MARKETING ANALYTICS USING EXCEL

A Beginner's Guide

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DEDICATED TO

To all the sacrifices of my beautiful wify Neeraj and kids Himanshi and Tanishk. I can not forget the endeavour of my parents – Mummy and Papa and grandparents Bai and Babba to help me get to this stage.

RPS

Dedicated with love to my Mummy, Daddy, Sushil, Jibu, Raina, Naomi, Vihaan (Chachu), my angel son, on his 11th birthday – a beacon of our collective joy and hope.

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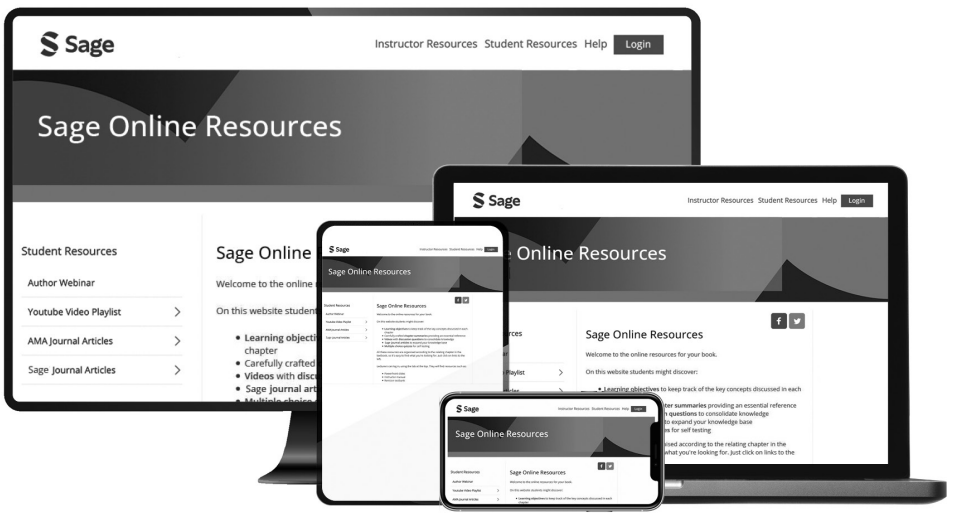
ONLINE RESOURCES



This textbook is accompanied by online resources to aid teaching and support learning. To access these resources, visit: study.sagepub.com/kaurav. Please note that lecturers will require a Sage account in order to access the lecturer resources. An account can be created via the above link.

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- **PowerPoints** that can be downloaded and adapted to suit individual teaching needs
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FOR STUDENTS

- **Datasets** that can be downloaded and used alongside exercises in the textbook

ABOUT THE AUTHORS

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PREFACE

Marketing has undergone a number of trends over its storied history. In the early days of the profession, advertising copywriters moved away from describing products and promoting their features to writing aspirational copy – text that would help consumers envision not the product but the person they would be if they owned it. Then, marketing turned to psychology. Marketing teams studied everything from Freudian psychoanalysis to research papers on human cognition to understand what makes people tick – and more importantly, how to shape their desires.

In the 80s and 90s, marketers worked around the clock to make brands and products seem cool. In the 2000s, they shifted their emphasis to making products seem useful – freeing up time and easing stress.

Since the 2010s, marketers have leveraged every digital tool they could get their hands on to personalize their campaigns. They're no longer creating ads based on an understanding of the human mind; they're creating highly targeted marketing materials based on an understanding of the customer as an individual. This happens in small ways, like marketing emails addressing the subscriber by their first name, and in large ones, like designing entire campaigns to appeal directly to a small subset of customers.

If there is a trend taking hold of marketing today, it's data **analytics**. Every leading marketer these days is either a savvy statistician or someone who knows the value of data and works with a team that is able to extract it, process it, and act on it.

We hesitate to simply call it a trend, however. **Marketing analytics** is more of a transformation. There is no way to see into the future, but we are confident that we will one day look back to this decade as a turning point – not an era during which we replaced one trend (personalization, say) with another (deep **data analysis**), but as the decade when marketers embraced data analytics and never looked back.

Marketing analytics is not simply a new approach to marketing. It's a way to make marketing campaigns far more effective than they ever were. It's a method that practically guarantees results and is able to track its effectiveness. It's a means of understanding customers at a deep and fine-grained level, enabling organizations to market to each target audience in a way that speaks directly to them.

It's an approach to marketing that thought leaders and marketing experts of the past have always dreamed of achieving but could never execute, not because they lacked the vision or ambition to do so, but because they didn't have the right tools. The technology needed to realize this ideal approach to marketing simply did not exist yet.

It does now. We are living at a time when **big data** has pushed the boundaries of what we can know about customers and the market. There are algorithms that can interact with customers at a much closer level than any human team ever could. And now we're at the cusp of an **artificial intelligence** revolution. We have already seen how impressive AI technology like ChatGPT can be, with an uncanny ability to understand and produce human-like speech. Professionals at every level of business are now deploying AI tools to make their work more efficient and achieve results that were unheard of until now. We are already coming face to face with technology that we all believed could only exist in science fiction, and we have yet to see its full potential.

These technological developments are empowering marketers to achieve what was once thought impossible. They have ushered in a new era of marketing and opened up a world of possibilities for marketers and the businesses they support.

This is what marketing analytics is all about it. It's about harnessing the latest technology and the most advanced analytical methods to create and refine marketing campaigns that achieve what was thought to be impossible. It is our firm belief that everyone who is entering the marketing profession will have to interact with marketing analytics on a regular basis. Success in this field will require a knowledge of and appreciation of the tools and techniques of marketing analysts. And the marketers who make data analytics their bread and butter will be poised to lead the industry and bring it into new and exciting directions.

WHY WE WROTE THIS BOOK (AND WHO IT'S FOR)

Data has become a cornerstone of marketing and strategic decision-making. As practitioners of marketing analytics, we have seen firsthand the transformative power of data-driving insights in shaping and guiding marketing campaigns and business strategies. As educators, we want to impart these tools and techniques to the new generation of marketing professionals. That way, they can become more successful in their careers and set off on a trajectory that might push the boundaries of marketing even further.

However, when looking for a suitable resource for *students* and *junior professionals*, we came up empty-handed. There are very few materials available that cater to beginners or marketers who want to explore marketing analytics without being bombarded by complex formulas or overwhelmed by statistical jargon.

This book is born out of the need for an accessible, user-friendly guide that provides simple explanations of advanced topics and helps readers take their first steps towards using and applying marketing analytics.

In writing these chapters, we were guided by our memories of being students. Advanced mathematical equations seemed impenetrable, and the books we were poring over did a poor job of explaining their purpose or walking us through their application. We felt that there must be a better way to learn analytics – one that is engaging, practical, and accessible to everyone, regardless of their mathematical skill level.

The primary aim of this book is to demystify marketing analytics and provide a fun and engaging learning experience. In these pages, you will find minimal use of complex statistics and an emphasis on practical applications and real-work examples of data analytics in action. This book is designed to be an *easy guide for beginners* and a *self-guided resource* for those who cannot attend full-time courses but still wish to master marketing analytics.

What to Expect?

Industry Stories and Best Practices: Each chapter opens with a case study from leading companies like Zappos, Amazon, Netflix, and Spotify, providing practical insights into how marketing analytics is applied in various industries. These stories are not only engaging but also demonstrate the real-world impact of effective data analysis. The aim is not simply to tell you how to navigate analytical tools and perform statistical calculations, but to show you how these methods work in practice.

