

How to measure and exploit price elasticity?



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Introduction

Welcome to the second chapter of this 3-part guide, dedicated to price elasticity:

1. Why measure the price sensitivity of your customers?
2. How to measure and exploit price elasticity?
3. Rule-based vs. Target based pricing: which optimizations to choose?

We saw in the previous chapter how important it is to put your consumers back at the heart of your pricing strategy.

In this chapter, we get down to business! The customer must be at the center of your pricing strategy, and for this you need to assess its sensitivity and measure elasticity to optimize your prices... but how to do ?

Let's see the different methods of measuring price elasticity.

Challenges in measuring price sensitivity

One of the main challenges in measuring price sensitivity is to be able to take the context into account. This requires constant monitoring and learning, so that you can act quickly.

Some events occur without warning and can reverse historical trends, and you need to be ready to adjust your pricing at any time.

Automated pricing helps you to be responsive while maintaining control of your strategy, but it must be preceded by a learning phase to be effective.

The following are the essential qualities for successful learning:

- learn fast to act fast,
- to have reliable data, with a minimum error rate, by eliminating noise,
- consider the context and take a holistic view to consider the impact of events (expected or not) on all priority KPIs, not only on volume or turnover,
- be able to understand precisely the impact of the price adjustment on the priority KPIs excluding other factors.

Let's take a look at the methods for measuring price sensitivity, their advantages and limitations.

What are the approaches to measuring price sensitivity?

1. Historical (pre-post) measurement

- Benefits and use cases: This method correlates over time price variation data and business performance variation
- It is the easiest and fastest to implement. It can easily be replicated over time and is used to draw broad trends.
- Limitations: it is not reliable because it does not take into account the context. Additionally, this approach is not relevant if there are small price variations, or if those variations are not very numerous, because the volume of data to be analysed will be small and therefore potentially not very representative.

2. Predictive measurement

- Benefits and uses cases : This method is based on the analysis of historical and contextual data.
- It consists in observing the past context to identify trends. Once the data is collected and processed, predictive models can predict future trends.
- Limitations: it does not automatically identify all the internal and external events that will have an impact on price elasticity, nor their weight. Thus, it does not allow elasticity to be measured in a totally reliable and transparent way, since the weight assigned to past events to define the predictive algorithm is necessarily marked by subjectivity.

3. Measurement by experimentation, or experimentation

- Advantages and uses cases: this method consists of applying a price change on a perimeter X and observing in parallel a control group Y, to evaluate the difference in performance between the two groups, in an identical context.
- Highly accurate and incorporates context - and as we have seen, measuring elasticity is more relevant if context is taken into account.
- This approach is adopted by services such as Uber, Netflix, Airbnb...
- Limitations: since a control group is required, part of the perimeter cannot be optimised. The other groups tested must therefore be over-optimised to compensate... But this is often a small price to pay compared to the benefits obtained on the optimised segments.

	Historic (Pre-Post) based	AI forecasting based	ML Experimentation based
Contexte			
Précision			
Couverture Business			
Time to Market			
White Box			

In red: points not addressed by the method, in orange: partially, and in green: fully addressed

Let's move on to the practical side and see what form the elasticity representation takes as it will serve as a basis for optimising your prices.

Use case :

How to calculate elasticity based on historical data

Let's take the example of a retailer with physical stores, who wishes to measure the price sensitivity of its product catalogue by geographical area.

First of all, the following KPIs must be integrated in the model: sales volume, revenue, cost price, demand (traffic in the shop or on the website), etc... Then you need to define the dimension to be observed.

In this way, the price sensitivity of the different product areas of the catalogue can be measured to define the most effective pricing strategy. Finally, to generate turnover, the volume of the most elastic categories can be boosted directly, without wasting time on categories that do not have elasticity.

