MarketDial

White Paper Series

Omnichannel Offerings

Solving the Omnichannel Data Conundrum

Sarah Jacobsen, Data Scientist, MarketDial

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Introduction

Omnichannel retail refers to the strategy and approach of providing customers with a seamless and integrated shopping experience across multiple channels, both online and offline. To be successful in omnichannel retail, companies need to have a strong and cohesive online presence as well as a physical presence that complements their digital channels.

When e-commerce first entered the retail scene, for a season many believed it would outperform and ultimately replace physical commerce, but that reality has not come to fruition. Online and offline retail each meet unique consumer needs, and retailers have come to recognize that product offerings should not, therefore, be limited to either one or the other option but should be streamlined by combining one *and* the other.

Companies that are able to provide a seamless and consistent customer experience across all channels are more likely to build customer loyalty and drive sales. But omnichannel integration is not an easy endeavor. Balancing online retail with physical retail requires a high level of coordination on everything from pricing, promotions, and operations to data, analytics, and decisions. Many have struggled to find a way to merge data between the two retail platforms. MarketDial has found a solution.

We utilize difference-in-differences (DiD) methodology that can account for omnichnanel noise and variability better than any other method. This makes MarketDial uniquely positioned to test both in-store and online initiatives and find conclusive and accurate results.

Going the distance

Customer satisfaction can be greatly enhanced by the multi-channel experience. Statistics bear out that everything from sales to loyalty increases when consumers are given multiple mediums for accessing products. The following are ways the omnichannel connection is most felt by retailers and customers alike.

Sales

Different channels appeal to different demographics. Someone homebound, for example, may prefer online ordering while others want to see and feel products before purchasing. By offering more channels, more customers' needs get met, and higher sales inevitably are the outcome.

Promotions

Strong omnichannel data platforms can help partners identify promotions that appeal to online users only, in-store users only, and both users simultaneously. In addition, they can measure how online promotions are driving in-store traffic.

Inventory

Omnichannel can help create a symbiosis between items shipped directly and items shipped from stores, providing more options for customers to receive or obtain product offerings.

Marketing

Retailers value using online advertising to drive in-store traffic and using in-store advertising to drive online sales. Marketing campaigns don't happen in isolation, and their influence can be effectively utilized across channels.

The uphill battle of omnichannel data

To understand the necessity of balanced omnichannel data, imagine trying to ride up a mountain on a unicycle. Separating data into two separate wheelhouses — e-commerce and brick-and-mortar — can be like riding uphill with only one wheel at a time. Likewise, having unbalanced wheels on a bicycle can make any ride more difficult. Ensuring that data from both e-commerce and physical retail is equally robust will drive results to the top much faster. But balancing e-commerce and physical retail data is difficult for a number of reasons:

E-commerce data is typically more noisy

Because e-commerce data is collected from multiple sources, such as website analytics, customer reviews, and social media, it often needs to be cleaned and analyzed due to sheer volume. Additionally, e-commerce data can be affected by factors such as website design, user interface, and search algorithms, which can all influence customer behavior and purchasing decisions. High return rates also conflate online retail statistics. Customers may purchase multiple items with the intention of returning them, or they may be more likely to return items due to the ease of the online return process.

Physical retail data can be more challenging to collect

While e-commerce can obtain data with the click of a button, physical retail data often needs to be collected through methods such as in-store testing, surveys, observations, and point-of-sale systems. As a result, many retailers invest in and rely disproportionately on online a/b testing but neglect a/b testing for physical stores, creating inequitable data content.

The customer landscape is constantly changing

Having just lived through a significant period in history with a global pandemic disrupting everything from buying patterns to production and supply chains, we've witnessed firsthand the fluctuations external factors have on consumer trends. During lockdowns online buying options such as home delivery, ship from store (SFS), and buy online pickup in store (BOPIS), all became highly sought after. In contrast, post pandemic behavior, heavily influenced by inflation, has motivated a shift to more people eating from home and shopping in person (to save money on things such as delivery fees and tips). This omnichannel yo-yo keeps retailers often hanging by a string when it comes to assimilating data. Just when retailers believe they have a system in place to track online consumer behavior, preferences and buying/tracking methods shift back to physical stores again.

To ensure your retail data and insights from both online and physical sources remain equally robust, it's important to ensure you have a methodology in place that can streamline the two in an inter-dependent manner.

The difference that difference-in-differences makes

Difference-in-differences (DiD) and year-over-year (YoY) analyses are both commonly used methods in business analytics to compare changes in outcomes over time. However, DiD is often considered a more robust and preferred method for analyzing the impact of omnichannel strategies than YoY.

Understanding the two methods

DiD and YoY both:

- Are backed by sound statistical theory
- Account for noise in the data
- Rely on accurate control matching
- Will not account for a poorly designed or executed test
- Will vary greatly with very few weeks or very few sites.

The key difference between DiD and YoY analyses lies in the way they account for the influence of external factors for confounding variables that could affect the outcomes being measured. YoY analysis compares outcomes from one year to the next, but this approach assumes that any changes in outcomes are solely due to the passage of time and not to other factors that may have changed during that time.