Comprehensive Coverage with Minimal Complexity: The book covers essential topics in marketing analytics, from basic Excel functions to advanced analytical tools. Despite the breadth of topics, the content is presented in a straightforward manner, avoiding unnecessary complexity. It is meant to give readers a head start and prepare them to apply analytical methods and use the tools of the trade. It should, however, be seen as a jumping-off point. Readers are encouraged to continue learning and pursue the subjects they find most interesting in greater depth. If you finish this book feeling curious about trend forecasting, keep studying that subject. If these chapters gives you a strong desire to create a **machine learning algorithm**, download some software and start tinkering with it. No matter what you do, don't stop here – continuous learning is essential for any marketing professional.

Career and Tools Focus: This book is meant to be practical. As such, it contains a chapter on free and open access tools that the reader can use and explore without any financial investment. Similarly, Chapter 15 on career prospects is intended to give readers an idea of what types of jobs are available for marketing analytics professionals and provide actionable steps for securing one. While the coming chapters will cover theoretical concepts, the aim is to prepare you to take action and implement the methods you will be reading about.

Engaging Learning Activities: Each chapter concludes with exercises, discussion questions, and other activities. We all learn better by doing, so take the time to work through these problems so you can gain a deeper understanding of the subject matter and how to apply it to real-world situations.

Instructor Support: For educators, the book comes with rich slides and solved Excel sheets. This book is suitable for self-guided learning but also serves as a valuable teaching resource.

A Fun Way of Learning Analytics

Although marketing analytics is a serious endeavour, we have tried to avoid writing a dry, stuffy book. It's our belief that even data analytics and statistical formulations can be fun. This book is our attempt to live up to that belief and create a readable, no-nonsense approach to learning marketing analytics.

Whether you are a student, a professional looking to upskill, or an instructor, this book aims to make the learning process enjoyable and deeply enriching. By minimizing the intimidation factor of complex formulas and focusing on practical, real-world applications, we hope to foster a love for analytics and empower readers to make data-driven decisions with confidence.

Marketing is increasingly dependent on analytics, so it's important for everyone to have an accessible way to explore this topic. So, we invite you to embark on this journey with us. Over the course of the next 15 chapters, we will explore the fascinating world of marketing analytics through practical examples, engaging stories, and hands-on exercises. By the end, analytics won't just be a subject for you to study but an integral part of your professional toolkit.

ACKNOWLEDGEMENTS

The journey of writing this book has been an incredible experience, and I am deeply grateful to all those who have supported me along the way.

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Finally, I apologize if I have inadvertently forgotten to mention anyone. Your help and support have not gone unnoticed, and I truly appreciate each and every one of you.

RPS

I want to start by expressing my gratitude to the Almighty for His infinite mercy and blessings. Thank You, Jesus!

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Vihaan (Chachu), my ten-year-old son, thank you for bearing my long, never-ending hours with my laptop and playing alone while I fulfilled my research agenda. I have a deep appreciation for your understanding that my time and energy are focused elsewhere. I am so lucky and blessed to have a child like you who took care of me from when you were three years old. You made sure not to disturb me or complain about anything. Instead, you always motivated me with your magical words, 'Yes, mummy, you can do it.' This work is equally your achievement because you are the one who sacrificed the most. Thank you, my lucky charm! I love you Vihaan 3,000 infinity! Finally, I can't thank my spouse, Sushil, enough for being my support system. In times of weakness, you became my strength, made me see my aim when it became blurry, and boosted my spirits when I was low. No words of affection or thanks can explain my gratitude for you. This work is as much your achievement as it is mine.

AT

3

DATA IN MARKETING

'Data in marketing is the new oil, invaluable yet volatile; without it, we are merely wanderers in the digital age.'

Learning Outcomes

By the end of this chapter you should be able to:

- Understand the various types of data you might need to collect and manage in your marketing projects, including text, audio, and video
- Get a handle on the methodologies and tools used for collecting various types of data-driven marketing
- Apply best practices for managing and storing data to ensure its accessibility and usefulness
- Apply best practices for managing and storing marketing data to ensure it is easily accessible and usable
- Ensure that the data is collected and used ethically
- Summarize complex marketing data into readily understandable insights
- Know how to use data to drive marketing strategies and inform decision-making

Case Study 3.1

The Rise and Fall of a Social Media Campaign

The marketing team for Jane's Organic Juices decided to leverage social media to promote its new line of berry-based juices. Before drafting posts and creating visuals for the campaign, they launched into some preliminary research.

(Continued)

Rather than focusing on a single type of data, the team assessed the market landscape on various fronts. Competitors' Instagram grids were splashed with brightly coloured, minimalist photos. Key podcast episodes were centred on nutrition and healthy living. Twitter activity hinted that consumers had a stronger preference for eco-friendly packaging. The most popular YouTube videos gave viewers a behind-the-scenes look at the manufacturing process.

Armed with this wealth of data, the Jane's team launched an integrated campaign that drew on these various elements. They produced bright, minimalist visuals that showcased the product in sustainable packaging. They created videos that gave a peek at the company's organic sourcing process and the steps involved in turning the raw ingredients into refreshing beverages.

After uploading these to various platforms, the campaign immediately garnered engagement. The strategy worked — but only for a short amount of time. Soon after the campaign took off, a customer tweeted about the not-so-eco-friendly cap used for bottling Jane's juices. The tweet went viral, practically outpacing the campaign itself.

So, what went wrong? Despite their meticulous research and careful planning, the team overlooked a crucial piece of information. Their **data management** process failed to capture customer feedback data. If they had, they would have been aware of this criticism and wouldn't have been caught off guard by the controversy.

The team went into high gear to address the issue. They engaged with the community, took responsibility for the bottle cap issue, and promised to rectify it by the next production cycle. Crisis averted. By taking an honest approach, they could regain the consumer trust they had lost. But it also serves as a lesson in the importance of comprehensive data collection. With a more thorough approach to data management, the team wouldn't have lost the customers' trust to begin with, even momentarily.

Lessons from the Jane's Organic Juices marketing campaign

- **Data Collection** *Should Be Comprehensive*: Data should be collected and consulted when vetting every aspect of the product, from packaging to messaging.
- *Be Ready to Respond Swiftly*: Information moves at lightning speed online. Criticisms can tank a successful brand or campaign, practically overnight. A quick and transparent response can rescue it before it's too late.
- *Ethics Matter in Marketing*: Marketing claims must be consistent with the product they're promoting. Honesty builds trust with consumers, but misleading or false claims can erode customer loyalty.

INTRODUCTION TO DATA IN MARKETING

Marketers have access to more data than ever before. Every click, like, share, and comment generates data, and this information can be harnessed to better understand your

customers. Rather than relying on intuition and guesswork, you can use this information to predict what they will need and give them exactly what they want. Taking a rigorous approach to data analysis can transform the way you connect with your customers, shape your marketing strategies, and boost business growth.

Table 3.1 Comparing old and new patterns in types of marketing data

Type of Data	Old Patterns	New Patterns
Visuals	Posters	Images
	Billboards	Infographics
Text	Newspaper ads	Social media ads Customer reviews
	Brochures	Tweets
Audio	Radio commercials	Voice search
	Over-the-phone surveys	Call recordings (with analytics)
Video	Television commercials	Video views on platforms like YouTube Shorts/reels
	Product showcase on TV shopping channels	Watch-time analytics on streaming platforms

As you can see in Table 3.1, data in marketing isn't just about numbers and spreadsheets; it's a vast mosaic of customer behaviours, preferences, and interactions. This data provides fine-grained insights into what customers want and need, allowing marketers to craft strategies that not only appeal to them but also foster brand loyalty.

