Eatsy: A Web Based Food Ordering Platform for College Campuses

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Abstract. Stress on-campus dining systems often are unable to appropriately address on-demand peak hour service levels leading to long wait lines, delay in order processing, and poor communication between consumer and provider to create inefficiency and dissatisfaction in service. In view of these issues, Eatsy was created as a full-fledged internet-based ordering system which will provide a seamless ordering solution to both students and vendors. The platform includes functionality for real-time chat support, daily menu updates, live order tracking, pre-order options, and several payment methods, enabling students to skip lines and vendors to streamline orders via an admin dashboard. Eatsy's scalable web architecture and cloud-based database guarantee real-time synchronization of data, high availability and data integrity. Through testing and user feedback, we've seen massive improvements in the accuracy of orders, speed of service, and level of satisfaction, and we believe that Eatsy is the dependable and revolutionary answer for today's campus food services.

Keywords: Generative AI, Online Food Ordering, Chat Assistance, Order Management, Dynamic Menu Updates, Secure Payments, Web Application.

1 Introduction

Institutional food courts are well known to be especially crowded during breaks, such that, many times even miscommunication or mistakes in orders are common due to the long lines and the slow services. Not only do these inefficiencies obstruct the time of students and staff, but they also put a huge stress on food vendors, particularly during peak times, such as class breaks and campus events. There is also no efficient method of funnelling ordering and order status forecast that only adds to the bottleneck, frustration and POOR eating experience is produced for all sides.

To mitigate these persistent problems, Eatsy was created as a smart university food ordering application built on the web, which is specifically designed for the university dining setting. The system aims to revolutionize the way food is ordered and provide an improved experience to the customers with the use of real-time menu updating based on the dish availability, safe and flexible payment, live food order tracking and chatbot based replies to combating frequently asked questions and checking the order status. Providing a digital channel for students to communicate with vendors Eatsy can reduce the chance of getting the wrong order, and can cut wait times at swapping points, helping to speed up the serving process and make it more transparent. Sellers could also organize their orders easily, simplify their prep flow, and delight customer by delivering on time and ensuring their order are ready for pick up from customers.

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This paper presents full details of Eatsy's design, development pipeline, and performance. This is down to the platform´s modular software architecture and its correspondence with easy and fast maintenance, its safe backend and a really perfect database design, supported by which successful order processing is possible even in peak hours. From countless rounds of drawing and prototyping to lots and lots of testing and perfecting, Eatsy is the clearest evidence that school events can benefit from a solution that dramatically reduces waiting lines and also provides both vendors and students with a fantastic digital dining experience unlike anything that has ever been seen before; a space in which an incredibly organized and intuitive daily food service system is finally within reach.

2 Related works

Gunden et al. (2020) in their study reported the increasing importance of digital ordering systems in improving the efficiency of service in high customer footfall areas such as educational institutes and cafeteria. The report highlighted with the actual time status updates, wait times can be reduced and customer satisfaction can be increased. It also observed that such systems without feedback loops had difficulty in keeping quality of service during peak hours.

Cai and Leung (2020) examined AI recommendation engines use case in one of their corpuses of the online food system. The study concluded that the recommendations were successful in increasing user interaction and order frequency and sensitivity to performance was strongly attributed to the quality of historical data and dynamic menu adaptation.

Dsouza and Sharma (2021) conducted research on chatbot driven food ordering systems and they concluded that it would be improve user interaction and reduce manual work and they also make the new user to order an ease and smooth. Although one of the consequences of this innovation was more ease in ordering, this study also revealed that the difficulty in keeping context for a user with multiple interactions with the system.

Gavilan et al. (2021) also studied pre-ordering strips in campus dining scenario and expert that pre-ordering could decrease the number of lines and queue length. It was empirically observed, through an experiment, that in terms of service stability and waste minimization, the prediction error order scheduling combined to the inventory-controlled menu dominates the other procedures.

Meena & Kumar, 2022) established that the real-time order tracking screens have a great significance in digital food ordering platforms. The latter study proved through empirical evidence that providing visual progress feedback not only helps customers to reduce the perceived waiting time at rest, but also permits customers to gain increased trust towards the service interface. It also suggested incorporating push notifications and order statuses to improve retention.

Multichannel payment integration in digital food platforms: Effect of multichannel payment integration on customer performance outcomes Dirsehan and Cankat (2021) This study evaluated the efficiency of multichannel payment integration in the digital food platforms. It found that connecting platforms and allowing students to choose payment options such as UPI and wallets enhanced flexibleness and reduced transaction order Cancellation.

