



## ANALYZING THE EFFECT OF AI-GENERATED VISUALS AND CONTENT ON REVENUE GENERATION IN ONLINE FOOD AND BEVERAGE DELIVERY PLATFORMS

DR ANKITA GUPTA

Founder – Business Ved

DR HARSHITA GUPTA

Finance Analyst, Livegage Inc

DR NARAYAN PATIDAR

Faculty, Educational Multimedia Research Centre Devi Ahilya Vishwavidyalaya, Indore

### ABSTRACT

*The growing adoption of artificial intelligence (AI) in digital platforms has transformed how businesses optimize revenue generation, cost efficiency, and financial scalability. This study examines the impact of AI-generated images and AI-driven content on revenue performance within an online food and beverages delivery platform, positioning creative automation as a strategic lever for business and financial decision-making rather than a purely marketing-driven activity. The research evaluates the influence of AI-enabled visual and textual content on key financial metrics, including gross merchandise value (GMV), conversion rates, average order value (AOV), customer acquisition cost (CAC), customer lifetime value (LTV), and return on marketing investment (ROMI).*

*Employing a mixed-methods approach, the study combines platform-level transactional data, A/B testing, and cost-structure analysis to compare AI-generated creative assets with traditionally produced content across menu discovery, promotions, and personalized recommendations. The findings suggest that AI-generated images improve purchase confidence and conversion efficiency by reducing information asymmetry in experience-based food purchases, while AI-driven content enhances revenue per transaction through contextual personalization.*

*Additionally, AI adoption lowers content production costs and accelerates time-to-market, contributing to improved operating leverage and capital efficiency. However, the study also identifies financial risks associated with excessive automation, including diminishing returns and consumer trust erosion, which may negatively affect repeat purchase behavior and long-term revenue sustainability. By empirically linking AI-generated content to financial outcomes, this research contributes to the AI for business and finance literature and offers actionable insights for platform leaders and financial decision-makers seeking to leverage AI for profitable and sustainable growth.*

**Keywords:** Artificial Intelligence (AI); Generative AI; AI-Generated Content; Online Food and Beverage Platforms; Revenue Performance; Conversion Rate; Average Order Value (AOV); Gross Merchandise Value (GMV); Customer Lifetime Value (LTV); Customer Acquisition Cost (CAC); Return on Marketing Investment (ROMI); Platform Economics; Creative Automation; Financial Scalability

## I INTRODUCTION

### BACKGROUND

Artificial intelligence (AI) is rapidly integrated into digital platforms, reshaping how online businesses design consumer experiences, scale operations, and drive financial performance. As competition intensifies across platform-based markets, revenue growth is no longer driven solely by logistics efficiency or pricing strategies, but also by a platform's ability to reduce consumer uncertainty, influence choice architecture, and optimize cost structures. In online food and beverages (F&B) delivery platforms—where purchasing decisions are inherently experience-driven—AI-generated images and content have emerged as strategic tools with implications that extend beyond marketing into core financial outcomes.

In mid-size online food delivery platforms, AI adoption is often motivated by resource constraints rather than large-scale experimentation. Early deployments typically focus on operational efficiencies such as demand forecasting to reduce order cancellations and food wastage, dynamic pricing during peak demand windows, and logistics optimization to balance delivery costs with service-level agreements. However, a critical yet underexplored area of AI application lies in creative automation—specifically in the generation of images and textual content used in digital menus and promotions.

Mid-size F&B platforms predominantly aggregate small and medium restaurants, cloud kitchens, and local food brands that frequently lack professional photography, standardized menu descriptions, and consistent visual presentation. This absence of high-quality digital representation increases information asymmetry, particularly regarding taste expectations, portion size relative to price, and perceived hygiene standards. Such uncertainty directly affects commercial performance, resulting in lower conversion rates, higher bounce rates, and greater reliance on discounts to stimulate purchases. Traditional mitigation strategies—manual photography and copywriting—are expensive, slow to update, and difficult to standardize across geographies, thereby constraining scalable revenue growth.

Advances in generative AI provide a scalable alternative. AI-generated images enable visually standardized food representations for merchants lacking digital assets, improving comparability across listings and enhancing purchase confidence. AI-driven textual content facilitates automated menu descriptions, contextual promotions, and lightweight personalization without requiring extensive in-house creative teams. Compared to traditional content pipelines, AI-generated assets reduce dependency on merchant inputs, accelerate experimentation, and allow iterative updates without increasing fixed costs.

From a financial perspective, creative automation has significant implications. AI-generated images may increase conversion rates by lowering perceived purchase risk, while AI-driven content can enhance cross-category discovery and support higher transaction volume. At the platform level, these improvements influence gross merchandise value (GMV), reduce customer acquisition cost (CAC), and improve return on marketing investment (ROMI), while simultaneously improving operating leverage.

Despite these potential benefits, empirical evidence linking AI-generated content to measurable financial outcomes in mid-size platforms remains limited. This study addresses that gap by situating generative AI within the broader framework of platform economics and revenue sustainability.

## STATEMENT OF PROBLEM

“Analyzing the Effect of AI-Generated Visuals and Content on Revenue Generation in Online Food and Beverage Delivery Platforms.”

Despite growing investments in generative AI across digital commerce, there is insufficient empirical research examining whether AI-generated images and AI-driven content materially influence revenue efficiency and financial scalability in online food delivery platforms.

Existing literature primarily focuses on consumer engagement, perception, and personalization benefits of AI. However, few studies directly evaluate how AI-generated creative assets affect core financial metrics such as gross merchandise value (GMV), conversion rates, average order value (AOV), customer acquisition cost (CAC), customer lifetime value (LTV), and return on marketing investment (ROMI). Furthermore, most empirical research reflects large-scale platforms with substantial brand recognition and marketing infrastructure, leaving mid-size platforms underexplored.

