read the prescription, it tells you what is necessary to validate the prediction in terms of which medicine needs to be taken under what conditions. Similar is in the case of business as well. In business the model will connect people policies, products and processes to achieve some improvement in performance. The model predicts certain patterns or relationships that interact to obtain the desired outcomes.



3. HR Analytics - Process

HR professionals gather data points across the organization from sources like Employee surveys, Telemetric data, Attendance records, Multi-rater reviews, Salary and promotion history, Employee work history, Demographic data, Recruitment process and Employee databases. HR leaders must align HR data and initiatives to the organization's strategic goals. Once data is gathered, HR analysts feed workforce data into sophisticated data models, algorithms, and tools to gain actionable insights. These tools provide insights in the form of dashboards, visualizations, and reports. Being HR Professional it would be helpful to know basics about Statistical Equation Modelling (SEM) which provides a useful insight into causal relationships analysis. Regression analysis also does afford HR leaders an opportunity to look at multiple pieces of data simultaneously and help prioritize the impact of people data on business outcomes. Most importantly, don't let the statistics be a barrier as the option of identifying someone internally or hiring external consultants for analysis is always feasible.

An HR leader that uses analytics properly to show business value will:

- Calculate return-on-investment for (nearly) everything that they do.
- Give evidence-based advice on how to drive the business from a people perspective.
- Be pursued by line-of-business leaders to help them reach business targets.
- Take accountability for a portion of the organization's financial health.
- Show results and not just HR activity completion (e.g. survey response rates).
- Create an HR strategy that has direct impact on the bottom-line.

Two strategies to analytics should be taken to maximize effectiveness and influence in an organization.

Process Analytics - Process Analytics helps connect an individual process to important business outcomes. Each process can be analyzed separately to show the return-on-investment and drive action and a sense of urgency for the results across the organization. This includes On-boarding, Staffing & Selection, Employee Engagement, Performance Management, Competencies, Leadership development, 360 Assessment and Work-life balance activities.

Integrated Analytics - HR Integrated Analytics combines the key business drivers from the Process Analytics approach into an integrated business-focused strategic plan. Succession is an important area that consists of several processes, but can be focused upon by an integrated analytics approach.

3.1 Steps to HR Analytics

1. **Starting with the End in mind** - An organization must first determine the top two to three most critical outcomes on which to focus. Example outcome variables can be productivity, turnover, customer satisfaction, cost, safety data related items etc.
2. **Represent outcomes using numbers**- Next determine how the data is currently captured in the organization. Each outcome measure must be assessed in terms of frequency, level of



measurement (by business unit, by manager, by function) and the owner of each of the outcome measures. The goal is to have apples-to-apples comparisons of the data—which means that if you want to look at productivity numbers, you need to have productivity data that is measured at the same interval (e.g., monthly) and at the same level for each manager.

3. **Objective Analysis of critical and key data-** This requires advanced statistical knowledge to link the data. These data are critical when triaging analytical opportunities. Triage is the process of examining available analytics opportunities to determine which should receive priority. By examining the data on the level and distribution of existing outcome data, it is possible to identify where there may be opportunities to raise the average outcome or shift the distribution of outcomes. Also structural equations modelling helps to determine, for example, whether employee attitudes about work-life balance are a cause-and-effect driver of increased customer satisfaction.
4. **Identify available intervention options and their costs-** At this action-planning stage focus activities at the systemic, organization wide, line of business or work-unit level. The investments focus should be on those employee processes/skills/attitudes/ demographics, which have been shown to have a direct impact on the organization's desired business outcomes.
5. **Measure and Adjust/Re-prioritize-** In the last step, re-measure to assess progress and calculate actual return-on-investment. Business leaders understand the importance of goal setting and measurement. They also understand the importance of creating a culture of measurement and accountability. Like other organizational decisions, leaders should make slight adjustments to initiatives along the way based on regular measurement results.