Before we dive deeper into this topic, let's start by defining the type of data we'll be talking about. Given the vast amount of information that marketing teams employ and analyse, we first have to recognize that we are long past the days of data that could be managed on a human scale. Marketers can no longer print it all out on spreadsheets to pore over at their desks – the information needs to be sorted, processed, and interpreted before it can be used in any meaningful way. We also have to account for the various types of data that are now relevant to marketers. While sales figures and homepage visits are still crucial pieces of information, they're no longer sufficient for driving effective marketing campaigns. Visual data, audio information, and more fine-grained engagement metrics all have to be taken into consideration as well. To account for all this, we will define '**marketing data**' as follows:

> Marketing data is any information, gathered from both public and private sources, that can be processed by a computer and which marketing teams find useful for identifying target customers, create attractive content, and build more successful campaigns.

With that definition in mind, let's unpack that and take a closer look at marketing data and how you can use it to get better results.

FOUR MAIN TYPES OF MARKETING DATA: VISUALS, TEXT, AUDIO, VIDEO

With the vast arsenal of creative and analytical tools available to every marketer, you will be able to craft narratives and drive engagement using images, text, audio, and video. Modern marketing projects typically leverage all four of these media categories and assess all of them as part of their market research.

So, let's go over each of them so we can better understand their relevance to marketing and the kind of impact they can have on your campaigns.

Visuals

The main strength of visual media is its ability to communicate messages instantaneously – literally in the blink of an eye. Companies that know how to leverage visuals effectively are able to use them to cement their brands and connect with their customers on an emotional level.

From the perspective of marketing **analytics**, visual data serves as an important touchpoint for the customer – and, as such, a crucial source of information for the marketing team. People readily engage with visuals they find appealing or intriguing. Tracking the clicks on a campaign image can help you gauge the effectiveness of visual content. More sophisticated approaches like heat maps and eye-tracking software can give you even deeper insights into what really grabs a customer's attention, including things they might not themselves be aware of. Marketers and brands can then use this information to refine and maximize the impact of their visuals, i.e. see Table 3.2.

Table 3.2 Delving into visual data

Visual Type	Description	Importance	Example
Images	Photographs, illustrations	Immediate impact and brand recognition	Brand logos or captivating product photos in e-commerce sites
Infographics	Data represented visually	Simplify complex data, enhance engagement	Infographics breaking down market share in a particular industry

Text

Digging into the vast amount of text that customers generate online can provide rich insights into their feelings and preferences. Analytic approaches like sentiment analysis

and natural language processing allow brands to uncover insights from this text data that isn't always evident on its surface.

Airbnb uses text analysis to understand guest feedback at scale. In doing so, it can identify key themes and highlight areas for improvement. This process transforms vast amounts of reviews and descriptions into actionable insights, which the company can then use to create tailored offerings and enhance the guest experience overall, i.e. see Table 3.3.

Table 3.3 The nuances of textual data

Text Type	Description	Importance	Example
Customer Reviews	Feedback and ratings from users	Direct gauge of product performance	Reviews section on an Amazon product page
Tweets	Messages on platforms like X by Twitter	Instant feedback, brand engagement	Companies addressing customer concerns via tweets

Audio

Audio has gained prominence thanks to the ubiquity of smart devices that can capture it. Smart speakers, home assistants, and other voice-activated devices have become a goldmine for understanding user behaviour.

Analysing voice search queries and podcast interactions has enabled Spotify to notice trends in customer interests and identify potential gaps in its content offerings. Companies can also use voice sentiment analysis to assess customer emotions during support calls and other phone-based interactions with their representatives, i.e. see Table 3.4.

Table 3.4 The resonance of audio data

Audio Type	Description	Importance	Example
Voice Search	Queries made through voice	Predict emerging trends, enhance accessibility	Hey Siri, find me the best marketing books
Call Recordings	Recordings from customer interactions	Training, understanding user issues	Customer support calls for product inquiries

Insights 3.1: Amazon's Alexa

The proliferation of Amazon's Alexa home assistant has played a groundbreaking role in uncovering consumer preferences through audio data. Alexa owners used it to activate smart home devices, set reminders, and retrieve information – all by using simple

(Continued)

voice prompts. Aggregate data about those voice prompts can be a valuable asset for marketers.

For instance, a beverage company might analyse queries to Alexa about healthy drinks and notice a significant interest in green tea options. Armed with this insight, they can develop a new line of green tea products and launch a targeted audio ad campaign to promote it.

Video

Video consumption increased when it was untethered from television sets. Home computers provided consumers with an additional screen in the home, increasing the likelihood that they would spend their leisure time watching video content. Laptops then made video consumption more portable, no longer restricting it to the living room or the computer desk. Now with smart devices, there are practically no constraints on where and when people can watch videos. It's also increasingly common for people to consume multiple videos at once (e.g. streaming a movie on their laptop while swiping through TikTok on their phone).

Given how much time the average consumer spends engaging with video, it's a source of data that marketers cannot afford to ignore. Video analytics has also become far more fine-grained than it was in the days when marketers could only rely on viewership numbers from Nielsen Ratings. In addition to view counts and watch time, marketing analytics can track viewer engagement patterns, identify drop-off points, and which types of videos a viewer also watches. Brands can use this information to determine what type of stories resonate most with their audience, allowing them to optimize the messaging, narrative, and tone of their future content. Advanced analytics can also identify the demographic and psychographic segments that engage with specific video content, giving companies a better understanding of their target audience, i.e. see Table 3.5.

Table 3.5 The landscape of video data

Video Type	Description	Importance	Example
Video Views	Number of view counts	Gauge content popularity	Viral ads on platforms like YouTube
Watch Time	Duration watched by viewers	Determine content engagement levels	How long viewers stay on an instructional video vs an ad

DATA COLLECTION AND MANAGEMENT

Collecting and managing data is a cornerstone of any informed marketing strategy. It's a process that begins with identifying your data needs, then selecting the most appropriate

methods for gathering that data (e.g. surveys, social media analytics, site metrics), and finally organizing the data so it can be analysed.

The importance of these first steps cannot be overstated, as it will have a direct impact on the quality of your data and how well it can influence every aspect of your strategy. Collecting irrelevant or inaccurate data can lead to misguided decisions, wasted resources, and missed opportunities. Without precise and pertinent data, Starbucks could not determine the optimal locations for new stores, and the algorithms that power popular online retailers like Flipkart, Amazon, Myntra, and eBay wouldn't be able to serve appropriate recommendations to their users.

Data Collection Techniques

There are diverse methods available for gathering marketing data. Surveys allow you to collect direct consumer feedback on products and services, offering invaluable insights into customer satisfaction and preferences. Monitoring social media channels through platforms like Hootsuite and BuzzSumo enables you to track brand mentions, consumer sentiment, and public perception in real-time. Website analytics tools like Google Analytics give you a detailed picture of user behaviour on a given website, tracking metrics like page views, **bounce rate,** and which search terms drove traffic to the site. Customer relationship management (CRM) software like Salesforce aggregates data on customer interactions across multiple channels.

Making good use of these various data collection methods can dramatically enhance the precision and impact of your marketing strategies. We can see that at play in how Spotify looks beyond the data generated on its own platform, analysing social media trends to identify emerging artists and then using internal metrics to promote those artists to the listeners who are most likely to become fans.