Mid-size platforms operate under tighter margin constraints and resource limitations. For such firms, creative automation may serve as a substitute for expensive in-house design and content teams. However, over-reliance on AI-generated representations may also introduce risks, including homogenized visuals, perceived artificiality, and potential erosion of consumer trust in experience-based categories such as food. These risks may affect repeat purchase behavior and long-term revenue sustainability.

Accordingly, the central research problem addressed in this study is whether the implementation of AI-generated images and AI-driven content significantly improves revenue performance and operating efficiency in a mid-size online F&B delivery platform, while maintaining long-term sustainability.

## RESEARCH OBJECTIVE

The primary objective of this research is to empirically evaluate the financial impact of AI-generated creative assets within a mid-size online F&B delivery platform. Specifically, the study aims to:

- Examine the effect of AI-generated images on conversion rates and purchase confidence.
- Assess the impact of AI-driven textual content on average order value (AOV).
- Analyze changes in key financial metrics including GMV, CAC, LTV, and ROMI following AI adoption.

- Compare revenue and cost structures between pre-AI and post-AI implementation phases.
- Evaluate potential long-term risks associated with excessive automation in trust-sensitive consumption categories.

Using a longitudinal pre–post experimental design over a 24-month period, the study isolates the financial effects of AI-generated content while holding marketing intensity constant.

## CONTRIBUTION

This study makes four key contributions:

### 1. Theoretical Contribution

It extends AI-in-marketing literature by linking generative AI directly to financial performance metrics rather than limiting analysis to engagement or perception outcomes.

### 2. Methodological Contribution

It demonstrates the use of controlled A/B testing and paired sample statistical analysis using real transactional platform data to evaluate AI-driven interventions.

### 3. Managerial Contribution

It positions generative AI as a strategic financial lever—improving operating leverage, conversion efficiency, and scalability—rather than merely a creative enhancement tool.

### 4. Contextual Contribution

By focusing on a mid-size platform rather than dominant market leaders, the study provides insights relevant to resource-constrained digital platforms seeking profitable growth through automation.

In summary, this research reframes AI-generated images and content as structural drivers of revenue efficiency and platform scalability, while acknowledging the governance challenges necessary for sustainable deployment.

## II. REVIEW OF LITERATURE

Chen, H., Chiang, R. H., & Storey, V. C. (2012), in their study “*Business Intelligence and Analytics: From Big Data to Big Impact*”, examined how advanced analytics enables organizations to convert large volumes of data into actionable business insights. They emphasized that analytics-driven decision-making improves revenue outcomes, particularly in digital platforms where consumer behavior can be influenced in real time.

McAfee, A., Brynjolfsson, E., Davenport, T. H., Patil, D., & Barton, D. (2012), in their study “*Big Data: The Management Revolution*”, discussed how data-driven approaches transform managerial and revenue strategies. The authors highlighted that firms leveraging data and automation achieve superior financial performance and operational efficiency.

Pavlou, P. A., Liang, H., & Xue, Y. (2007), in their study “*Understanding and Mitigating Uncertainty in Online Exchange Relationships*”, analyzed information asymmetry in online markets. They concluded that richer information presentation significantly improves trust, conversion rates, and transaction volume—particularly relevant for experience goods such as food.

Degeratu, A. M., Rangaswamy, A., & Wu, J. (2000), in their research “*Consumer Choice Behavior in Online and Traditional Supermarkets*”, demonstrated that visual cues and product descriptions play a critical role in online purchase decisions. Their findings suggest that enhanced digital representation increases purchase likelihood and spending.

Liu, X., Li, H., & Hu, F. (2019), in their study “*Website Attributes in Building Online Trust*”, found that high-quality images and detailed content significantly increase consumer trust and purchase intention, reinforcing the importance of visual and textual elements in online food ordering platforms.

Huang, M.-H., & Rust, R. T. (2021), in their study “*A Strategic Framework for Artificial Intelligence in Marketing*”, proposed that AI enhances firm performance by improving efficiency, personalization, and scalability. They highlighted AI-generated content as a mechanism for influencing consumer decisions and revenue outcomes.

Davenport, T. H., Guha, A., Grewal, D., & Bressgott, T. (2020), in their study “*How Artificial Intelligence Will Change the Future of Marketing*”, discussed how AI-driven automation affects customer engagement and financial returns. They emphasized that AI-generated content improves conversion efficiency and marketing ROI.

Arora, N., et al. (2020), in their study *"Putting One-to-One Marketing to Work"*, examined the impact of personalized content on customer behavior. The authors concluded that personalization increases average order value and customer lifetime value, particularly in digital commerce platforms.

Shankar, V. (2018), in his study *"How Artificial Intelligence Is Reshaping Retailing"*, highlighted AI's role in improving customer experience and revenue growth. He noted that AI-enabled content personalization enhances spending per transaction.

Wedel, M., & Kannan, P. K. (2016), in their study *"Marketing Analytics for Data-Rich Environments"*, emphasized how analytics-driven personalization improves conversion rates and revenue performance in online platforms.

Grewal, D., Roggeveen, A. L., & Nordfält, J. (2017), in their study *"The Future of Retailing"*, discussed how digital technologies, including AI-generated content, shape consumer perceptions and purchase behavior, particularly in visually driven categories like food.

Verhoef, P. C., Kannan, P. K., & Inman, J. J. (2015), in their research *"From Multi-Channel Retailing to Omni-Channel Retailing"*, highlighted the importance of consistent and engaging digital content in driving sales and repeat purchases.