3.2 HR Analytics Case Study for NPS Augmentation

Employee engagement/satisfaction/commitment is not a business outcome, but it can be a driver of business outcomes. HR analytics allows linking the survey data that you collect to important business results and then focus your initiatives on those key areas that drive results. The key questions to ask are:

1. On what outcomes/metrics are the senior leaders in this organization most focused?
2. Who owns the specific data/metrics that senior leaders are focused? How do I connect with those individuals to obtain the data?
3. Are the important business data/metrics collected at the appropriate level i.e. department level/organization level)?
4. Do I have the statistical capabilities in-house or do I need to look at a university or consulting firm to help me analyze the data?
5. Based on the linkage analysis, what is the highest priority/ROI project that I should execute first?
6. How do I assess the change that has occurred and make adjustments.

Let us cover the case study on SaaS based industry where individual clients and employees of the customer firm use the software services on their individual device with their personal usage account. The payment is made not individually but by the firm to the service providing company on a monthly basis.

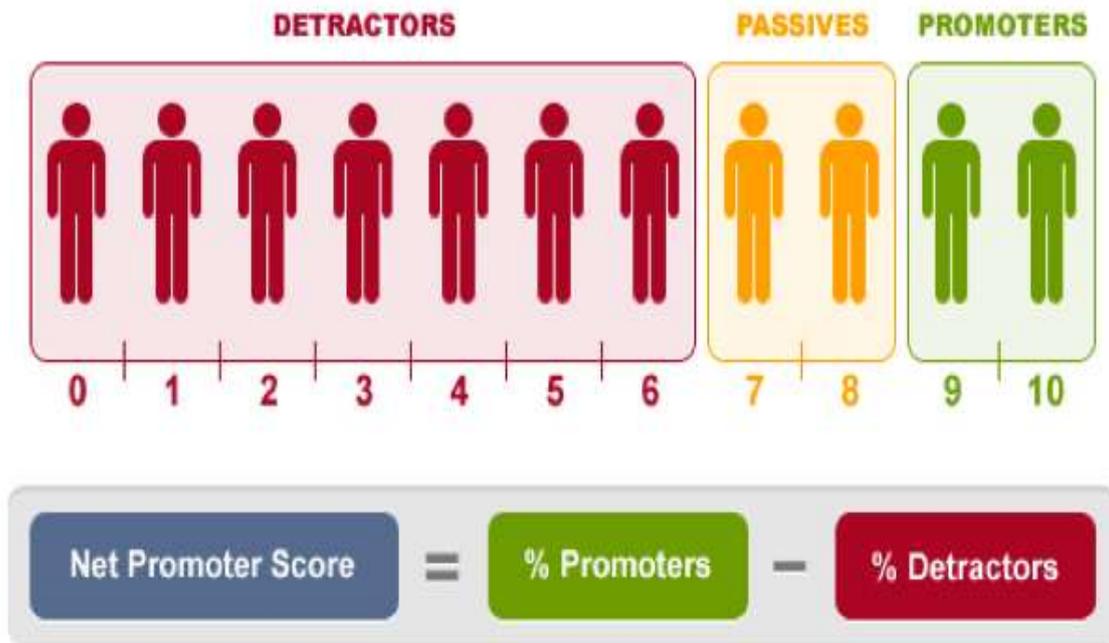


Figure 2: HR Analytics – NPS Category

NPS survey and score has become a critical business outcome with important financial implications for the firms. Especially, in the booming start-up culture where customer-centricity and growth are the central elements for the business, NPS has turned out to be a handy tool to understand the customers' sentiment towards the firm.

If for example, a firm needed to improve on their NPS scores and therefore viewed their people and customers as an opportunity. On a tactical level of analysis, qualitative and quantitative analysis including using some statistical method will help identify and relate to the specific head of improvements. On the people front, process and quality are the two survey category that has significant impact on NPS where as from the customer's point of view, the customer journey experience along with the customer loyalty; attitude and behaviour are very significant.