In contrast, DiD analysis compares changes in outcomes over time between a treatment group (e.g., customers who use a new omnichannel strategy) and a control group (e.g., customers who do not use the new strategy), while also accounting for any external factors that may have affected the outcomes. By controlling for these confounding variables, DiD analysis can provide a more accurate measure of the impact of the omnichannel strategy on the outcomes of interest.

Moreover, DiD analysis provides a counterfactual scenario by estimating what would have happened to the treatment group if the new strategy had not been implemented, based on the outcomes of the control group. This can provide a more robust estimate of the true causal effect of the new strategy on the outcomes of interest, compared to YoY analysis which cannot account for the counterfactual scenario.

Null simulations

Given the aforementioned advantages of DiD, MarketDial hypothesized DiD would be more effective at handling omnichannel revenue and conducted an analysis to determine if this was indeed the case.

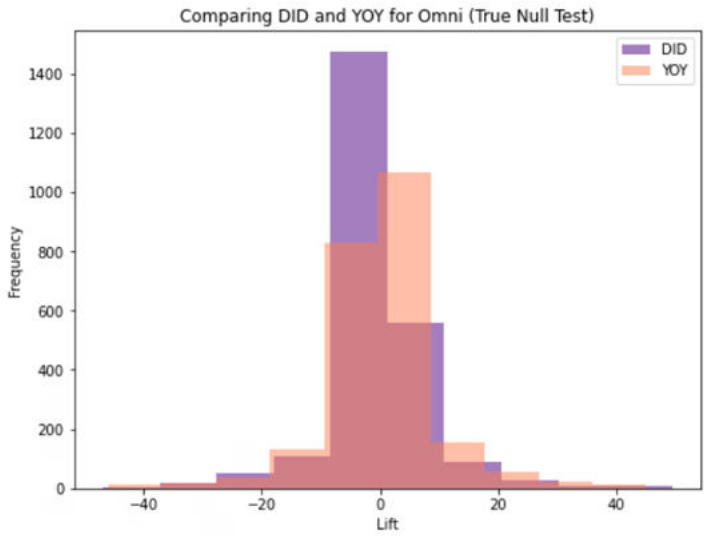
Null simulations are important because they have a known correct value. When a test is conducted for a retailer, there is often no known "correct" value, so retailers don't know how much their calculations are off. Null simulations take a random point in time and a random set of stores and calculate the lift, which should ideally be 0 since there was likely no test in that exact set of stores at that time.

MarketDial conducted simulations with a random set of 50 sites, 1:1 control matching, and a test length of six weeks. We then calculated lift in omni revenue with that time frame and set of sites using both methodologies. Null simulations reflect how resilient different methodologies are to noise.

We ran over 2300 simulations of both DiD and YoY from a variety of retailers (variety in site count/fleet size, inventory, sales volume, etc.).

A mean closer to 0% indicates that DiD is getting more accurate results. Also, the standard deviation is smaller for DiD, meaning that lift results are more consistent than YoY.

Furthermore, when omni revenue was broken down into e-commerce and retail revenue, e-commerce data was often more noisy, and the DiD methodology was able to again produce more accurate and consistent results, with a much lower standard deviation when null tests were run.



	Mean	Standard Deviation
DiD	-0.056%	8.06%
YoY	0.174%	9.27%

Leading the charge

More and more, omnichannel retail is being recognized as the most effective way to get the largest selection of inventory and products to the greatest number of diverse customers. But accessing and analyzing data across channels is no small feat. MarketDial is uniquely positioned to integrate both e-commerce and brick-and-mortar data to provide insights into the constantly changing retail landscape.

Given that omnichannel retail drives both profitability and operational acuity, acquiring insightful data to support the customer journey along every channel is essential. The best way to guarantee cohesion between e-commerce and brick-and-mortar commerce is to have a singular reliable and accurate tool to measure both channels simultaneously. Having one tool to achieve this can make it easy to:

- Compare which channel is doing better or worse than the other
- Combine data for an overarching look into the business as a whole.
- See how initiatives, such as marketing or pricing, are affecting each channel — i.e. is one channel more heavily impacted or are both channels equally impacted?

In using the difference-in-differences methodology described earlier, creating and ensuring ongoing data hygiene, and integrating robust in-store testing, MarketDial is uniquely equipped to process and analyze omnichannel data on any level. With the MarketDial solution you can:

- Analyze data from either e-commerce or retail, or both together.
- Measure unique omnichannel metrics like Buy Online Pickup In Store (BOPIS) execution, BOPIS cancel, Ship From Store (SFS) execution, order cancellations, etc.
- See comprehensively where your business is lacking or excelling and where to dedicate focus and investment.

Why MarketDial?

More than 100 leading companies and global brands rely on MarketDial for deep data delivery. Amplify your understanding of consumer behavior with deeper data hygiene, deeper omnichannel insights, deeper in-store testing tools, and deeper data support with MarketDial.

Sarah Jacobsen
Data Scientist

Sarah grew up in Seattle, Washington and graduated with a bachelor's in math education from Brigham Young University and a master's in educational leadership from the University of Utah. After teaching college-level statistics, she knew she had found her passion and is now working on a second master's degree in data science from Eastern University. When she's not studying or playing with numbers, Sarah enjoys spending time with her daughter and creating art through the medium of embroidery. She also loves to read sci fi with a particular affinity for Marvel and Star Wars.

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