To give you a better sense of the various ways you can gather data for your marketing campaigns, Figure 3.1 identifies four collection methods that are commonly used in data analytics.

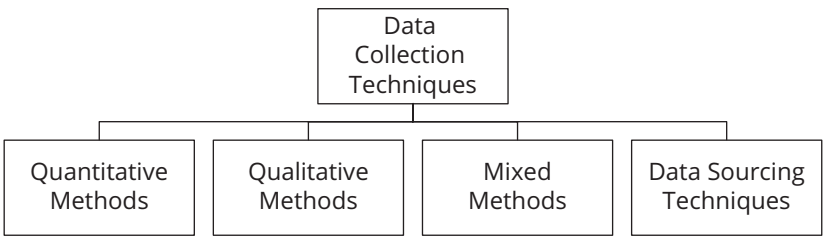


Figure 3.1 Different data collection techniques in practice

Quantitative methods

- *Surveys*: Efficient for gathering numerical data from a broad audience to quantify opinions, behaviours, or characteristics

- *Polls*: Quick, often single-question surveys to gauge public opinion or preference on a specific issue
- *Online Tracking*: Uses cookies and web analytics to collect data on user behaviour across websites
- *Transactional Tracking*: Monitors and records transactions to analyse purchasing patterns and customer behaviour
- *Experiments*: Controlled tests where variables are manipulated to observe effects on a dependent variable, providing causal insights
- *Mechanical Observations*: Use of technological tools or instruments to record data automatically, minimizing human bias

Qualitative methods

- *Interviews*: In-depth, personal conversations to explore complex views, experiences, or motivations
- *Focus Groups*: Group discussions guided by a moderator to gain insight into collective views and perceptions
- *Observation*: Direct or participant observation to understand behaviours and interactions in natural settings
- *Forms*: Structured documents filled out by respondents to collect detailed, subjective data

Mixed methods

- *Panel Surveys*: Longitudinal studies in which data is collected from the same subjects over time to observe changes or outcomes
- *Lead Quizzes*: Interactive, engaging forms that collect data while classifying leads based on their responses

Data sourcing techniques

- *Competitor Market Research*: Analyses competitors to inform strategic decisions regarding products, marketing, and positioning
- *Business Reports*: Internal documents that compile business performance data and market analysis
- *Social Media Monitoring*: Tracks mentions, trends, and consumer sentiment across social platforms
- *Questionnaires*: Structured sets of questions designed to gather specific information, adaptable to both qualitative and quantitative research
- *Published Sources*: Use of existing research and publications for secondary data collection
- *Online Databases*: Accessing large pools of data from digital repositories for analysis

- *Government and Institutional Records*: Public records and datasets that offer valuable insights into demographic, economic, and societal trends
- *Publicly Available Data*: Leveraging information shared on public platforms for research or analysis
- *Financial Reports/Budgets*: Analyses of financial documents to assess an organization's economic status or market trends

Indeed, the distinction between data collection techniques often hinges on the research objectives and the nature of the questions posed. As highlighted, the methodology employed can shift from quantitative to qualitative based on the depth and type of information sought. For instance, Nescafé's approach to understanding customer satisfaction through quantitative questionnaires categorizes the technique as a survey, aimed at gathering broad, measurable insights. Conversely, when probing into the specifics of dissatisfaction with open-ended questions, the technique transforms into interviews, seeking nuanced, qualitative feedback.

This adaptability underscores the importance of selecting the right tool for the research questions at hand. The detailed Table 3.6 serves as a comparative guide, illuminating the versatile applications of these techniques in real-world scenarios, enabling analysts to tailor their approach to meet the precise needs of their inquiry, whether it be understanding consumer preferences, evaluating market trends, or identifying areas for product improvement.

Data Management Strategies

Managing data effectively requires a careful approach to organizing, storing, and protecting the information you gather. This includes using databases and cloud storage solutions to store data securely, as well as regularly cleaning and validating data to remove inaccuracies and delete duplicates.

A company might use cloud-based CRM software to manage customer data, enabling easy access for marketing teams to analyse customer behaviour and preferences. This data can be segmented and analysed to tailor marketing strategies more effectively.

Effective data management in marketing

- *Organization and Storage Collecting*: Vast amounts of data are only useful if you're able to store them properly. Cloud storage solutions like Amazon Web Services (AWS) and Google Cloud Platform (GCP) are typically used as they provide secure environments for housing data. Netflix, for example, stores its massive datasets through AWS, which then gets analysed to deliver personalized recommendations to millions of subscribers.
- *Data Protection*: In addition to storing data, you will also need to ensure that it is secure. Protecting sensitive customer data is not only a legal requirement but an

Table 3.6 Comparison of all the data collection techniques

Technique	Example	Advantages	Limitations	When It Can Be Used
Surveys	Online customer satisfaction survey	Broad reach, cost-effective	Response bias, limited depth	Market research, customer feedback
Interviews	One-on-one user experience interview	In-depth insights, personal perspectives	Time-consuming, not scalable	User experience, product development
Focus Groups	New product feedback session	Rich qualitative data, group dynamics	Groupthink, moderator bias	Product testing, market research
Observation	Shopping behaviour study in retail stores	Real-world interactions, unbiased	Observer influence, limited scope	Behavioural studies, user experience
Competitor Market Research	Analysis of competitor pricing strategy	Strategic insights, competitive advantage	Public data only, may be outdated	Strategic planning, competitive analysis
Panel Survey	Consumer panel on brand loyalty over time	Longitudinal data, trend analysis	Participant dropout, time-intensive	Brand loyalty studies, consumer trends
Forms	Event feedback form	Easy to distribute and collect, scalable	Low response rates, superficial data	Event evaluation, course feedback
Transactional Tracking	E-commerce purchase history analysis	Detailed consumer behaviour, large volumes of data	Privacy concerns, data complexity	E-commerce optimization, loyalty programmes
Lead Quizzes	Marketing strategy feedback quiz	Engagement, targeted insights	Bias in participation, analysis complexity	Content marketing, product feedback
Online Tracking	Website user behaviour analysis with cookies	Comprehensive user data, automated collection	Privacy issues, data overload	Personalization strategies, usability testing

Technique	Example	Advantages	Limitations	When It Can Be Used
Business Report	Annual company performance report	Consolidated business insights, strategic planning	Internal focus, may overlook external factors	Strategic decision-making, performance assessment
Social Media Monitoring	Brand mention tracking on X	Real-time sentiment analysis, trend spotting	Platform bias, data volume management	Brand monitoring, crisis management
Questionnaire	Customer preference questionnaire	Structured data collection, flexibility	Design limitations, response bias	Market segmentation, customer satisfaction
Experiments	A/B testing for website layouts	Controlled variables, cause–effect understanding	Ethical considerations, limited external validity	Product design, marketing strategy
Published Sources	Industry reports for market trends	Secondary research efficiency, broad overview	Outdated or biased data, access limitations	Preliminary research, industry analysis
Online Databases	Accessing census data from government databases	Vast resources, diverse topics	Access restrictions, data quality varies	Demographic studies, economic research
Government and Institutional Records	Reviewing public health records for demographic trends	Public data reliability, large-scale insights	Generalization issues, data relevance	Healthcare studies, policy planning
Publicly Available Data	Analysing tweets for public opinion on a topic	Wide accessibility, community insights	Data quality and privacy concerns	Social research, trend analysis
Mechanical Observations	Traffic flow measurement with sensors	Objective data, minimal human error	Technology dependence, setup costs	Traffic management, product testing
Polls	Public opinion poll on political issues	Quick feedback, simple execution	Limited depth, potential bias	Election forecasts, quick opinion snapshots
Financial Reports/Budget	Review of quarterly financial disclosures	Financial health, market positioning	Access to financials, interpretation complexity	Investment analysis, corporate strategy

important aspect of building trust. Encryption, access controls, and regular security audits are essential for achieving this. Apple is a leader in data protection, making user privacy and data protection a priority, and employs end-to-end encryption to safeguard user data across its devices and services.