Looking at the People elements first, making HR analytics available and actionable to front-line leaders will expand impact in the organization. An analytical drawn heat map provides each process leader with an easy-to-understand chart that highlights the priorities action- based on cause-effect business impact. The HeatMaps allows providing all leaders, at all levels a quick way to incorporate analytics to prioritize exactly what needs their attention to impact results.

3.3 Strategic Survey Heat Map

The vertical axis on the heatmap is the percent favourable score achieved (probability) on each of the categories from the survey. The horizontal axis shows the level of impact that each of the survey categories had on the business outcome. The vertical bolded line near the middle of the heatmap reveals



the cut-off where the impact was significant or not significant. Every survey category to the right of the vertical bold line had a significant impact. Every survey category to the left of the vertical bold line did not have a significant impact.

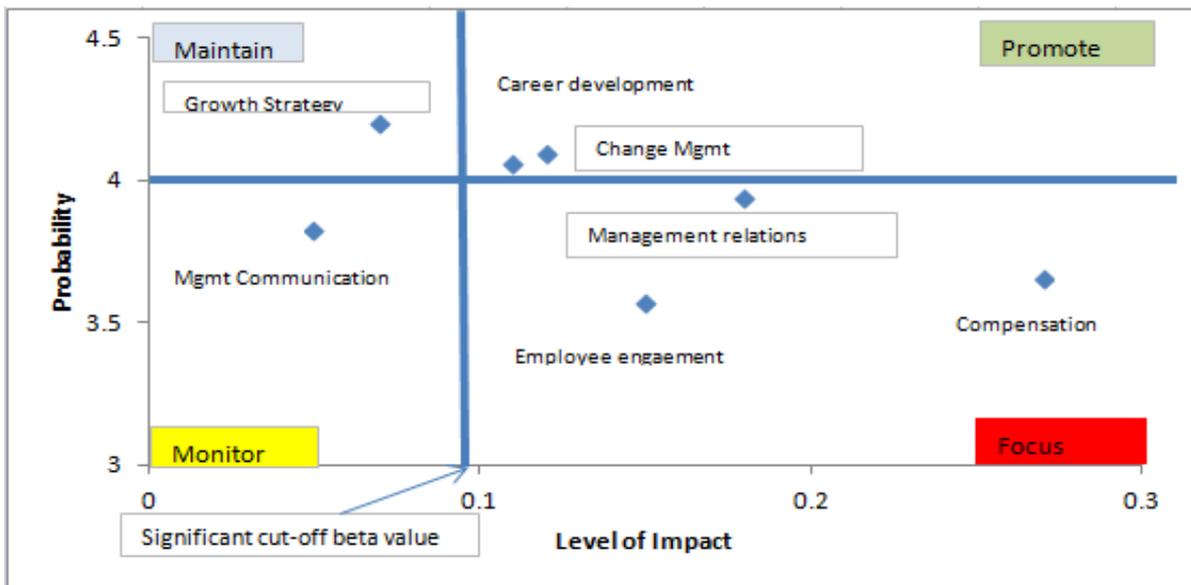


Figure 3: HR Analytics – Strategic Survey Heat Map

The horizontal bold line represents the “Organization-wide overall average probability” for the entire organization which can be determined by holding a meeting with senior leaders to gain their input. Any survey categories that are above the horizontal bold line are considered strengths. Any survey categories that are below the horizontal line are considered a developmental area.

The HeatMap is designed to help the leader get very detailed quickly by providing the specific items that make up each of these survey categories. Then, he or she can see specifically where to spend the most time.

The People section is relatively easy as compared to the analysis of next section of Customer analytics.

The customers are split into three distinct behavioural groups of Promoter, Passive and Detractors basis their rating of NPS survey. This is merely based on a response to a single question scale when the firms characterize the customers individually. Hence, it is important to understand on a micro level of the system (an individual customer).

