Analysis of the Business Environment: HAC and RAC Indices

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Abstract: ***The purpose of this paper is to determine if and whether the predicted demand environment is both behaviorally sustainable and strategically capturable by the firm given its position and procedure. Based on values and indices given in the research paper, one index can explain the demand pattern over the years, and the combined framework, can analyze when to make business decisions with less impact to the firm.***

Keywords: HAC Index, RAC Index, Lead ratio of respective fiscal year, Range of Strategies, Range of Obstacles, market analysis, business comparison.

1. Introduction

This paper includes two different indices which talk about the behaviour-based pattern of demand over time (HAC index) and the firm's current realizable position in terms of survival and performance (RAC Index) With these results, we can understand the answers of the questions, when to, where to, why to, which helps the firm assess business decision readiness and evaluate what to.

2. Literature Survey

For every business ever started, opportunity is more than a word. And investment in those opportunities, can give you a return, or can become a loss. So, analysing such opportunities is particularly important, as investment is not only in the form of money, but also resources, time, human, all those resources that you obtain from society. Many businesses when starting, invest their efforts in the business after predicting a false positive opportunity which leads to a heavy loss that firms cannot bear, that is the reason a firm needs to know its position and survival in the market. These indices HAC and RAC help the firms achieve that motive of the business.

Overconfidence in strategy, based on the opinions of marketing solutions or business consultancy firms. Although, you are consulting an expert, who can prepare charts based on your market research, it is always better to have simple methods internally in the organisation, to analyse executive decision readiness.

3. HAC INDEX

3.1 Boundary date analysis

A particular date is chosen, and the boundary period is chosen. Any recognised, celebrated event or festival near to the chosen date is taken based on the characteristics of the market. The market here signifies the people who fall into the target niche, the location of significant target market presence, and the time/ season of the year. All these factors are taken into account, while the date is chosen.
Example: Dec 20, 2025

3.2 Product- Line Analysis

As HAC is the historical analytical index, for every single year from 2015-2025, Dec 20 is the primary observation date. The primary- sales of the entire market selling identical items, including those of competitors is analysed. (the entire market, not a particular firm) is identified in such a way that it is relevant to the actual company in the study.

For example: the study is made by a automobile industry named XX In TamilNadu market. So, the data from 2015-2025 is analysed for the entire automobile market. It is compared to the consumer- ends, not the demand analysis of upper- supply market. HAC explains demand in consumer market level.

3.3 Formula of Lead Ratio and calculation of HAC Index.

$$LR = \frac{Q(AS)}{Q(ES)} X \frac{Number\ of\ days\ purchase'}{Number\ of\ days\ in\ BP.'}$$

Lead ratio is calculated for a particular year, Q(AS) is the quantity of goods in the respective units actually sold in the entire market in the chosen boundary period of any number of days. Q(ES) is quantity of goods in the same unit expected to be sold in the entire market in the chosen boundary period, it is derived from historical benchmarks and research based analysis. Number of days in the BP' in this case, means the number of days in the chosen boundary period, in which the data was studied. For example, from Dec 20- Dec 31 the boundary period was for 12 days. The boundary period is where all other relevant data sets are studied, the number of days purchase is, the count of days within the boundary period, which have purchases which are of highest value and are of repetitive nature.

Example 01: For a particular year, as said, 2014 Quantity of goods sold in actual sales of automobiles in the boundary period of (Dec 20-31) is assumed, which amounts to 10,050 cars in the year 2014, respective to the TamilNadu market. while the quantity of good expected to be sold in the respective unit is 10,200 cars.

Dec	20	21	22	23	24	25	26	27	28	29	30	31
Q(AS)	980	**1050**	720	680	810	450	890	910	**1120**	910	880	650

So, the number of days purchase (Dp) have to be taken as 2, because the purchase is of high value and repeats more than once, and hence LR value will be, 0.246 in this case. If the highest value of sales occurs only once, then it is a spike, and shall not be recorded as Dp, the value of sales should be the highest among all, but should be repetitive in nature to show it is stable and the firm is able to retain the consumer's demand. A 50-70 unit range can be allowed.

For every year, from 2015- 2025, the lead ratio is calculated for every year in the time period. The mean value for 10 years of Lead ratio is called the ***HAC Index, also known as decade, mean value.***

The HAC Index helps us know the ratio of actual sales to expected sales, in a defined boundary period, adjusted to reflect high value demand daily purchases.

4. RAC INDEX

RAC is based on a specific company, it can be the company in the study, it is not based on the entire market. It does not study the history or behaviour-based pattern of demand, or the aggregate demand for the product across the industry. It is concerned to the brand's product, related only to the current year. As said earlier, RAC shows the firm's current realizable position in terms of performance and survival. To enumerate this value, an RAC table is prepared end of every quarter of the calendar year. (31^{st} March 30^{th} June 30^{th} September 31^{st} December)

RAC TABLE AS ON 31/03/25

Date	Strategies	Weight	Date	Obstacles	Weight

The weights are allotted from 1-5, based on their impact on the firm. For example, making an advertisement through poster that brought 60 percent leads on discount coupons is a strategy, it has a positive impact on the firm, and failing customer services because of a misjudged error, costing brand reputation is an obstacle. It has a negative impact on the firm. So, items which have a positive impact on the firm are put in the left side of the column. And items which have a negative impact on the firm are put in the right side of the column.

The total weights of strategies are taken as σW1, the total weights of obstacles are taken as σW2.

The formula of calculating the RAC Index is

$$RAC\ INDEX = \frac{\sigma W1}{\sigma W2}$$

The RAC index serves the purpose of analysing the firm's position to determine the direction of executive decision making, It tells us how strong the firm is, if it can or not handle the decisions made based on their expected impact analysis.

5. Conclusion

After determining the values of HAC and RAC, the determination of the final result is as follows:

Both HAC and RAC are proportional,
If HAC and RAC levels are high, then the firm can make it's own executive decisions, its impact level is strong. If HAC is closer to 1, the market is in a relatively stable position, If HAC significantly exceeds 1, it may indicate unexpectedly high sales or unpredictability in the market, rather than firm stability. And RAC must be greater than 1, for the firm to make its executive decisions with more impact to the firm.

If HAC and RAC levels are medium, then the firm can make its decisions, but under certain conditions where expected impact for upcoming decisions is under control. If RAC=1, and HAC values are less than 1, it tells us, people buy in high volumes but only in short breaks in a given period.

If HAC and RAC values are low, minimal, which is RAC<1 and HAC is less than and far away from 1, the market is weak and unstable.

HAC LIMITS.	RAC LIMITS
HAC ~ 0.9–1.1 → high/stable.	RAC- >1 high/stable
0.7–0.9 → medium/moderate.	=1, medium/moderate
< 0.7 → weak in nature.	<1, low/weak.

HAC tells market stability, overall market demand while RAC talks about firm and its importance, the firm's position as a quarterly report. These indices support in executive level decision making in a business organisation to tackle with obstacles in the business environment

References

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[2] Behavioural Economics Chapter, Demand can recur.
[3] Understanding the firm's position and valuation, importance of strategies and obstacles. (Examples used are not accurate symbols, are more of assumptions, not real data). Data assumptions estimated with the assistance of generative artificial systems (google).

Author Profile

Arun Nagappan T has completed ICSE 10^{th} grade from Lakshmi School, TVS, Madurai, Tamil Nadu, currently studying ISC commerce group. A business enthusiast, aspiring economic theorist, has already authored a research paper on quality-based pricing method, with its own formula.