- *Cleaning and Validation*: Despite your best efforts, the data you collect will never be without its blemishes. Given the sheer amount of data you will be dealing with and the automated processes needed to gather it, some errors are bound to creep into your datasets. Regular cleaning and validation procedures will remove inaccuracies and duplicate entries, ensuring the integrity of your analyses. If your work ever involves using Salesforce, you will see this in action – the platform has built-in tools for scrubbing data and erasing duplicate information.
- *Analysis and Segmentation*: Analysing and segmenting your data will allow you to tailor your marketing strategies more effectively. In other words, you'll be able to get the right message to the right people. Spotify does this by using data analytics to segment its users according to musical preferences, listening habits, and demographic factors. That segmentation then allows the platform to generate personalized playlists and provide each user with recommendations that are relevant to their musical tastes.

Integrating MS Excel in data management

Excel is an indispensable tool for these preliminary steps. Since its inception, it has been all about collecting and managing information and has only become more effective in the decades since.

Some critical features for managing data in Excel include:

- *Pivot Tables*: Creating a PivotTable can give you quick summaries and analyses of large datasets. They can be easily tweaked and modified to provide different angles on the same data, uncovering a variety of insights with ease. For instance, a retail company could input its sales data into a PivotTable and use it to identify best-selling items, regional purchase patterns, and seasonal trends.
- *Conditional Formatting*: Setting conditional formatting parameters will automatically highlight relevant and pertinent datapoints, making them readily apparent. A digital marketing agency could, for example, use this feature to highlight any campaign that has hit a certain threshold for ROI, facilitating a quick visual assessment of which campaigns were successful.
- *Data Organization*: Excel's sorting and filtering capabilities make it easy for users to organize data and analyse it more efficiently. A content marketing team could filter blog post-performance data to learn which articles drove the most engagement, informing their future content creation.

Effective data management strategies, incorporating organization, protection, cleaning, and analysis, are foundational to leveraging marketing data effectively. By integrating

tools like MS Excel, marketers can enhance their data management capabilities, uncovering insights that drive strategic decisions. Through practical examples from leading companies and educational applications, it's clear that robust data management is a critical competency in the field of marketing analytics.

SUMMARIZING MARKETING DATA

Even modest marketing campaigns involve a dizzying amount of data. To turn that information into actionable insights, it must first be summarized. As was the case with data collection, there are various methods you can use to condense and summarize data, such as:

- Statistical analysis to uncover trends
- Data visualization for easier comprehension
- Executive summaries to highlight key findings

Summarizing data involves a combination of **descriptive statistics**, data visualization tools, and dynamic tables to highlight key information. When using Excel, a number of approaches are available:

- Filtering and sorting
- Slicing and dicing using a pivot table
- Chart-based summaries

We will discuss each of these techniques and provide relevant examples of them in action.

Problem 3.1: Filtering and Sorting

A clothing store has recently launched a marketing campaign aimed at increasing sales of its summer collection. The store has collected data from various **sales channels** over the first month of the campaign, including online sales, in-store purchases, and sales driven through social media promotions. The primary objective is to analyse the data to identify which sales channels have been most effective and which products have been top performers.

Questions to be solved

1 Which sales channel generated the highest revenue?
2 Which product category saw the highest sales volume?
3 Is there a significant difference in the average sale value between online and in-store purchases?

Factual data

The store collected data on sales transactions, including the sales channel (Online, In-Store, Social Media), product category (Clothing, Accessories, Footwear), unit sold, and total sale value.

Solution 3.1: Stepwise Solution Using Filtering and Sorting in Excel

Step 1: Download the data file for Chapter 3 and go to the Prob3.1 sheet

Step 2: Apply filtering function

- Select the top row/headings in the Excel sheet > go to Sort & Filter menu under Home tab > click on Filter
- Your table headings will now include a drop-down menu symbol
- Click on the drop-down menu for Sales Channel > deselect all the options by clicking Select All > click on any choice of channel > click on OK , i.e. see Figure 3.2
- Use Excel's filtering function to analyse data by specific criteria. For instance, filter by Sales Channel to see which channel has the highest number of sales transactions or the highest revenue

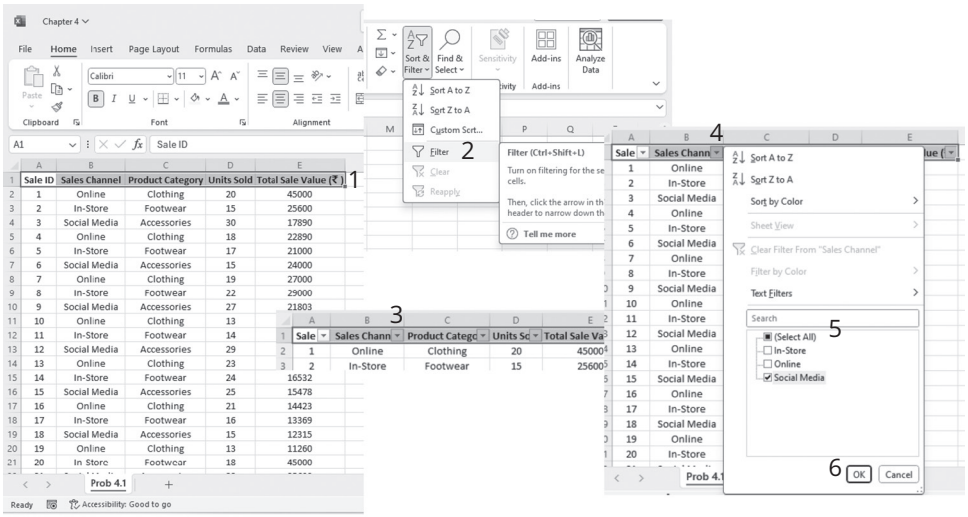


Figure 3.2 Using Filter function

Step 3: Apply Sorting

- Click anywhere in the column (which you want to sort ascending or descending) > go to Sort & Filter menu under Home tab > click on Sort

Smallest to Largest (if you want to sort the data in ascending order) or Sort Largest to Smallest (if you want to sort the data in descending order), i.e. see Figure 3.3

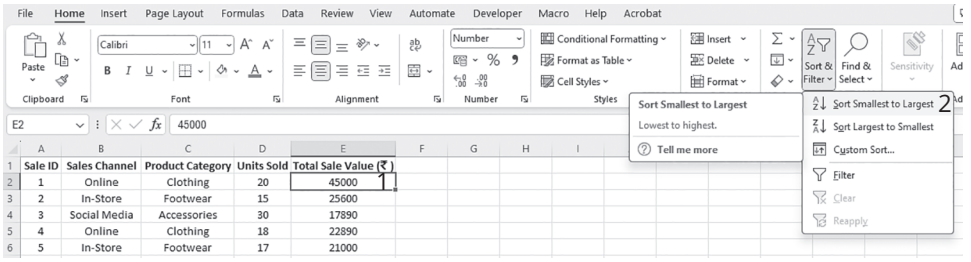


Figure 3.3 Using Sort function sort the data by Total Sale Value in descending order to quickly identify the highest-generating sales transactions

