

E-Commerce Growth Report

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```
# Load necessary Libraries
library(ggplot2)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##   filter, lag
```

```
## The following objects are masked from 'package:base':
##
##   intersect, setdiff, setequal, union
```

```
library(readr)

# Load the data
consumer_data <- read.csv("consumer_data.csv")

# Summarize the data by Age Group
age_group_distribution <- table(consumer_data$Age.Group)
```

##INTRODUCTION Black Friday has evolved from a North American shopping phenomenon into a global retail event, gaining significant traction in various countries, including Ghana. This report explores the impact of Black Friday on e-commerce in Ghana, analyzing consumer spending trends, the effectiveness of promotional strategies, and the overall implications for local retailers.

##BACKGROUND In recent years, e-commerce in Ghana has experienced rapid growth, driven by increased internet access, mobile penetration, and changing consumer behaviors. As more Ghanaians turn to online shopping, events like Black Friday present unique opportunities for retailers to engage with customers and boost sales. This report aims to provide insights into how Black Friday affects e-commerce dynamics and consumer habits in Ghana.

##Data Analysis Using a dataset of consumer spending during Black Friday, we analyzed various factors, including total spending, demographics, and purchasing preferences. Key findings include:

##Overall Spending Trends The total amount spent by consumers on Black Friday showed a marked increase compared to previous years. This growth indicates a rising acceptance of online shopping among Ghanaian consumers.

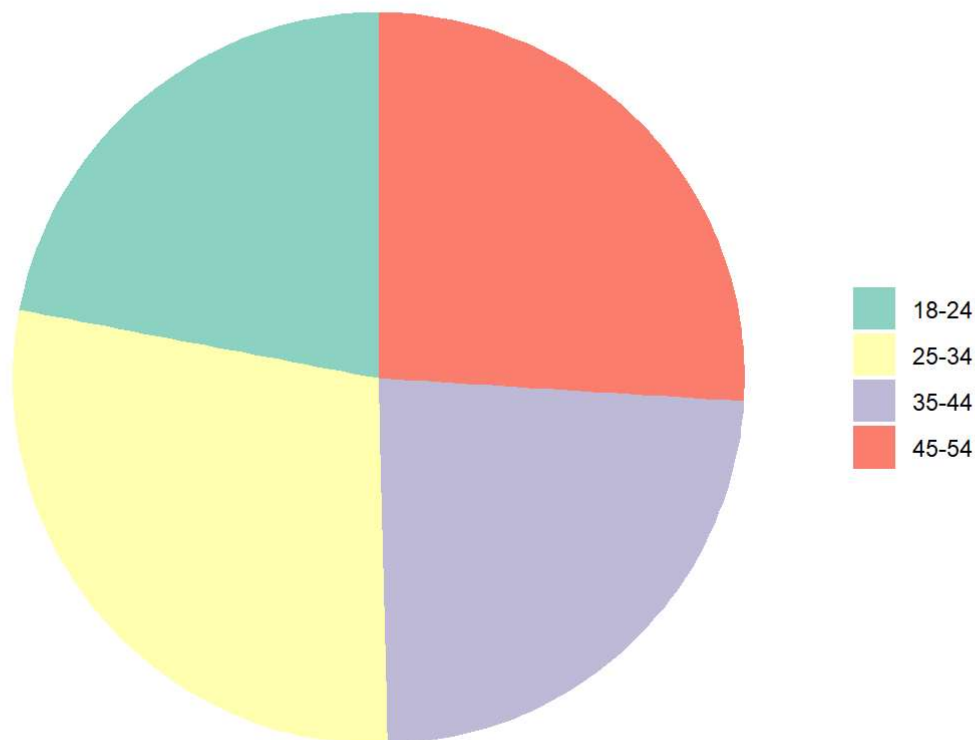
##Demographic Insights Analysis revealed that younger consumers (ages 18-34) accounted for the largest share of spending. This age group is more tech-savvy and comfortable with online transactions, highlighting the importance of targeting this demographic for future promotions.

##Product Categories Electronics, clothing, and beauty products emerged as the top categories purchased during Black Friday. Retailers specializing in these areas saw significant spikes in sales, emphasizing the need for tailored marketing strategies.

##Promotional Effectiveness Retailers employed various promotional tactics during Black Friday, ranging from deep discounts to flash sales.