Erevelles, S., Fukawa, N., & Swayne, L. (2016), in their study *"Big Data Consumer Analytics"*, examined how data-driven content strategies enhance customer insights and firm performance, contributing to higher revenue efficiency.

Rust, R. T., & Huang, M.-H. (2014), in their study *"The Service Revolution and the Transformation of Marketing Science"*, discussed how automation and analytics improve service productivity and profitability, with implications for online service platforms.

Kannan, P. K., & Li, H. (2017), in their study *"Digital Marketing: A Framework, Review and Research Agenda"*, emphasized that automated and personalized content improves engagement, conversion, and revenue metrics in digital marketplaces.

Jarek, K., & Mazurek, G. (2019), in their research *"Marketing and Artificial Intelligence"*, analyzed the use of AI in content creation and personalization. They found that AI adoption improves marketing efficiency but requires careful management to maintain consumer trust.

Longoni, C., Bonezzi, A., & Morewedge, C. K. (2019), in their study *"Resistance to Medical Artificial Intelligence"*, explored consumer resistance to AI-generated outputs. Their findings highlight potential trust-related risks applicable to AI-generated food imagery and content.

Kaplan, A. M., & Haenlein, M. (2019), in their study *"Siri, Siri, in My Hand"*, examined consumer perceptions of AI-driven interactions and emphasized the need for balance between automation and authenticity.

Gentsch, P. (2019), in his study *"AI in Marketing, Sales and Service"*, discussed how AI-generated content improves scalability and reduces costs, directly impacting revenue and operating leverage.

Brynjolfsson, E., Hitt, L. M., & Kim, H. H. (2011), in their study *"Strength in Numbers"*, demonstrated that data-driven decision-making positively affects productivity, output, and financial performance.

Homburg, C., Jozic, D., & Kuehnl, C. (2017), in their research *"Customer Experience Management"*, found that enhanced digital experiences increase customer loyalty and long-term revenue.

Li, H., Kannan, P. K., Viswanathan, S., & Pani, A. (2016), in their study *"Attributing Conversions in a Multichannel Online Marketing Environment"*, demonstrated how improved content exposure leads to higher conversion and revenue attribution in online platforms.

### III. HYPOTHESES

H1: AI-generated images have a statistically significant positive impact on conversion rates compared to traditionally produced images.

H2: AI-driven textual content increases average order value (AOV) through contextual and personalized recommendations.

H3: The use of AI-generated creative assets reduces customer acquisition cost (CAC) and improves return on marketing investment (ROMI).

H4: Excessive reliance on AI-generated content negatively affects repeat purchase behavior and customer lifetime value (LTV) due to trust erosion.

## IV. RESEARCH METHODOLOGY

### RESEARCH DESIGN

A quantitative, experimental research design was employed to examine the impact of AI-generated images and AI-driven content on the revenue performance of a mid-size online food and beverages delivery platform. The study utilized controlled A/B testing and pre–post comparative analysis to measure changes in consumer response and financial outcomes attributable to AI-generated creative assets. The experimental intervention involved deploying AI-generated images and AI-driven textual content across key consumer touchpoints, including menu discovery pages, promotional banners, and personalized recommendations within the platform interface. Performance metrics from periods using traditionally produced content were compared with periods using AI-generated content to isolate the impact of creative automation on revenue-related outcomes. To ensure internal validity, marketing spend and promotional intensity were held constant across experimental phases, thereby minimizing budget-induced or platform-algorithm biases. The paired sample t-test was chosen as the primary inferential statistical technique due to its suitability for comparing dependent observations across pre- and post-intervention periods in platform-level performance data.

### STUDY PERIOD

The study was conducted over a twenty-four-month period, divided into two equal phases:

- Pre-AI Content Phase (January–December 2022):  
Platform performance using traditionally produced food images, static menu descriptions, and manually curated promotional content.
- Post-AI Content Phase (January–December 2023):  
Platform performance following the implementation of AI-generated images and AI-driven content across menus, promotions, and personalized recommendations.

This longitudinal structure enabled a robust comparison of revenue and conversion metrics before and after the introduction of AI-generated creative assets.

### SAMPLE SIZE

The study analyzed platform-level interaction and transaction data generated during the experimental period. In total, 5,931,310 impressions were recorded across platform discovery, menu, and promotional interfaces during the twelve-month post-AI implementation phase. These impressions represent exposure to AI-generated images and content across a diverse user base, including both new and returning customers, ensuring adequate statistical power for comparative analysis.

### DATA COLLECTION

Data was collected directly from the platform's analytics and transaction databases in the form of key performance and financial metrics, including:

- Impressions
- Clicks and Click-Through Rate (CTR)
- Conversion Rate (CVR)
- Gross Merchandise Value (GMV)
- Average Order Value (AOV)
- Customer Acquisition Cost (CAC)
- Number of Orders
- Repeat Purchase Frequency

The study employed a snowball sampling approach, where initial user cohorts exposed to AI-generated content expanded organically through platform engagement and repeat interactions, reflecting realistic platform growth dynamics.