- Similarly, sort by Product Category to group sales data and assess which category performed best, i.e, see Figure 3.4

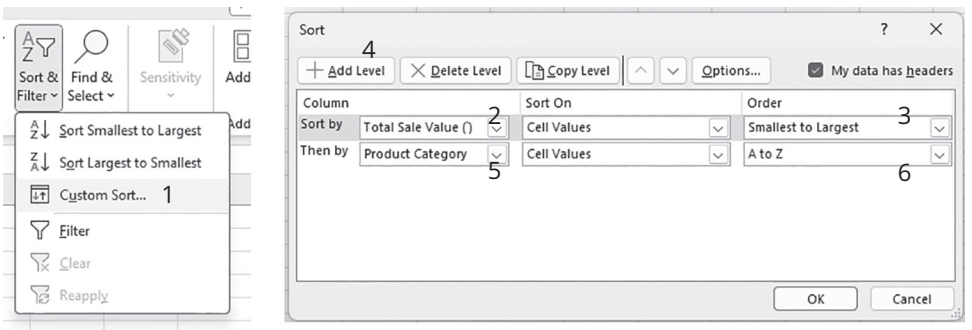


Figure 3.4 Custom sorting for multiple columns

Note that if you want to sort the data based on two more data fields, click anywhere in the column (which you want to sort ascending or descending) > go to Sort & Filter menu under Home tab > click on Custom Sort... and follow the instructions as per Figure 3.4.

Step 4: Calculate Sum and Average

- Use Excel's SUM function to calculate the total revenue generated from each sales channel
- Calculate the average sale value by dividing the total sale value by the number of units sold, particularly for online vs in-store sales

Answers to the questions

1 *Highest Revenue-Generating Sales Channel*: Filtering and sorting shows that the online channel generated the highest revenue.
2 *Top-Performing Product Category*: By sorting the data by Units Sold and Total Sale Value, it is evident that the clothing category saw the highest sales volume.
3 *Difference in Average Sale Value*: Calculating the average sale value for online and in-store purchases reveals a significant difference, with online purchases having a higher average sale value.

Insights 3.2: Smart Sorting: Unlocking Insights with Excel Filters

Problem 3.1 demonstrates the utility of filtering and sorting techniques in Excel for analysing marketing data. By systematically applying these functions, the clothing store can derive actionable insights, such as focusing marketing efforts on the most profitable sales channels and product categories and tailoring the sales approach to maximize the average sale value. This strategic application of basic data analysis techniques can significantly impact the store's marketing and sales strategies. Additionally, one can plot different charts for solving different objectives.

Problem 3.2: Slicing and Dicing Using a Pivot Table

Located in the heart of Beijing, Delightful Dragon Ice Cream Parlor has recently expanded its operations to a second location. To understand the sales dynamics, a dataset in a sheet named 'Prob3.2' for this chapter has been collected, which encompasses sales data from the original location and the new shop. Each shop offers ten unique ice cream flavours inspired by traditional Chinese desserts. They have collected the data on Product, Data, Day, Store, and Price (Yuan, ¥).

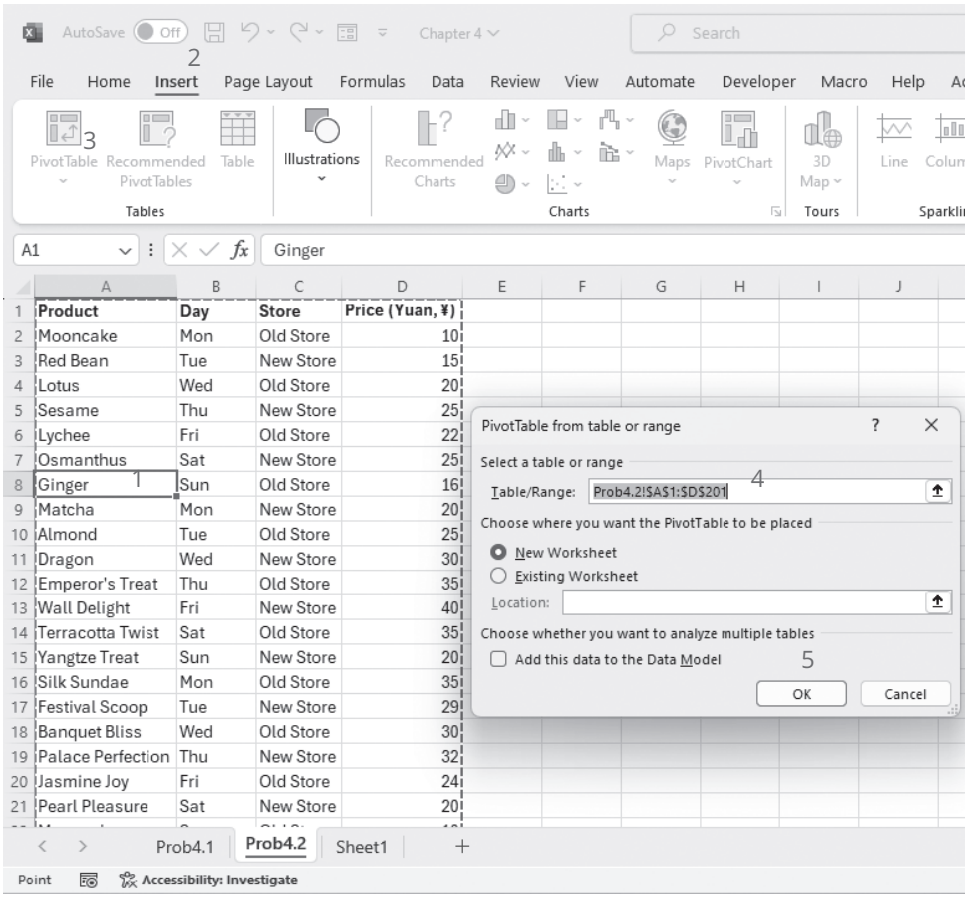
Questions to be solved

- Which shop is performing better in terms of sales?
- Which ice cream flavour is the most popular?
- Which days contribute most to the business's earnings?

'Slice and dice' is a phrase in Excel that refers to analysing data by breaking it down into smaller parts and viewing it from different perspectives. For example, if a pivot table shows internet sales for 2006 and 2007 by country and state, the data has been sliced by year and diced by geography.

Solution 3.2: Stepwise Solution by Slicing and Dicing Using a Pivot Table

- Download the data file for Chapter 3 and go to the Prob3.2 sheet.
- Click anywhere in the data table > select Insert from the ribbon > click on PivotTable > a new dialogue box will appear along with the dotted highlight around the data. If the wrong data table has been selected, you should correct it > click on OK, i.e. see Figure 3.5.