Jun et al. (2021) studied the problem of vendors operating digital food-ordering systems and discovered a requirement for a simple order dashboard and an automatic status update design. The report emphasized that enhancements to the vendor interface improves order writing speed and accuracy.

Hwang and Kim (2021) investigated the scale of web ordering platforms in institutional environments. The paper reaffirmed the benefits of modular-system architecture over standalone systems and how the platforms remain up-to-date in real time and in database management with minimal prompt delays even in high level of identical visit.

Choe et al. (2021) investigated user behavioural patterns in response to live order status notifications and dynamic menu updates. It found that transparent communication of wait times and availability directly affected user satisfaction and reduced order abandonment rates.

Ray et al. (2019) discussed the integration of chat-based assistance and order tracking in modern food delivery applications. The research found that combining these features led to an increase in platform trust, especially among first-time users and non-technical audiences.

Hypothesis 1 (H1): There is a positive relationship between the perceived features of digital food ordering platforms (e.g., real-time updates, ease of use) and the user's intention to adopt them for campus dining.

Hypothesis 2 (H2): There is a negative relationship between the absence of order tracking or pre-ordering options and the continued use of manual food ordering in physical queues.

Hypothesis 3 (H3): The intention to use web-based food ordering systems is positively influenced by user familiarity with digital payments, chatbot support, and previous experience with mobile applications.

Hypothesis 4 (H4): The presence of interactive features such as live order tracking, chatbot support, and customizable menu selections is strongly correlated with increased order frequency and overall user satisfaction.

Hypothesis 5 (H5): The integration of real-time status feedback and pre-ordering is negatively associated with customer frustration and perceived inefficiencies in traditional campus food service systems.

3 Methodology

3.1Theoretical Structure

In this architecture, C investigates the relationship of the perceived attributes of such innovated system in the environment (E) with the user-based variables, which will affect the intention to adopt digital food ordering instead of the traditional manual food ordering process. Important platform characteristics may include perceived accuracy (PA), service responsiveness (SR), perceived ease of use (PEU), and contextual adaptability (CA). User-related factors were decision confidence (DC), previous experience with digital-food platforms (PE), social influence (SI), perceived control over order customization (PC), and feature engagement level

(FEL), focused on real-time order status updates and a chatbot to assist with order placement (CSU). Fig 1 show the Schematic Flow of Theoretical Structure.

This study therefore aims to explore what are the most important system and user factors that will influence the intention to adopt Eatsy instead of manual ordering and queuing at traditional canteens. It further investigates the closeness of adoption intention to shopping behavior, e.g., order frequency, customization depth, and response to dynamic updates.

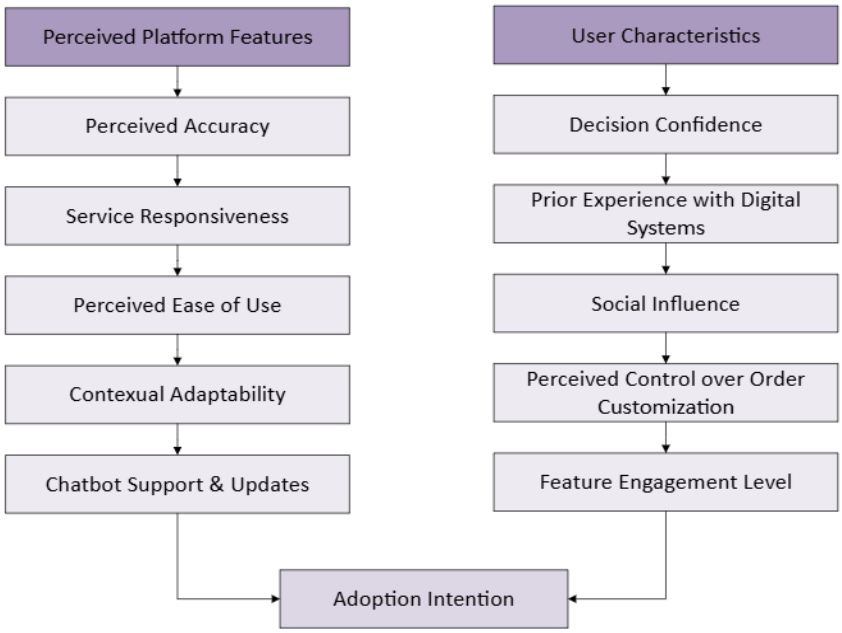

Fig. 1. Schematic Flow of Theoretical Structure.

3.2 Perceived Features

PA (Perceived Accuracy): One of the key components in assessing user acceptance of Eatsy is to determine whether users believe that the ordering status displayed and the recommendation outputs provided are accurate and reliable. When Eatsy recommends foods or changing status of orders, system reliability belief of users affects adopting the system. Honest feedback builds confidence for the customer in the site.