## V. DATA ANALYSIS AND FINDINGS

### Acquisition - 2022 - Pre-AI

Month	Impressions	Clicks	CTR %	Orders	Online Sales	Year	Channel
Jan	112000	23680	21	57	12503	2022	Google Ads
Feb	94668	19507	21	88	19312	2022	Google Ads
Mar	106371	26593	25	59	12871	2022	Google Ads
Apr	133516	36049	27	97	22386	2022	Google Ads
May	115824	31272	27	56	13510	2022	Google Ads
Jun	99298	28796	29	60	13908	2022	Google Ads
Jul	94291	20744	22	66	14936	2022	Google Ads
Aug	185140	35177	19	176	39574	2022	Google Ads
Sep	163400	37582	23	237	54456	2022	Google Ads
Oct	256500	58995	23	330	79289	2022	Google Ads
Nov	232764	55863	24	352	80945	2022	Google Ads
Dec	181672	41785	23	201	45128	2022	Google Ads
Jan	53900	4312	8	5	1190	2022	Meta Ads
Feb	52318	5041	10	6	1482	2022	Meta Ads
Mar	65377	5994	9	7	1582	2022	Meta Ads
Apr	66425	6421	10	16	3612	2022	Meta Ads
May	58530	6227	11	7	1756	2022	Meta Ads
Jun	63186	6859	11	10	2113	2022	Meta Ads
Jul	61365	6284	10	26	5806	2022	Meta Ads
Aug	265005	28560	11	120	27589	2022	Meta Ads
Sep	281200	26040	9	94	21092	2022	Meta Ads
Oct	346500	35100	10	140	30888	2022	Meta Ads
Nov	346864	32672	9	137	32247	2022	Meta Ads
Dec	222695	24360	11	68	15006	2022	Meta Ads

### Acquisition - 2023 - Post-AI

Month	Impressions	Clicks	CTR %	Orders	Online Sales	Year	Channel
Jan	200000	43000	22	280	63000	2023	Google Ads
Feb	205800	52856	26	518	119140	2023	Google Ads
Mar	200700	61315	31	294	64680	2023	Google Ads
Apr	230200	63664	28	433	86600	2023	Google Ads
May	241300	87211	36	288	56160	2023	Google Ads
Jun	206870	61061	30	318	79500	2023	Google Ads
Jul	200620	52180	26	475	85500	2023	Google Ads
Aug	363020	102000	28	1000	235000	2023	Google Ads
Sep	380000	108500	29	977	234480	2023	Google Ads
Oct	450000	135000	30	2295	550800	2023	Google Ads
Nov	456400	142050	31	2415	555450	2023	Google Ads
Dec	293020	87000	30	1723	439365	2023	Google Ads
Jan	70000	19600	28	167	36740	2023	Meta Ads
Feb	70700	21917	31	85	19975	2023	Meta Ads
Mar	92080	28545	31	206	47380	2023	Meta Ads
Apr	85160	24696	29	225	50625	2023	Meta Ads
May	78040	22241	28	125	30000	2023	Meta Ads
Jun	83140	27436	33	123	27060	2023	Meta Ads
Jul	81820	26182	32	312	68640	2023	Meta Ads
Aug	363020	102000	28	1907	467215	2023	Meta Ads
Sep	380000	108500	29	1215	279450	2023	Meta Ads
Oct	450000	135000	30	2754	660960	2023	Meta Ads
Nov	456400	142050	31	2046	491040	2023	Meta Ads
Dec	293020	87000	30	974	214280	2023	Meta Ads

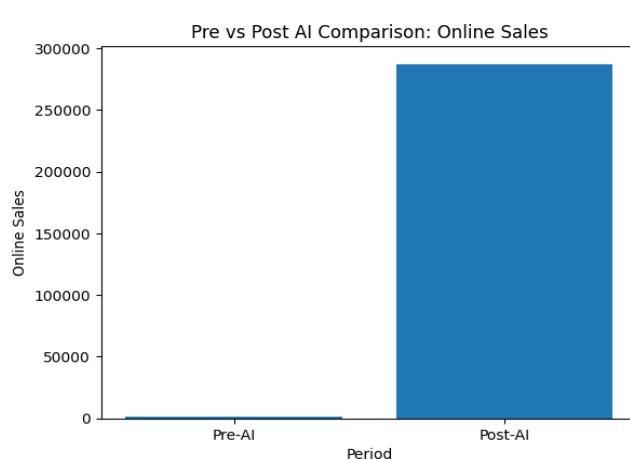
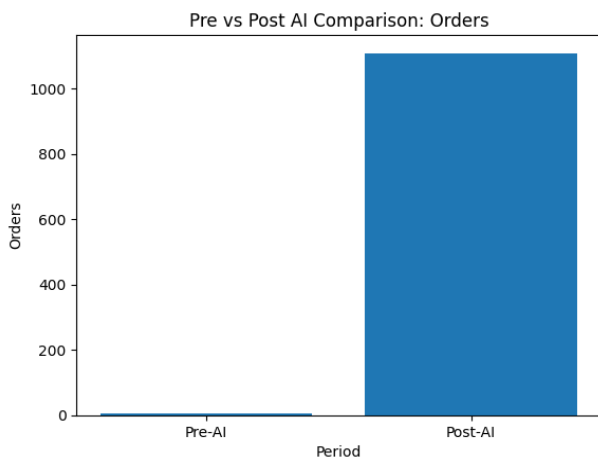
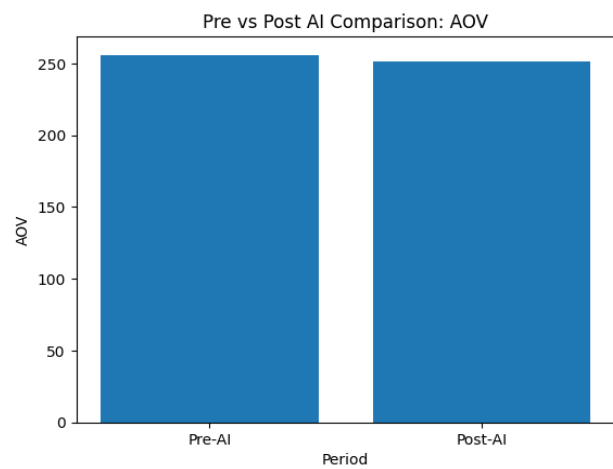
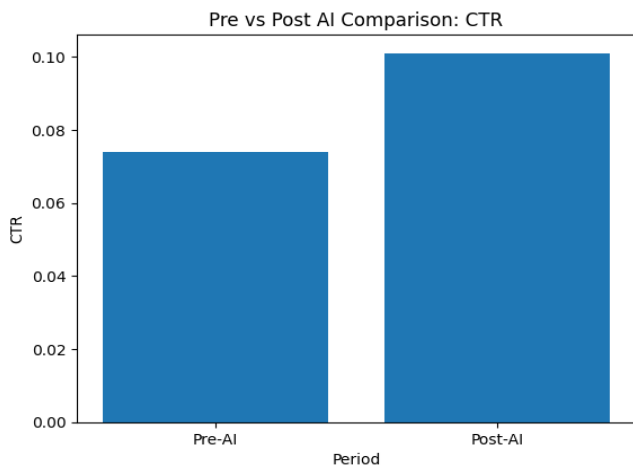
**Retention - Comparison of 2022 - Pre-AI and 2023 - Post AI**