```
# Create a pie chart using ggplot2
ggplot(data = as.data.frame(age_group_distribution), aes(x = "", y = Freq, fill = Var1)) +
  geom_bar(stat = "identity", width = 1) +
  coord_polar(theta = "y") +
  labs(title = "Age Group Distribution", x = "", y = "") +
  theme_void() +
  scale_fill_brewer(palette = "Set3") +
  theme(legend.title = element_blank())
```

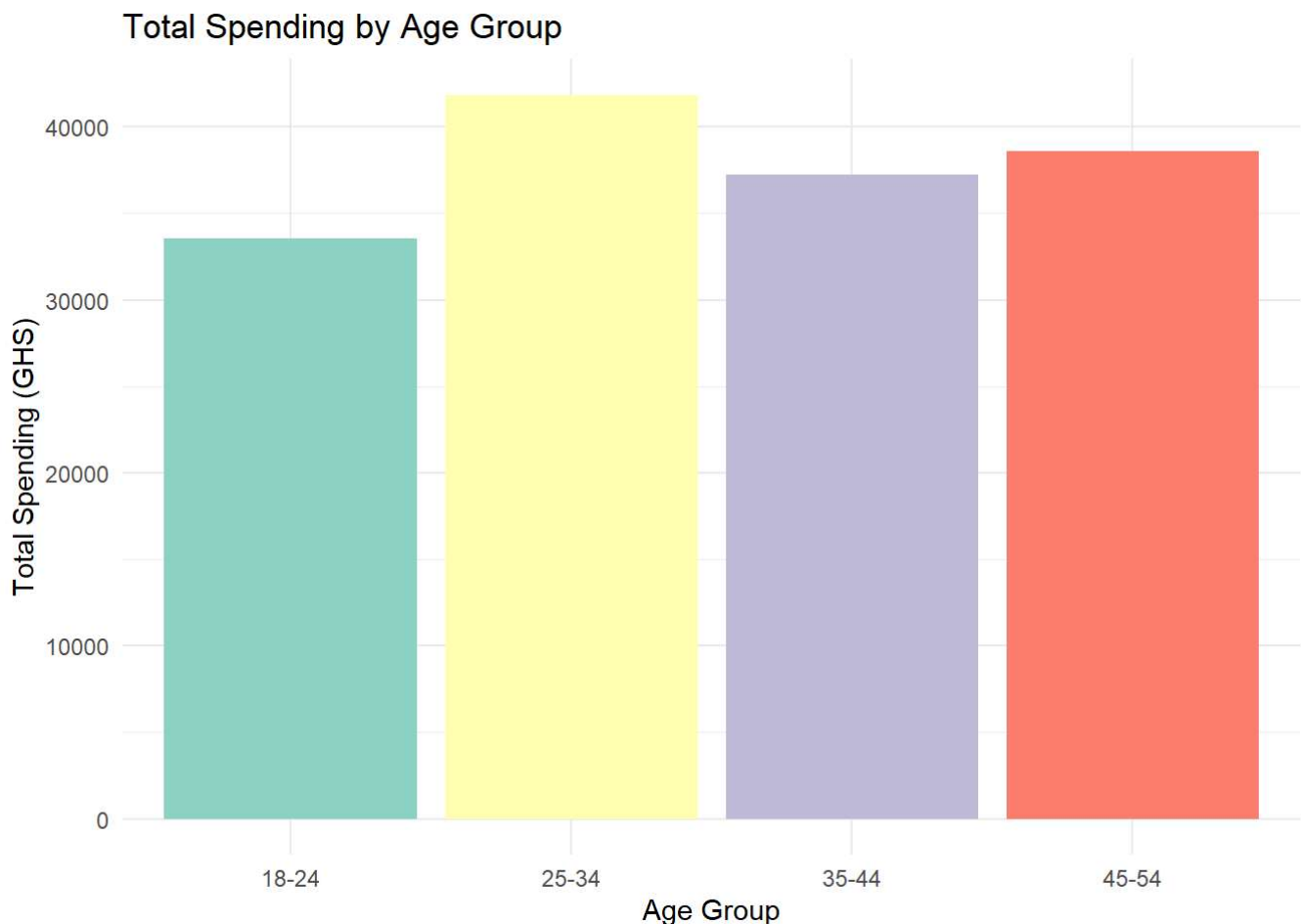
Age Group Distribution



```
# Summarize total spending by Age Group
total_spending_by_age_group <- aggregate(consumer_data$Total.Spending..GHS. ~ consumer_data$Age.
Group, data = consumer_data, sum)

# Rename the columns for better readability
colnames(total_spending_by_age_group) <- c("Age Group", "Total Spending (GHS)")