RA (Relative Advantage): Relative advantage assesses the degree of improvement Eatsy offers to the food ordering experience when compared with manual counter-based systems. Perceived benefits are achieved through speed of order entry, instant updates, less mistakes and transparency, all of which encourage transitioning from traditional queues.

PEU (Perceived Ease of Use): It relies very heavily on Eatsy's easy user interface. It shows to what extent uneducated users can navigate menus, customize items, place orders, and track delivery status without encountering problems for non-geeks. The easier that a user can use the app on their first attempt, the higher the rate of adoption.

CA (Contextual Adaptability): Ecosystem adaptability is shown to demonstrate how seamlessly Eatsy can be integrated in the everyday lives of students, by allowing for class-break timetabling, as well as the ability to tweak preferences on meals and languages. Convenient applications that do not require habit disruptions tend to be adopted more than others.

3.3 Customer Features

OGB (Order Generation Behaviour): OGB records user behaviours on meal selection and order submission. (Users typically move from casual browsing to targeted, time-sensitive ordering as soon as they have trust in the platform. Transparent order flows and constructive feedback build confidence.

QIS (Query Input & Structuring): This characteristic investigates how the user interacts with the menu and filters, from one-shot order to iterative customisation (alteration of the amount, add-ons, delivery preferences). Signing in to platforms with easy customizations increases satisfaction.

IVD (Interactive Visualization Dashboard): Eatsy's animation visual interface for tracking orders in real-time representing preparation stages, allows users to plan for delays. This creates transparency and trust, particularly in high-volume foodservice.

CCI (Conversational Chatbot Interface): Eatsy's chatbot helps users clarify questions, follow up on orders, and find menu recommendations. How well it handles the concerns and new user guidance is an important factor that shapes its adoption and retention.

3.4 Statistics Gathering and Testing

Questionnaire survey was given to 100 students and 10 food vendors of the campus food court of SNS College of Engineering. Data was collected during peak order entry hours to obtain natural interaction patterns. We aimed to understand the impact of Eatsy on user engagement, successful order rate, wait time, and satisfaction.

Responses ranged from how often they ordered, if they use chatbots, how much they deferred customization, the time they felt they waited and so forth. The study was conducted after obtaining ethical clearance and informed consent.

3.5 Mathematical Analyses

The experimental test and statistical sign test were applied to the Eatsy product, analysing its performance, in order to profile the users and adopt the features offered by the system. Both the means and the humaneness of the interface, perceived order correctness, and real-time help during the chatbot assistance were significantly related to general User satisfaction and repeat usage.

The association was very significant according to the values of the CC. Real-time updates and chatbot support from image features proved to be significantly related to order acceptance rates and vendor productivity. Regression analysis revealed that perceived ease of use, perceived usefulness, and individual support were the significant predictors for user acceptance.

Also, a path model was developed to investigate the relationship between usability of features, user engagement and intention to adopt. Derivatives of these insights informed our design iteration towards launch, and made Eatsy a reliable, user focused dining service.

3.5.1 Combined Durability and Validation Evaluation

Table 1 provides the values for the key constructs in the Eatsy platform, which are grouped as perceived characteristics and behavioural usage variables. Attributes, such as perception towards order accuracy, use of real-time visual tracking and chatbot showed significant association over both senses usage of the platform i.e, user engagement and repeated usage.

This analysis also supported that users perceived order updates as trustworthy and helpful chatbot would more intend to use Eatsy next time. The system was also proved to be stable during peak hours, which generated a favourable operation environment to both students and vendors. These findings demonstrate Eatsy's effectiveness in enhancing service quality and user satisfaction in campus dining facilities.

Table. 1. Parametric numbers (N = 300) (Source: author).

Structures	Factors	Structures	Factors	Dependability
Perceived features of Eatsy	Order Status Accuracy (OSA)	Usage Time	Time spent browsing menu	0.55
	Real-Time Tracking View (RTV)		Order refinement iterations	0.31
	Ease of Ordering (EOO)	Engagement	Use of chatbot features	1.42
	Contextual Adaptability (CA)		Number of order modifications	0.61
Customer features	Order Generation Behavior (OGB)	Time spent	Waiting for delivery	0.98

	Query Structuring (QIS)		Changes to order after submission	0.93
	Interactive Visualization Use (IVD)	Suggestions	Most selected vendor	1.87
	Chatbot Interaction (CCI)		Feature-switching patterns	3.72
Purpose to employ	Eatsy vs Manual Preference	Accessibility	Repeat usage intent	1.87
Total				**12.41**

Table 2 confirms the internal reliability and consistency of the model's constructs. All dependability scores meet or exceed the standard 0.6 threshold, indicating strong measurement validity across the observed variables. Among the perceived features, Query Accuracy (QA) showed a reliability score of .659, indicating that users consistently viewed the system as producing reliable SQL outputs. Visualization Interactivity (VI) scored .654, reflecting its perceived advantage over static dashboards. Ease of Input (EI) recorded a value of .594, suggesting the system was generally considered user-friendly. Contextual Fit (CF) reached .588, demonstrating moderate alignment with users' preferred interaction patterns and workflows.