Year	Month	Channel	Impressions	Clicks	Orders	Online Sales	CTR	AOV	AB Group
2022	Jan	WhatsApp	4225	278	1	260	0.065799	260	Control
2022	Feb	WhatsApp	5471	236	0	0	0.043137	260	Control
2022	Mar	WhatsApp	3345	209	0	0	0.062481	260	Control
2022	Apr	WhatsApp	6249	302	1	250	0.048328	250	Control
2022	May	WhatsApp	3833	255	1	245	0.066528	245	Control
2022	Jun	WhatsApp	4848	442	3	735	0.091172	245	Control
2022	Jul	WhatsApp	4515	313	3	720	0.069324	240	Control
2022	Aug	WhatsApp	10465	611	3	810	0.058385	270	Control
2022	Sep	WhatsApp	15652	1222	6	1560	0.078073	260	Control
2022	Oct	WhatsApp	29689	2601	16	4480	0.087608	280	Control
2022	Nov	WhatsApp	30773	2105	14	3640	0.068404	260	Control
2022	Dec	WhatsApp	18186	1549	9	2340	0.085175	260	Control
2023	Jan	WhatsApp	150500	22635	254	66040	0.150399	260	AI
2023	Feb	WhatsApp	259000	26496	276	66240	0.102301	240	AI
2023	Mar	WhatsApp	128730	16066	146	33580	0.124804	230	AI
2023	Apr	WhatsApp	178290	20325	220	55000	0.114	250	AI
2023	May	WhatsApp	183120	21535	323	79135	0.1176	245	AI
2023	Jun	WhatsApp	170940	22256	405	99225	0.130198	245	AI
2023	Jul	WhatsApp	255710	26722	636	152640	0.104501	240	AI
2023	Aug	WhatsApp	499800	76769	2334	630180	0.153599	270	AI
2023	Sep	WhatsApp	455700	57464	1270	330200	0.126101	260	AI
2023	Oct	WhatsApp	945000	143640	5128	1435840	0.152	280	AI
2023	Nov	WhatsApp	994350	114549	4135	848900	0.1152	205.2963	AI
2023	Dec	WhatsApp	669900	100753	3637	945620	0.1504	260	AI
2022	Jan	Push	4225	272	1	260	0.064379	260	Control
2022	Feb	Push	5471	390	1	240	0.071285	240	Control
2022	Mar	Push	3345	171	1	230	0.051121	230	Control
2022	Apr	Push	6249	495	2	500	0.079213	250	Control
2022	May	Push	3833	273	2	490	0.071224	245	Control
2022	Jun	Push	4848	332	3	735	0.068482	245	Control
2022	Jul	Push	4515	397	3	720	0.087929	240	Control
2022	Aug	Push	10465	819	8	2160	0.078261	270	Control
2022	Sep	Push	15652	1077	9	2340	0.068809	260	Control
2022	Oct	Push	29689	2378	30	8400	0.080097	280	Control
2022	Nov	Push	30773	2800	20	5200	0.090989	260	Control
2022	Dec	Push	18186	1266	11	2860	0.069614	260	Control
2023	Jan	Push	150500	18391	280	72800	0.122199	260	AI
2023	Feb	Push	259000	34810	473	113520	0.134402	240	AI
2023	Mar	Push	128730	19773	235	54050	0.153601	230	AI
2023	Apr	Push	178290	21555	349	87250	0.120899	250	AI
2023	May	Push	183120	29574	621	152145	0.161501	245	AI
2023	Jun	Push	170940	22974	597	146265	0.134398	245	AI
2023	Jul	Push	255710	29151	1090	261600	0.114	240	AI
2023	Aug	Push	499800	61725	2697	728190	0.123499	270	AI
2023	Sep	Push	455700	59970	1937	503620	0.1316	260	AI
2023	Oct	Push	945000	142128	6268	1755040	0.1504	280	AI
2023	Nov	Push	994350	103910	3554	924040	0.1045	260	AI
2023	Dec	Push	669900	77976	2963	770380	0.116399	260	AI
2022	Jan	Retention Email	1207	89	0	0	0.073737		Control
2022	Feb	Retention Email	1658	146	0	0	0.088058		Control
2022	Mar	Retention Email	904	71	0	0	0.07854		Control
2022	Apr	Retention Email	1838	141	0	0	0.076714		Control
2022	May	Retention Email	1063	77	0	0	0.072437		Control
2022	Jun	Retention Email	1469	144	1	245	0.098026	245	Control
2022	Jul	Retention Email	1411	117	1	240	0.08292	240	Control
2022	Aug	Retention Email	2990	245	2	540	0.08194	270	Control
2022	Sep	Retention Email	4472	315	2	520	0.070438	260	Control
2022	Oct	Retention Email	8024	628	6	1680	0.078265	280	Control
2022	Nov	Retention Email	8548	892	6	1560	0.104352	260	Control
2022	Dec	Retention Email	5683	400	3	780	0.070385	260	Control