Most of the SaaS based firms are sensitive about the customer churn. It is often measured and displayed with indices such as churn rate. HR Analytics comes into play to spot customer attributes prior to them churning out, so they can pull the right levers to save them from cancelling the subscription. NPS is intended to give a prior indication of unhappy customers. The effectiveness of NPS and the correlation with company growth and profitability is an established fact and is the primary outcome. The established understanding is that ‘the performance antecedents build loyal customers; loyal customers enable the firm to translate into the event of high NPS; the event translates into consequences such as revenue growth and firm profitability. On an individual level, the rating is merely an indicator that may translate into a customer behaviour such as word of mouth (WoM) and retention which furthermore reflect in high profits and growth.



The NPS phenomenon is analyzed on two levels, an individual respondent score level and the firm's NPS level which is considered as two separate units of analysis.

On an individual level analysis, the purpose is to understand

- What factors build the attitude that manifests loyalty/ satisfaction with regards to the particular individual rating to the NPS survey
- How the attitude does in return translates into a particular behaviour displayed by the customer?

On a Firm level analysis, the purpose is to understand

- Based on the understanding of individual sentiment, what are the factors as aggregate level of firm
- How does the NPS scores by market or product level?

To get a fair and deep understanding on these questions, an empirical exploration using quantitative and qualitative data analysis, interviews, surveys etc. needs to be done keeping all the relevant ethical principles and consideration in place.



4. Interpretation & Implementation of NPS

The unit of analysis in this is the company itself in relation to its customers and the industries. NPS has become a trending metric in SaaS firms due to its easy implementation with mostly digital interface leading the firms to use it as a KPI and benchmark it against other firms. Carrying out individual interviews with relevant employees would give a good understanding of firm's views. This will provide some observation like, easy to interpret, simple, captures the pulse of customers, customer sentiment through text analytics, reliable scores for more stable product, frequency and multiple channels for NPS response etc. Responses from multiple users from a customer company are not averaged out to declare it as a customer aggregate customer sentiment.

Understand Customer journey and how it relates to individual rating on NPS survey

The unit of analysis in this is the individual customer. The aim is to map the customer journey comprising of interactions and events and see if and how it affects the customer's sentiment towards the organization. The analytics would help to provide a very clear understanding of the customer's perspective. Below are some brief samples which will enable to provide broad level indicators.

Sample	Customer Voice	Category	Key Points
Sample 1	NPS Survey -5 Price - Acceptable Onboarding experience - Smooth, did not have any difficulty Brand Experience - Positive Service Experience - Satisfied Product experience - Happy (except missing feature pending for long time) Complaints - Missing feature Switching tendency - Medium Recommendation - recommended to two Companies with word of caution.	Detractor	<ul style="list-style-type: none">• Relatively low perceived value• Low product satisfaction (due to missing feature)• High service satisfaction• Positive perceived brand image• Recommendation behaviour in appropriate contexts with a word of caution
Sample 2	NPS Survey -8 Price - Justified Onboarding experience - only leader got onboarded (smooth) but no other employees Brand Experience - Positive (finds employees knowledgeable, aware and experienced) Service Experience - Satisfied Product experience - Happy (except missing feature pending for long time) Complaints - Data export feature causing issues	Passive	<ul style="list-style-type: none">• Positive perceived value• Positive brand image• Recommended behaviour• High service satisfaction• No alternate solution noticed• Single user and sole decision-maker



	Switching tendency- N/A Recommendation- recommended to friends and colleagues		
Sample 3	NPS Survey -9 Price – Acceptable Onboarding experience – Very satisfied with positive impression Brand Experience- Positive (finds employees knowledgeable , aware and experienced) Service Experience- Satisfied (extremely cooperative, responsive and helpful) Product experience- Very happy. Admires product flexibility Complaints- N/A Switching tendency- N/A Recommendation- recommended to friends and colleagues	Promoter	<ul style="list-style-type: none">• High perceived value• Positive brand image• High service satisfaction• High product satisfaction• High involvement• Recommendation behaviour