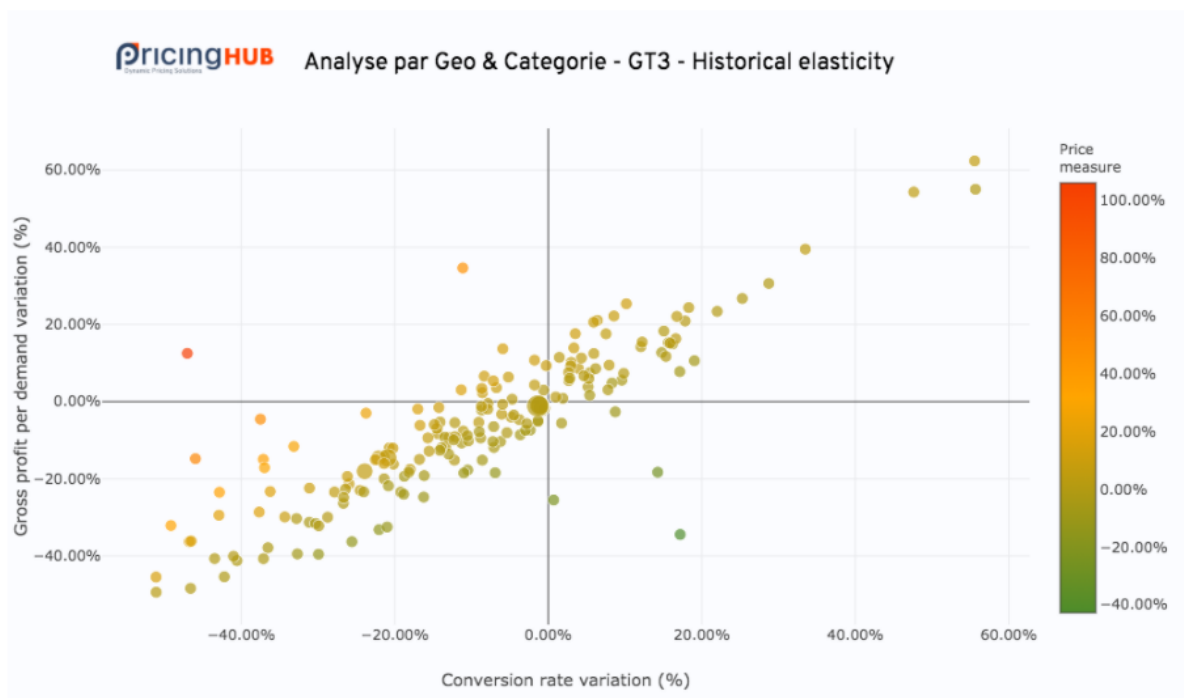
As you can see: the information is immediately usable in an operational way.

Another application could be to use this approach to measure the elasticity differentials in the same product universe between two brands of the same group that are positioned differently.

It is also possible to integrate an external event into the analysis, such as the weather forecast in case of tyre dealership for example ...

NB: measuring historical elasticity can be done with PricingHUB using a simple copy and paste operation, knowing that the more data available, the more relevant the calculation will be.

On the PricingHUB platform, the correlation between the price change (on the reported dimensions) and the KPIs is represented by a scatterplot that can take different forms and indicate the impact of price changes.



The green dots indicate a price decrease. We can see that they led to more conversions, but we can also see that even with increased conversions, the profit did not increase.

The red dots indicate a price increase, and we see that their presence is linked to a strong increase in profit.

The orange dots indicate an average price increase. Located in the centre of the cloud, they are seen to have resulted in fewer conversions but more profit.

With the help of historical analysis, it is possible to see how behaviour changes over time in response to price changes. They vary along the dimensions, and segmentation helps to understand the data further.

Furthermore, historical analysis helps to understand how to apply elasticity, especially if it is more relevant to strive for more incremental turnover, or margin, depending on the segment.

The implementation of this method is very simple.

The main obstacle is usually the data collection, which is the most time-consuming part of the operation.

In the following white paper we will see how to activate and develop a price grid from the data collected.

In the meantime, what is there to remember? Well, that the measurement of elasticity is actually very accessible and easy to use!

It is simply a matter of measuring the relationship between a change in price and a change in performance.

Conclusion

If you thought price elasticity and price sensitivity were an arcane science, we hope this white paper has helped you understand that they are, after all, easily accessible concepts. The key point is that you need to put the customer at the centre of your pricing strategy, and equip yourself to do so.

In summary :

- Historical elasticity allows us to understand the size of an opportunity and the major trends of a consumer group, a geographical area...
- Experimental elasticity is more reliable and allows optimisation.

While benchmark data remains important, it is only one element of the context.

They allow you to set boundaries, but you will see that by putting the consumer back at the centre, you will become increasingly independent of the competition's data.

As you will have seen, price sensitivity measurement and the resulting strategies are easily actionable, and above all automatable with PricingHUB!

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Note that measuring elasticity is not only useful for the price of products, it can also be useful for the price of a service, delivery costs, extended warranty, etc... (Please refer to our Castorama Use Case on the topic)

In the next chapter, we will discuss pricing strategies, and give you the keys to choosing the most appropriate one for your needs and context.

FAQ

What if the demand data is not available?

You can nevertheless measure the elasticity by approximating this missing data, for example thanks to market data, traffic reported by Google Analytics, etc ...

And you can also choose not to take it into account, considering that it is stable over time. The performance variations will then be correlated in an absolute way.

This is obviously less accurate, but it is still a trend indicator.

How can elasticity be analysed if prices are not dynamic, e.g. in B2B, when they are defined in a tender?

If there is no price change, historical analysis is of little interest. In this case, it is better to opt for the experimental method, and to carry out tests by forcing price changes to define a grid that will be stable... taking into account the learned elasticity. In this case running regular elasticity tests is paramount to properly update the price grid.



Is it necessary to offer dynamic prices in order to apply the lessons of price elasticity measurement?

Not necessarily. You have to validate first what you can actually put into practice in space and time. Also, you don't necessarily have to intervene on all the dimensions continuously. You have to see what has a real impact and choose what to activate.



PricingHUB delivers expertise, best practices and technology to help retailers and e-commerce optimize their prices.

We help you protect your margins by setting customer price sensitivity at the center of your price optimization.

We use your data and AI to calculate the best price adjustments to achieve your business goals.

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