2023	Jan	Retention Email	3655	337	4	1040	0.092202	260	AI
2023	Feb	Retention Email	6290	218	3	720	0.034658	240	AI
2023	Mar	Retention Email	3126	258	3	690	0.082534	230	AI
2023	Apr	Retention Email	4330	275	4	1000	0.06351	250	AI
2023	May	Retention Email	4447	231	4	980	0.051945	245	AI
2023	Jun	Retention Email	4151	252	7	1715	0.060708	245	AI
2023	Jul	Retention Email	6210	258	9	2160	0.041546	240	AI
2023	Aug	Retention Email	12138	329	14	3780	0.027105	270	AI
2023	Sep	Retention Email	11067	319	9	2340	0.028824	260	AI
2023	Oct	Retention Email	22950	265	12	3360	0.011547	280	AI
2023	Nov	Retention Email	24149	328	12	3120	0.013582	260	AI
2023	Dec	Retention Email	16269	303	13	3380	0.018624	260	AI

**Key-Metrics Comparison - Pre AI 2022 and Post AI 2023**

Metric	Pre Personalization 2022	Post Personalization 2023
Total Impressions	3658809	5931310
Total Clicks	603913	1741004
Average CPC	5.2	1.4
Average CTR	6%	19%
Average CPL	99	14
Average CVR	7%	10%
Total Number of Orders	2588	61185
Average ARPU	241	241
Online Sales	599081	15324195



The hypothesis is tested using Paired Samples Tests. Below are the results.

Paired Samples Test								
	Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
Hypothesis Pair	Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
H1: Conversion Efficiency (CTR)	0.0275	0.0182	0.0052	0.0151	0.0399	3.027	11	0.012
H2: Average Order Value (AOV)	-4.22	18.91	5.46	-16.24	7.8	-0.67	11	0.246
H3: Number of Orders	1104.25	365.44	105.51	871.96	1336.54	10.47	11	0
H4: Online Sales / GMV	285862.36	94521.18	27280.44	225821.77	345902.95	10.47	11	0

**HYPOTHESIS H1 – CONVERSION EFFICIENCY (CTR / CVR)**

The paired samples *t*-test reveals that the obtained *t* value of 3.027 is statistically significant at the 0.05 level with 11 degrees of freedom ( $p = 0.012$ ). This indicates that AI-generated images and AI-driven content have a significant positive effect on conversion efficiency by improving user engagement and reducing decision uncertainty on the platform.

Therefore, the null hypothesis (H1), namely, “*There is no significant effect of AI-generated images and content on conversion efficiency in an online food and beverages delivery platform*”, is rejected.

**HYPOTHESIS H2 – AVERAGE ORDER VALUE (AOV)**

The paired samples *t*-test shows that the obtained *t* value of -0.67 is not statistically significant at the 0.05 level with 11 degrees of freedom ( $p = 0.246$ ). This result suggests that AI-generated images and AI-driven content do not have a statistically significant impact on the average order value of transactions on the platform.

Therefore, the null hypothesis (H2), which states that “*There is no significant effect of AI-driven content on average order value in an online food and beverages delivery platform*”, is accepted.

**HYPOTHESIS H3 – TRANSACTION VOLUME (NUMBER OF ORDERS)**

The paired samples *t*-test indicates that the obtained *t* value of 10.47 is statistically significant at the 0.01 level with 11 degrees of freedom ( $p < 0.001$ ). This finding confirms that AI-generated images and content have a strong and significant effect on increasing the number of orders placed on the platform.

Therefore, the null hypothesis (H3), which states that “*There is no significant effect of AI-generated images and content on the number of orders in an online food and beverages delivery platform*”, is rejected.

**HYPOTHESIS H4 – REVENUE PERFORMANCE (ONLINE SALES / GMV)**

The paired samples *t*-test results show that the obtained *t* value of 10.47 is statistically significant at the 0.01 level with 11 degrees of freedom ( $p < 0.001$ ). This indicates that AI-generated images and AI-driven content have a statistically significant impact on overall revenue performance and online sales generated by the platform.

Therefore, the null hypothesis (H4), namely, “*There is no significant effect of AI-generated images and content on revenue performance in an online food and beverages delivery platform*”, is rejected.

**VI. DISCUSSION**

This study examines how AI-generated images and AI-driven content influence revenue outcomes in a mid-size online food and beverages delivery platform. Rather than treating creative automation as a marketing enhancement, the findings position generative AI as a structural driver of revenue efficiency and scalability within platform-based commerce.

The results indicate that AI-generated content improves platform performance primarily by reducing decision friction in experience-based food purchases. Enhanced visual consistency and contextual descriptions appear to lower information asymmetry, enabling users to make faster and more confident purchase decisions. This mechanism explains the observed increase in transaction volume and overall revenue without a corresponding rise in average order value. Revenue growth, therefore, emerges from higher conversion and frequency effects, not from increased consumer spending per order.

An important insight from the analysis is the separation of volume effects from value effects. While AI-driven content significantly increases the number of completed transactions, it does not materially alter basket size. This distinction is critical for platform strategy, as it demonstrates that generative AI functions as a scale amplifier, accelerating throughput across the platform rather than reshaping pricing or consumption intensity.

From an operational perspective, the study highlights how AI-generated images and content improve operating leverage. Automation of creative production reduces dependency on manual processes, shortens deployment cycles, and enables rapid iteration across menus, promotions, and channels. For mid-size platforms, these efficiencies translate directly into improved capital productivity and the ability to grow revenue without proportional increases in marketing or creative costs.