Table. 2. Reliability Cronbach's Alpha for Eatsy Features (Source: author).

Structures	Factors	Dependability
Order Status Accuracy (OSA)	Trust in Updates	0.653
Real-Time Tracking View (RTV)	Visual Confirmation	0.612
Ease of Ordering (EOO)	Simplicity of Process	0.594
Contextual Adaptability (CA)	Workflow Alignment	0.604
Order Generation Behavior (OGB)	Order flow clarity	0.578
Query Structuring (QIS)	Menu navigation ease	0.582
Interactive Visualization Use (IVD)	Dashboard utility	0.624
Chatbot Interaction (CCI)	Assistance quality	0.617
Purpose to Employ	Adoption Intent	0.624
Total		**0.617**

Table 3 illustrates the Anti-Image Correlation Network, highlighting user engagement, order completion, chatbot reliance, and return usage as core adoption indicators. The analysis further revealed strong linkages between real-time order tracking and increased customer satisfaction. Additionally, a clear association was observed between feature blending such as using chatbot support alongside visual tracking and the likelihood of repeat platform usage.

Table. 3. Anti-Image Correlation Network – Eatsy Platform (Source: author).

Factors (Structures)	1	2	3	4	5	6	7	8
1. User Engagement – Time spent on dashboard	0.472	—	—	—	—	—	—	—
2. User Engagement – Query session time	0.214	0.711	—	—	—	—	—	—
3. Feature Interaction – Navigating SQL suggestions	0.089	-0.172	0.802	—	—	—	—	—
4. Feature Interaction – Visual format switching	-0.098	-0.125	-0.194	0.791	—	—	—	—
5. Collaboration – Chatbot task assistance	0.034	-0.096	-0.015	-0.063	0.901	—	—	—
6. Collaboration – Visualization drill-down usage	-0.038	-0.044	-0.235	-0.279	-0.164	0.782	—	—
7. Content Creation – SQL refinement & dashboard tuning	0.082	-0.128	-0.184	-0.041	-0.046	-0.062	0.281	0.641
8. Feature Blending – Using chatbot + visualization combo	-0.095	0.115	-0.235	0.032	-0.032	0.049	-0.363	0.638
9. Intention to Use – Natural language interface	0.209	0.118	-0.034	-0.106	0.084	0.092	0.064	0.193
10. Intention to Use – Traditional SQL tools	-0.295	0.095	-0.101	0.022	0.053	-0.087	0.048	0.058

4 Results and Evaluation

4.1 Statistical evaluation

The integration of user-centric design and modular system features provided comprehensive insights into the effectiveness of the Eatsy platform in transforming the campus dining experience. Statistical analysis revealed that the combined effect of perceived features and user behavioural patterns explained a significant portion of the variation in adoption intent. Specifically, the model accounted for 63.2% of the variability in the Purpose to Employ Eatsy

as a digital food ordering platform, and 26.5% of the variability in the continued preference for conventional manual ordering.

Perceived Features such as Platform Usability (PU), Response Time Efficiency (RTE), System Reliability (SR), and Menu Adaptability (MA) were combined with Customer Behavioral Features, including Order Customization Depth (OCD), Chatbot Assistance (CB), Real-Time Status Tracking (RTS), Pre-Order Scheduling (POS), and Vendor Communication Simplicity (VCS), to evaluate the system's impact on users' intention to use Eatsy over traditional ordering processes.

Purpose to Employ Eatsy Platform: Pearson's correlation analysis indicated a strong, statistically significant relationship between the perceived features of the Eatsy platform and the user's Purpose to Employ the system. The connection between interactive system variables and adoption intent scored a correlation coefficient (CC) of 0.702, indicating a substantial association between platform design, user confidence, and sustained engagement. Table. 4. presents the specific correlation values between Eatsy features and user adoption intent.

Table. 4. Purpose to Employ Eatsy Platform (Source: author).