	Product	Day	Store	Price (Yuan, ¥)
2	Mooncake	Mon	Old Store	10
3	Red Bean	Tue	New Store	15
4	Lotus	Wed	Old Store	20
5	Sesame	Thu	New Store	25
6	Lychee	Fri	Old Store	22
7	Osmanthus	Sat	New Store	25
8	Ginger	Sun	Old Store	16
9	Matcha	Mon	New Store	20
10	Almond	Tue	Old Store	25
11	Dragon	Wed	New Store	30
12	Emperor's Treat	Thu	Old Store	35
13	Wall Delight	Fri	New Store	40
14	Terracotta Twist	Sat	Old Store	35
15	Yangtze Treat	Sun	New Store	20
16	Silk Sundae	Mon	Old Store	35
17	Festival Scoop	Tue	New Store	29
18	Banquet Bliss	Wed	Old Store	30
19	Palace Perfection	Thu	New Store	32
20	Jasmine Joy	Fri	Old Store	24
21	Pearl Pleasure	Sat	New Store	20

Figure 3.5 Inserting a pivot table

- This will lead you to a new Excel sheet named Sheet 1.
- A new function will appear towards the right side of the sheet named PivotTable Fields, i.e. see Figure 3.6.
- Drag and drop Product from the list to Row > repeat the same for Price to Values > once again repeat the same for Store to Columns.
- A new table has been created to the left side.
- At the bottom of this table there is an answer to your question 1 – the new store is performing well, though the difference between the two stores is negligible.

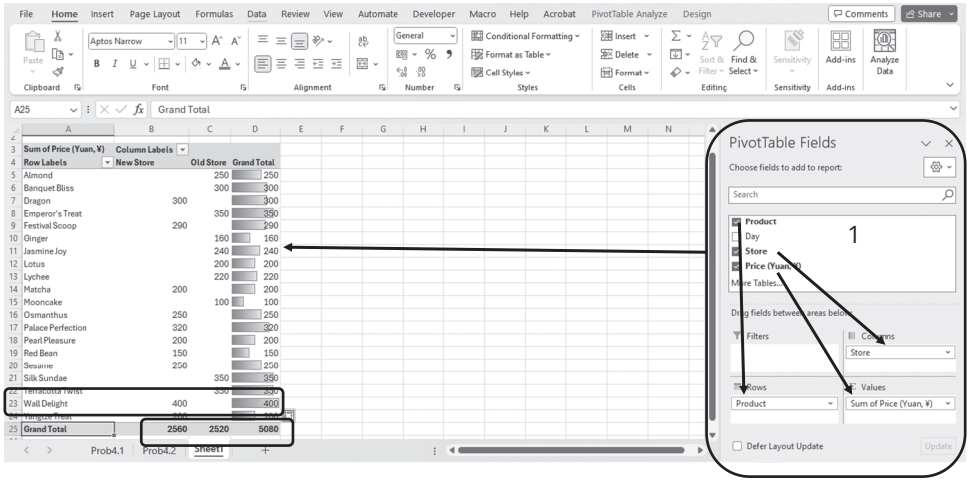


Figure 3.6 Managing a pivot table

If we add data bars or colour scales from conditional formatting (see Chapter 2) you will be able to respond to question 2 as well – that the ice cream flavours Wall Delight, Silk Sundae, and Terracotta Twist are the top-selling flavours respectively.

Now we want to respond to the next question. For that we need to add the Slicer.

- Click anywhere in the pivot table (this will activate new menus in the ribbon) > select PivotTable Analyse > select Insert Slicer from the Filter group > a new dialogue box will open > select Day and click OK, i.e. see Figure 3.7.
- A list of days will appear on the right of the table > select any day.

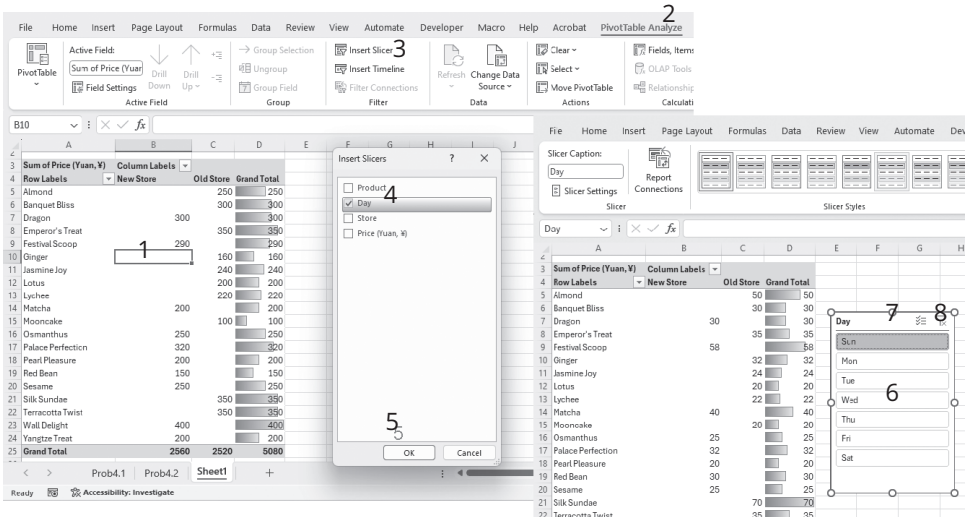


Figure 3.7 Inserting Slicer in Pivot Table

- At the top of this slicer you have the option to Clear Filter, means you can deselect everything and also for multiple selection.
- Now you have to respond to the third question about which days are best.

Problem 3.3 Chart-Based Summaries

Imagine a rapidly growing ice cream franchise, Frosty Delights, with multiple stores across a region. The franchise has been collecting sales data for the past five years and is now looking to analyse the performance of its different stores. Frosty Delights wants to understand the sales trends, seasonal effects, and store contributions to strategize better for the next fiscal year.

Advanced Charts Available in Excel

Advanced charts in Excel, like **sparklines**, **trendlines**, win/loss charts, and column charts, offer sophisticated ways to summarize and visualize complex datasets. Let's discuss their usage and requirements briefly:

- *Sparklines*: Miniature charts within a cell that provide a visual snapshot of data trends over time without detailed axis information. They are useful for displaying trends or patterns in a dataset alongside corresponding data.
- *Win/Loss Charts*: A type of sparkline that is particularly effective for showing binary outcomes across a dataset. They are often used to quickly show wins, losses, or draws without specifics on the magnitude of data.
- *Column Charts*: Useful for comparing different items or showing changes over time. They provide a clear visualization of data volume and can be stacked or clustered for additional comparison between multiple data series.

Questions to be solved

- How have the sales trends varied for each store location over the past five years?
- Which store location has shown the most consistent growth in sales?
- Which store location had the highest sales each year?
- Any stores showing a decline in sales, to investigate and strategize improvements.

Solution 3.3: Stepwise Solution Using Chart-Based Summaries

- Step 1: Download the data file for Chapter 3 and go to the Prob3.3 sheet.
- Step 2: Select the cell G3 > click on Insert tab from ribbon menu > go to Sparklines group and select the Line > a new dialogue box will appear > select the Data Range from B3 to F3 > press OK.

- Step 3: For Trend2 column repeat the process but this time select Column from the Sparkline group.
- Step 4: Select both the cell and drag and drop till last row of information.
- Step 5: Finally, to know the store wise contribution – select the cell B9 > click on Insert tab from ribbon menu > go to Sparklines group and select Column > a new dialogue box will appear > select Data Range from B3 to B7 (this time we are selecting the data from the columns, *not* from the rows). > press OK, i.e. see Figure 3.8.