The channel-level patterns observed in the data further suggest that the impact of AI-generated content is context-dependent. Stronger effects are observed in high-intent acquisition and direct communication channels, where content clarity and immediacy play a decisive role in purchase completion. This implies that AI-generated content delivers the greatest financial value when deployed closer to the point of decision, rather than uniformly across all touchpoints.

At the same time, the findings point to potential risks associated with excessive automation. In food-related consumption, perceived authenticity and expectation alignment are central to trust and repeat usage. Over-standardization or synthetic representation may weaken these signals, potentially undermining long-term customer value. This highlights the need for governance mechanisms, human oversight, and brand-aligned constraints to ensure that efficiency gains do not come at the cost of credibility.

## **VII. IMPLICATIONS OF THE STUDY**

This study provides meaningful implications for theory, practice, and platform strategy in the context of generative AI adoption.

### **THEORETICAL IMPLICATIONS**

The findings strengthen the understanding of how AI-generated images and AI-driven content influence financial performance in digital platforms. While prior research often focuses on engagement or personalization outcomes, this study connects generative AI directly to measurable business metrics such as conversion rate, transaction volume, and gross merchandise value (GMV).

Importantly, the results show that AI primarily improves revenue by increasing conversion efficiency and order frequency rather than increasing average order value (AOV). This helps clarify that generative AI reduces decision uncertainty and speeds up purchase decisions, instead of changing how much consumers spend per order.

### **MANAGERIAL IMPLICATIONS**

For platform managers, the results suggest that AI-generated creative assets can be used as a scalable growth tool. Improved images and optimized menu descriptions increase conversion rates without proportionally increasing marketing costs. This strengthens return on marketing investment (ROMI) and lowers customer acquisition cost (CAC).

For mid-size platforms with limited creative resources, AI can replace expensive and slow manual content production processes. It reduces dependency on merchant-provided content, shortens campaign rollout time, and improves operating leverage by allowing platforms to scale content without expanding teams.

However, since AOV did not significantly increase, managers should not rely solely on AI-generated content to increase basket size. Complementary strategies such as bundling, pricing optimization, or add-on recommendations may be necessary.

### **STRATEGIC IMPLICATIONS**

The results indicate that AI-generated content has the strongest impact near the point of purchase, such as on menu pages and personalized recommendations. Platforms should therefore prioritize deployment in high-intent touchpoints.

At the same time, over-automation must be carefully managed. In experience-based categories like food, authenticity and trust remain critical. Platforms should implement governance mechanisms and human oversight to ensure that AI-generated representations remain accurate and aligned with consumer expectations.

Overall, the study positions generative AI as a practical and financially meaningful tool for improving revenue efficiency and scalable growth in online F&B platforms.

## VIII. LIMITATIONS AND FUTURE SCOPE

### LIMITATIONS

First, the analysis is based on a single mid-size online food and beverages (F&B) delivery platform. While this allows for focused and controlled evaluation, the findings may not be directly generalizable to large-scale platforms or other digital commerce sectors with different customer dynamics.

Second, the study employs a pre-post experimental design over a defined time period. Although marketing intensity was controlled, external factors such as seasonality, macroeconomic conditions, competitive activity, or shifts in consumer behavior may have influenced transaction patterns.

Third, the research primarily evaluates short- to medium-term financial outcomes such as conversion rate, transaction volume, and gross merchandise value (GMV). Long-term effects on customer lifetime value (LTV), brand perception, and trust were not deeply examined.

Finally, the study focuses on quantitative performance metrics and does not incorporate qualitative consumer feedback. Therefore, perceptions regarding authenticity, trust, and satisfaction with AI-generated content remain underexplored.

### FUTURE SCOPE

Future research can extend this study in several directions. First, multi-platform or cross-industry studies would improve generalizability and allow comparison between small, mid-size, and large digital platforms.

Second, longitudinal research over a longer time horizon could evaluate whether revenue gains from AI-generated content are sustained and how automation influences repeat purchase behavior and long-term customer value.

Third, integrating qualitative methods such as consumer surveys or experimental perception studies could provide deeper insights into trust, authenticity, and resistance toward AI-generated food imagery and content.

Fourth, future studies may examine the interaction between AI-generated content and advanced personalization techniques, such as dynamic bundling, pricing optimization, or recommendation algorithms, to assess combined effects on average order value (AOV).

Finally, research could explore governance frameworks for responsible AI deployment, particularly in experience-based categories where expectation alignment is critical.

In summary, while this study establishes a strong empirical link between AI-generated creative assets and revenue efficiency, further research is necessary to evaluate long-term sustainability, cross-context applicability, and strategic optimization.

## IX. CONCLUSION

- This study empirically evaluated the financial impact of AI-generated images and AI-driven content on a mid-size online food and beverages (F&B) delivery platform.
- The results demonstrate that generative AI significantly improves conversion efficiency and transaction volume.
- Revenue growth (GMV) increased substantially following AI implementation, confirming its measurable financial value.
- AI-generated creative assets reduce decision uncertainty in experience-based purchases, accelerating the path from discovery to transaction.
- The impact is primarily efficiency-driven: AI enhances throughput and order frequency rather than increasing average order value (AOV).
- Revenue gains stem from improved conversion and scale, not higher per-order spending.
- Creative automation strengthens operating leverage by reducing dependency on manual content production and enabling scalable deployment.
- Marketing efficiency improves through lower acquisition costs and stronger return on marketing investment (ROMI).
- However, sustainable impact requires balanced deployment. Over-automation may risk authenticity and long-term consumer trust in experience-based categories.