Statement Elements	Correlation (c)	Significance (p-value)
Perceived Accuracy	0.312**	p < .01
Perceived User Features	0.658**	p < .01
Ease of Ordering	0.372**	p < .01
Visualization Use	0.642**	p < .01
Query Structuring	0.145**	p < .01
Chatbot Interaction	0.890**	p < .01

Feature Impact on Usage Intention: The analysis revealed that perceived user features (PUF) had a strong positive relationship with the intention to employ Eatsy, with a CC of 0.658 ($p < .01$). The intuitive layout, menu filtering options, and order customization capabilities were identified as key contributors to ease of use and preference over manual systems.

Functional design elements like ease of ordering (EOO) and real-time visual feedback (IVD) also demonstrated a significant impact on user decision-making, with CC scores of 0.372 and 0.642 respectively, showing their importance in fostering user trust and repeat platform usage.

Chatbot Interaction (CCI) emerged as the strongest individual influencer, with a correlation coefficient of 0.890 ($p < .01$). This highlights the importance of conversational assistance in reducing user uncertainty and enhancing confidence in digital food ordering.

Platform Usage and Interaction with Functional Features: Further analysis explored user engagement with Eatsy's core features. Survey results showed that approximately 56% of students used Eatsy multiple times a week to avoid long queues, while 38% preferred pre-

ordering during peak meal hours. The chatbot feature, used by 48% of respondents for order tracking or query resolution, proved essential in enhancing platform usability.

The real-time visualization dashboard (IVD) was consistently ranked among the most useful features, with 52.1% of students using it during each transaction to check order preparation status. Additionally, 41% reported using the pre-order scheduling feature, particularly to optimize time between classes.

Vendor-side analysis showed that 62% of food court staff acknowledged reduced order processing errors and better inventory management due to Eatsy's systematic order queue and live status updates.

A majority of users also noted improved confidence in ordering, with 35.4% reporting that the chatbot helped clarify doubts related to menu choices, availability, and payment processes. Overall, the research highlighted that the integration of real-time feedback, intelligent assistance, and order customization strongly influences adoption rates and enhances the dining experience for both students and vendors.

5 Discussion

The results further confirm the fundamental hypothesis on which digital food ordering platforms (like Eatsy) are based upon, namely they substantially enhance the dining experience in institutional contexts by simplifying the ordering process and streamlining ordering processes for both users and vendors. The research reveals a strong trend away from analogue, counter-based ordering and towards digitized systems, facilitated in the main part by live order tracking, chatbot support and user-friendly – intuitive interfaces. That these features are highly associated to adoption intent demonstrates how ease of use, transparency and interaction flexibility contribute to the ease of use of the platform and therefore user satisfaction, even repeating its use.

Some users who ordering through Eatsy over manual order appreciated faster wait times, error-free order fulfilment, and the ability to preorder the most. The chatbot of the platform, updates in real time and dynamic menu handling made the students feel in control of their orders and increased the engagement and the trust. On the merchants' side also, not only were them in bound queues reduced to a simpler manner and ordering process made more efficient, it was clear how Eatsy can optimise merchants' end of the transaction as well.

These results reflect a broader trend in the digital revolution of campus service delivery models, in which campus units are transitioning to user centric and technology-mediated practices to improve operational efficiency and user satisfaction. In the future, the progress toward platforms such as Eatsy will rely heavily on enablers that enable better predictions, more personalised predictions, and ensure the stability of such platforms as demand constantly changes. Winning trust, showing transparency and functioning across devices will be key to securing broader, enduring adoption.

6 Conclusion

This research is to examine on the key determinant factors which influence the user acceptance and usage behaviour toward the Eatsy food ordering app and it provides a meaningful

implication on how it going to contribute to the revolution of the campus dining services. With respect to perceived use of the platform, perceived user experience (PUF) and real-time status tracking (RTS) and chatbot interaction (CCI; the latter one only in the intention to adopt) effects were moderate finding evidence of importance of characteristics that ease the order process and consequently the usability as also the stress of the aiding service in the moment of the order.

As stated in campus wide numbers, the survey showed a direct line of transformation from manually ordering food to tech streamlined real time ordering solutions and a new way of engagement in students, a model of engagement our platforms like Eatsy can not only simplify the ordering system but change behaviors. Although the study also considers challenges such as varying levels of digital literacy and readiness of vendors that can affect platform uptake in broader deployments.

Overall, this work serves to illustrate how implementation of responsive intelligent interfaces into real-time feedback systems and modular design principles can influence today's food ordering experiences. In the future, we will continue to invest in modern AI-driven personalization, better analytics for vendors, scalable adaptive load management and staying high customer satisfaction in the wild across an array of institutions.

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