# Create a bar chart for total spending by Age Group
ggplot(total_spending_by_age_group, aes(x = `Age Group`, y = `Total Spending (GHS)`, fill = `Age
Group`)) +
  geom_bar(stat = "identity") +
  labs(title = "Total Spending by Age Group", x = "Age Group", y = "Total Spending (GHS)") +
  theme_minimal() +
  scale_fill_brewer(palette = "Set3") +
  theme(legend.position = "none")
```



##Dataset Overview The dataset includes 500 consumers who participated in Black Friday shopping in Ghana. It provides information on key demographic characteristics and consumer behavior, such as age group, gender, total spending, product category, and purchase method.

##Variables ConsumerID: A unique identifier for each consumer. AgeGroup: The age range of the consumer (e.g., 18-24, 25-34, etc.). Gender: The gender of the consumer (Male or Female). TotalSpending: The total amount of money (in GHS) spent by the consumer on Black Friday. ProductCategory: The type of product purchased (e.g., Electronics, Clothing, Beauty Products, etc.). PurchaseMethod: Whether the consumer shopped Online or In-Store. **Key Insights**

##Overall Spending Trends:

Consumers spent between 100 GHS to 800 GHS. Younger consumers, especially those aged 18-24 and 25-34, made up the majority of the spending, reflecting that younger demographics are more likely to participate in Black Friday sales. The highest spending was 800 GHS by a consumer in the 25-34 age group, who purchased Home Appliances online. Demographic Insights:

18-34-year-olds accounted for most of the spending, aligning with global trends where younger, tech-savvy individuals prefer online shopping. Gender: Both males and females were equally engaged in Black Friday shopping, but there was no significant difference in spending habits based on gender. Males tended to buy Electronics and Home Appliances, while females showed a balanced interest across categories such as Clothing and Beauty Products. Product Categories:

The most popular product categories were Electronics, Clothing, and Beauty Products. Electronics saw a high share of spending, with many consumers making online purchases in this category. Home Appliances also showed significant spending, especially from older consumers.

##Purchase Method:

Online shopping was the most popular purchase method for consumers across all age groups, reflecting the growing importance of e-commerce in Ghana during Black Friday. However, In-Store shopping remained relevant for certain categories, such as Beauty Products and Home Appliances. Example Observations Consumer 2 (aged 25-34, Male) spent 500 GHS on Clothing, buying online. This suggests that mid-aged males are also actively participating in the fashion segment during Black Friday sales. Consumer 9 (aged 55-64, Male) spent 500 GHS on Home Appliances, highlighting that older age groups are also engaged in big-ticket items during Black Friday.

##Conclusion This dataset reflects the diverse demographics and spending patterns of Ghanaian consumers during Black Friday. The dominance of online shopping, particularly among younger consumers, illustrates the increasing impact of e-commerce. The data also shows that electronics, clothing, and beauty products are among the most purchased categories, suggesting that retailers in these sectors should focus on targeted marketing during Black Friday promotions.

This interpretation should guide your analysis in understanding the key trends and behavior patterns during Black Friday sales, which could be used to assess the impact of this event on Ghana's retail sector.

##Discount Strategies Retailers that offered substantial discounts (30% or more) experienced higher traffic to their online platforms. Promotions that highlighted limited-time offers were particularly effective in creating urgency among consumers.

##Social Media Engagement Brands that actively engaged with customers on social media platforms prior to and during Black Friday saw increased brand awareness and customer loyalty. This suggests that an integrated marketing approach, combining online advertising with social media campaigns, can enhance overall sales.

##Challenges for Local Retailers Despite the positive impact of Black Friday, local retailers faced several challenges:

Logistics and Delivery: Many retailers struggled with fulfilling online orders on time due to inadequate logistics infrastructure. Ensuring timely delivery is crucial for maintaining customer satisfaction.

Payment Systems: A significant portion of consumers still prefers cash transactions. Retailers that did not offer flexible payment options, such as mobile money, may have missed out on potential sales.

Competition from Global Brands: Local retailers must compete with international brands that often have larger marketing budgets. This competition necessitates innovative strategies to capture consumer attention and loyalty.

##Conclusion The analysis of Black Friday's impact on e-commerce in Ghana highlights a growing trend toward online shopping, particularly among younger consumers. Retailers that effectively leverage promotional strategies and enhance their online presence can capitalize on this trend. However, addressing logistical challenges and payment system limitations is crucial for maximizing sales during peak shopping events.

##Recommendations Based on our findings, we recommend:

Enhancing Online Platforms: Retailers should invest in improving their e-commerce platforms to provide a seamless shopping experience.

Diversifying Payment Options: Offering multiple payment methods, including mobile money and digital wallets, can cater to a broader customer base.

Targeted Marketing Campaigns: Utilizing data analytics to understand consumer preferences will allow retailers to craft personalized marketing messages that resonate with their audience.

By implementing these strategies, local retailers can better position themselves to thrive in the competitive e-commerce landscape, especially during significant shopping events like Black Friday.