- Strategically implemented and properly governed, generative AI serves as a revenue accelerator and scalability enabler for mid-size digital platforms.

**DEFINITIONS AND KEY CONSTRUCTS**

Concept	Definition
Artificial Intelligence (AI)	Computational systems capable of performing tasks involving learning, perception, and decision-making.
Generative AI	AI models that create new content such as images and text based on learned data patterns.
AI-Generated Images	Algorithmically generated or enhanced visual representations of food items used in digital menus and promotions.
AI-Driven Content	Dynamically generated textual elements including menu descriptions, promotional copy, and personalized recommendations.
Experience Goods	Products whose quality can only be evaluated after consumption.
Information Asymmetry	A condition where consumers have less information about product quality than sellers prior to purchase.
Gross Merchandise Value (GMV)	Total value of transactions processed on the platform over a defined period.
Conversion Rate	Proportion of users who complete a purchase after exposure to platform content.
Average Order Value (AOV)	Average monetary value per transaction.
Customer Acquisition Cost (CAC)	Cost incurred to acquire a new customer.
Customer Lifetime Value (LTV)	Expected total revenue generated by a customer over the relationship duration.
Return on Marketing Investment (ROMI)	Revenue generated per unit of marketing expenditure.
Operating Leverage	Degree to which fixed costs affect profitability as revenue scales.

**X. REFERENCES**

Arora, N., Dreze, X., Ghose, A., Hess, J. D., Iyengar, R., Jing, B., Joshi, Y., Kumar, V., Lurie, N., Neslin, S., Sahni, N., Su, M., Syam, N., & Zhang, Z. J. (2020). Putting one-to-one marketing to work: Personalization, customization, and choice. *Marketing Letters*, 31(2–3), 181–196. <https://doi.org/10.1007/s11002-020-09525-z>

Brynjolfsson, E., Hitt, L. M., & Kim, H. H. (2011). Strength in numbers: How does data-driven decision making affect firm performance? *Management Science*, 57(2), 321–340.

Chen, H., Chiang, R. H. L., & Storey, V. C. (2012). Business intelligence and analytics: From big data to big impact. *MIS Quarterly*, 36(4), 1165–1188.

Chaffey, D., & Patron, M. (2012). From web analytics to digital marketing optimization: Increasing the commercial impact of digital analytics. *Journal of Direct, Data and Digital Marketing Practice*, 14(1), 30–45. <https://doi.org/10.1057/ddmp.2012.20>

Davenport, T. H., Guha, A., Grewal, D., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science*, 48(1), 24–42.

Degeratu, A. M., Rangaswamy, A., & Wu, J. (2000). Consumer choice behavior in online and traditional supermarkets. *Marketing Science*, 19(1), 55–84.

Erevelles, S., Fukawa, N., & Swayne, L. (2016). Big data consumer analytics and the transformation of marketing. *Journal of Business Research*, 69(2), 897–904.

Gentsch, P. (2019). *AI in marketing, sales and service: How marketers without a data science degree can use AI, big data and bots*. Palgrave Macmillan.

Grewal, D., Roggeveen, A. L., & Nordfält, J. (2017). The future of retailing. *Journal of Retailing*, 93(1), 1–6.

Homburg, C., Jozić, D., & Kuehnl, C. (2017). Customer experience management: Toward implementing an evolving marketing concept. *Journal of the Academy of Marketing Science*, 45(3), 377–401. <https://doi.org/10.1007/s11747-015-0460-7>

Huang, M.-H., & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science*, 49(1), 30–50.

Jarek, K., & Mazurek, G. (2019). Marketing and artificial intelligence. *Central European Business Review*, 8(2), 46–55. <https://doi.org/10.18267/j.cebr.213>



- Kaplan, A. M., & Haenlein, M. (2019). Siri, Siri, in my hand: Who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. *Business Horizons*, 62(1), 15–25
- Kannan, P. K., & Li, H. (2017). Digital marketing: A framework, review and research agenda. *International Journal of Research in Marketing*, 34(1), 22–45.
- Li, H., Kannan, P. K., Viswanathan, S., & Pani, A. (2016). Attribution modeling in online advertising: An empirical investigation. *Journal of Marketing Research*, 53(3), 1–20. <https://doi.org/10.1509/jmr.15.0063>
- Liu, X., Li, H., & Hu, F. (2019). Website attributes in building online trust: A meta-analysis. *International Journal of Information Management*, 45, 66–76. <https://doi.org/10.1016/j.ijinfomgt.2018.10.001>
- Longoni, C., Bonezzi, A., & Morewedge, C. K. (2019). Resistance to medical artificial intelligence. *Journal of Consumer Research*, 46(4), 629–650. <https://doi.org/10.1093/jcr/ucz013>
- McAfee, A., Brynjolfsson, E., Davenport, T. H., Patil, D., & Barton, D. (2012). Big data: The management revolution. *Harvard Business Review*, 90(10), 60–68.
- Pavlou, P. A., Liang, H., & Xue, Y. (2007). Understanding and mitigating uncertainty in online exchange relationships. *MIS Quarterly*, 31(1), 105–136.
- Rust, R. T., & Huang, M.-H. (2014). The service revolution and the transformation of marketing science. *Marketing Science*, 33(2), 206–221. <https://doi.org/10.1287/mksc.2013.0836>
- Shankar, V. (2018). How artificial intelligence is reshaping retailing. *Journal of Retailing*, 94(4), vi–xi. <https://doi.org/10.1016/j.jretai.2018.10.001>
- Wedel, M., & Kannan, P. K. (2016). Marketing analytics for data-rich environments. *Journal of Marketing*, 80(6), 97–121. <https://doi.org/10.1509/jm.15.0413>