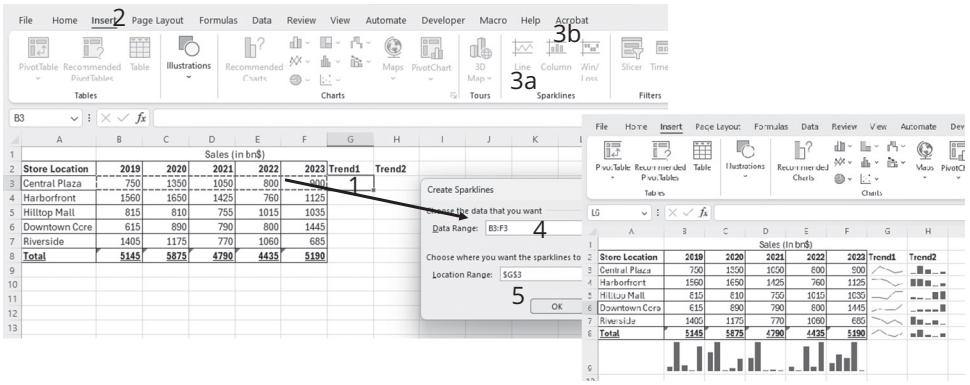


Figure 3.8 Sparklines

Your analysis sheet is ready and looking at the sheet you can respond to the questions.

Insights 3.3: Crafting Strategies from Sales Trends

Looking at the analysis sheet we can respond to the questions asked:

- The stores at Hilltop Mall and Downtown Core have shown positive growth in sales.
- A general observation is that Downtown Core has witnessed the most consistent growth.
- The store wise Contribution row informs us that for the first three years the Harborfront store has had the highest sales. However, in the last two years the Riverside store is selling the most.
- Looking at column Trend2, there are three stores – Central Plaza, Harborfront, and Riverside that show a decline in sales. A suitable strategy has to be crafted here.

DATA PRIVACY AND ETHICS IN MARKETING ANALYTICS

The central theme of marketing analytics is insights into the customer. Effective marketers gather detailed, fine-grained data about customer behaviour and activities. This provides a wealth of knowledge that can drive strategy, improve sales, and build further engagement with customers. It also raises some significant **ethical considerations**.

Collecting, storing, and handling vast amounts of customer data entails a great deal of responsibility. This information must be gathered and managed in a way that safeguards privacy and complies with the law.

Ethical Considerations

Ethics, privacy, and informed consent must be at the forefront of any analytical endeavour. As a marketer, you must ensure that the data you collect is stored securely and used responsibly. This includes adhering to regulations such as the **General Data Protection Regulation** (**GDPR**), which sets parameters for data protection and privacy in the European Union and beyond.

Implementing Ethical Practices

To operationalize ethical data collection, you must make explicit consent part of the process. Marketers must move beyond mere compliance and take concrete steps to foster an environment of trust and transparency. This involves:

- *Transparent Policies*: Implementing privacy policies that inform customers exactly how their data is being used. Google does this by providing its users with a privacy checkup feature that details how their data is used to enhance their experience with the company's various platforms.
- *Anonymity in Analysis*: Anonymizing data is a key step to ensuring privacy. Customer data should provide you with aggregate information, not a means of personally identifying individual customers. Apple achieves this by using a process called local differential privacy, which modifies the user's data before it leaves individual devices, ensuring that it is fully anonymized by the time it reaches Apple's databases.
- *Opt-Out Mechanisms*: Giving users and customers the option to refuse to have their data harvested is critical to gaining their trust and respecting their autonomy. In some cases, an opt-in mechanism will be preferable instead, asking user permission to collect their data rather than allowing them to opt out of it.

- *Data Minimization*: One best practice is simply to collect the minimum data needed for your analysis. Amazon employs this practice by gathering just enough customer data to improve recommendations and enhance services, rather than collecting additional, irrelevant information about its users.

Accountability and Trust Building

Marketing analytics should be conducted within an ethical framework that prioritizes accountability. Companies like IBM are leading the way on this front, implementing **ethical AI** and analytics principles that focus on explainability, fairness, and accountability. This approach allows them to gather and use knowledge to remain competitive without losing the goodwill of their customers in the process. The more care and transparency a brand demonstrates in handling customer deata, the more trust it will build with customers. After all, customers are savvy. Almost all of them are highly aware that the companies they interact with are collecting and using their data. They want assurances that their data will be handled securely and responsibly.

Privacy by Design

The concept of '**privacy by design**' calls for privacy to be integrated directly into the development of IT systems and business practices. Microsoft has been a strong advocate of this approach, embedding privacy into its product development cycle, treating it as a genuine corporate value rather than a compliance requirement.

Educating Stakeholders

Marketers and brands should also educate stakeholders about how their data is being collected and why it is being used. Rather than burying this information in lengthy Terms of Service documents, they should provide clear, succinct explanations that customers can find and understand easily.

As you establish your data ethics policies, remember that the goal isn't simply to adhere to privacy laws. Rather, it's about fostering a culture where respecting the consumer is as fundamental as the insights gleaned from their data. Marketing analytics should work in service of building relationships with customers, and those relationships should be based on mutual trust and respect.

CONCLUSION: BRIDGING DATA AND DECISION-MAKING

This chapter provided an overview of how data should be collected, managed, and organized. With advanced Excel techniques, you can take even the most granular data

and weave it into coherent narratives through charts, tables, and other types of summaries. In doing so, you can distil large datasets into clear, comprehensible, and actionable insights that are both accessible and enlightening.

The capstone of this chapter covered the ethical dimension of handling customer data. That was no coincidence – it is an essential consideration that should guide the way you approach all the information you will be gathering and analysing. This is a cornerstone of the trust between customers and the brands that market to them. The ultimate aim of any marketing campaign is to achieve business growth, but it must always do so in a way that respects every individual's right to privacy.

EXERCISES AND ACTIVITIES

1 Data Collection Simulation: Simulate a data collection process by designing a survey related to consumer preferences for a given product. Students will develop questions, determine the mode of delivery (online or face-to-face), and define what data will be collected.

   i Design a 10-question survey that could be used to gather marketing data.
   ii Identify potential ethical issues and how they would address them.
   iii Simulate the collection of data by having peers fill out the survey.

2 Independent Chart Creation Exercise: Using a provided dataset, create various types of charts in Excel to represent the data visually. Each student will choose the most appropriate charts to illustrate different aspects of the data.

   i Analyse the dataset to identify key trends and patterns.
   ii Create at least three different types of charts (e.g., bar, pie, line) to best display the information.
   iii Write a brief explanation for why each chart type was chosen and what insights it provides.

3 Data Privacy Reflection Essay: Write a reflective essay on a contemporary issue in data privacy, incorporating research and personal viewpoints.

   i Research a current issue in data privacy related to marketing.
   ii Discuss potential impacts on consumers and marketers.
   iii Propose solutions or guidelines that marketers should follow to address these issues.

4 Visualization Critique and Redesign: Critique provided visuals from marketing campaigns, focusing on their effectiveness and ethical representation, and suggest improvements.

   i *Evaluate each visual for clarity, ethical representation, and effectiveness.*
   ii *Suggest redesigns or enhancements to improve the visual presentation.*
   iii *Explain how the redesigns better communicate the data insights.*

DISCUSSION QUESTIONS

1 How have regulations like GDPR and the California Consumer Privacy Act (CCPA) altered marketing strategies? Consider both the challenges and opportunities these regulations have created for businesses. The same applies to the Digital Personal Data Protection Act (DPDPA) of 2023 for businesses operating in India.

2 Reflect on the role that data summaries and visualizations play in strategic decision-making. How can misinterpretation of data visualizations lead to flawed decisions, and what safeguards should be put in place to prevent this?