Table 1: Indicators



5. Loyalty, Attitude & Behavior

The unit of analysis in this is the individual customer. This involves analytical research and explores customer loyalty (using loyalty framework) from the perspective of individual users from the customer firm. A strong relative attitude should translate into a high individual NPS score and weak relative attitude should translate into a low score. The analytics will help to shift the focus to vendor firms from the customers. It is also important to address any commonalities or significant variation spotted among the NPS behaviour group (promoter, detractors and passives). Some probable hypothesis from the analysis:

- High strength of contextual cue may lead to high accessibility that determines likelihood to recommendation (WoM) directly.
- Detractors have less centrality if they have alternative solutions in place.
- Detractors significantly are unsatisfied with the product regardless of their own expectations.
- Satisfaction is one of the most dominant drivers of customer loyalty as seen in the case of Promoters.
- Cost of switching to alternative brands must be high.
- Higher the sunk cost, stronger is the relative attitude towards the brand. The "Sunk" effect is lower in case of SaaS industry.
- High paying customers tend to be happy customers and tend to share long relationships.
- Customers who pay upfront for a year or more are less likely to churn ('sunk effect" is higher).
- Decision making customer individuals who have high purchase involvement, their potential satisfaction can lead to high behavioural loyalty or retention. Product involvement is a complimenting component to the definition of purchase involvement in SaaS industry.
- Customer usage is one of the strongest indicators of customer health.
- If the product offering is unique and there are no alternatives for an acceptable switching cost, relationship will very likely perpetuate.

Relevance of NPS in various industries characterized by the nature of product and market

The unit of analysis in this is the firm level. The aim is to understand the firm level factors that might affect the interpretation of NPS and its intended outcomes. Generally the recommendation tendencies are the ultimate sign of customer loyalty as is evident from the sample cases mentioned in above section. The Word of Mouth (WoM) behaviour can be displayed even by Detractors and Passives. The stickiness of the tagged category of Detractors and Passives are also evident in spite of their complaints. The WoM and retention, portray clear signs of loyalty, but in a behavioural way. So the big question is *'why despite being unhappy with the tool they show retention tendencies and furthermore, word of mouth?*

Market dynamic plays a big role in such situation. Customers tend to seek higher perceived value due to a great problem that has no alternative solutions. Diversification growth strategy can be very effective if the firm offerings are in niche market and very few alternative solutions are available in market. Ansoff matrix (as below) provides a guide for the right strategy to be pursued as per Product/Service versus the Market.



Figure 4: HR Analytics – Ansoff Matrix



6.Actions Needed

Now, the questions is where does all this analysis lead to and what programs do we build to execute to achieve our stated outcomes? The intention behind this is to create introspection with the customers and the employed feedback system. This might enable the front-line employees and managers to potentially analyze their customers in regard to customer loyalty and NPS.

- Satisfaction is one of the factors that can be monitored and actively controlled by the vendor firm for their customers to a high extent. So devising a concrete plan around "Customer Satisfaction" and measuring it will have impact on NPS scores.
- 'Would recommend' question could create several misinterpretations. It is important to have a clear goal with what kind of customer feedback is necessary for the firm.
- Having the right set of Customer Indicator questions to help understand the attitude and behaviour of the customer. This will help the vendor fir, categorize individual customers more accurately.
- Right sizing of pricing plan not only to generate perceived value but more importantly a robust plan for integration into vendor ecosystem.
- Design programs to increase attitude centrality towards the brand. Usage frequency for high level managers (decision makers) needs to be increased through active involvement.
- Analyse 'what if' scenarios to understand the likely impact of changes in policies or processes on customers' propensity to recommend you in order to best understand what actions you need to take and when.
- Perform preventive maintenance.



7. Conclusion

Investing in the measurement of NPS is a long-term investment. Improvements do not happen overnight. But if you and your team keep surveying customers on a regular basis, do your due diligences in analyzing their feedback, bring it back to your organization, and actively work as a team to improve; your business will reap the benefits of long-term customer retention and loyalty.

I will be sharing examples of HR Analytics as part of series. It will consist of both HR Process Analytics and Integrated Analytics.

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