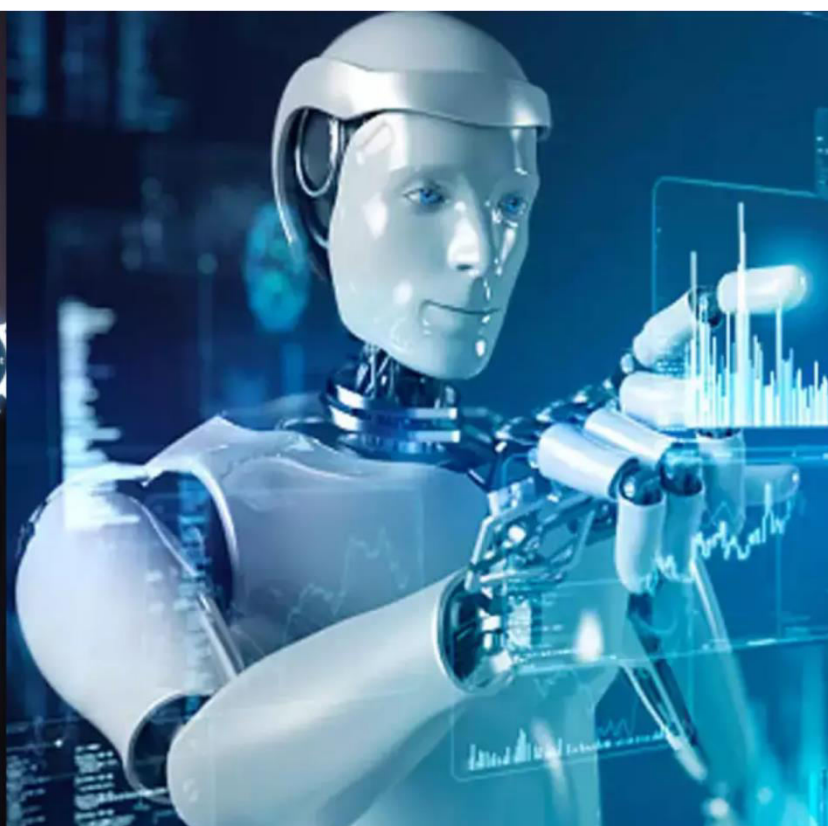




International Journal of Innovative Research in Science Engineering and Technology (IJIRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)



Impact Factor: 8.699

Volume 14, Issue 3, March 2025

Analyzing the E-Commerce user Experience of Store's Website

Mahi Motwal, Diya Vadhel, Prof. Shweta Gupta, Prof. Dr. Nandkishor Sirdeshpande

Department of Computer Science & Engineering, Parul University, Vadodara, Gujarat, India

ABSTRACT: This research paper examines the user experience of the E-commerce website STORE, focusing on key aspects such as navigation, product browsing, purchasing ease, billing, security, delivery process, design aesthetics, loading speed, mobile responsiveness, and accessibility. Through user testing, surveys, and performance analysis, the study identifies strengths and areas for improvement. The findings highlight the importance of a simple, intuitive design that allows anyone to access the site smoothly, along with a secure checkout, fast-loading pages, a seamless billing process, and an efficient delivery system. Based on these insights, the research provides practical recommendations to enhance the user-friendly, and efficient shopping experience that meets industry standards and customer expectations.

KEYWORDS: Online shopping, Billing, Delivery process, Category selection, Product detail, Customer Retention.

I. INTRODUCTION

In the modern digital age, a good user experience (UX) can either make or destroy an e-commerce site. A well designed website not only makes customers satisfied but also creates brand loyalty and increases sales. This research examines E-commerce websites, an online apparel store, in more detail to see how users engage with its site. It delves into the most important factors such as website navigation, product browsing, cart management, checkout simplicity, billing safety, delivery process, payment methods, design appeal, loading speed, mobile usability, and overall usability.

As online retailing becomes increasingly popular, customers want an easy and convenient experience while browsing and purchasing products. A site that is hard to use or slow to load will annoy users, which in most cases will result in cart abandonment and lost business. This study hopes to identify what E-commerce website is doing right and where it can be improved based on insights derived from user testing, surveys, and performance measurement.

The results will reveal what it takes to make a shopping experience enjoyable from straightforward product choice and convenient cart management to safe payments and guaranteed delivery. More significantly, knowing these factors will enable businesses to build online stores that not only draw in customers but also bring them back.

Beyond STORE, this study serves as a valuable resource for any e-commerce business looking to improve its platform. The insights gained can help companies enhance website design, functionality, and accessibility, making online shopping more enjoyable for everyone.

With mobile shopping on the rise and heightened competition, companies need to emphasize quick-loading pages, secure payment, and easy navigation to remain competitive. By implementing the findings of this study, Ecommerce companies can provide a smooth and rewarding shopping experience for their consumers, one that promotes interaction, trust, and sustained success.

II. RELATED WORK

1. How User Experience Shapes E-Commerce Success :

A great user experience (UX) is key to any e-commerce platform's success. It directly impacts customer satisfaction, engagement, and sales conversions. Several studies have explored how different elements—like website speed, navigation, and design—affect online shopping behavior. For example, Reference [1] found that

well-organized product categories and easy-to-use navigation make shopping more enjoyable and lead to higher customer satisfaction. Similarly, Reference [2] highlighted the importance of a fast and secure checkout process, showing that it reduces cart abandonment and helps complete more sales.

2. Website Usability and Keeping Customers Engaged :

A website's usability plays a huge role in whether customers return to shop again. Reference [3] examined how a complicated website structure frustrates users and found that poor UX design makes it less likely for shoppers to come back. Meanwhile, Reference [4] emphasized how modern shoppers expect a seamless experience across different devices. The study found that mobile-friendly designs and responsive layouts are essential for keeping users engaged and making the shopping process easier.

3. The Role of Security and Trust in Online Shopping :

For customers to feel comfortable making purchases, they need to trust the platform. Reference [5] found that transparent billing and secure payment options increase customer confidence, making them more likely to buy. Similarly, Reference [6] discovered that secure transactions and verified customer reviews encourage more people to complete their purchases, as they feel reassured about the website's credibility.

4. What's Missing in Previous Research? :

While many studies have explored different aspects of e-commerce UX, few have taken a deep dive into platform-specific user testing and tailored recommendations. Most research focuses on individual UX elements—like navigation, checkout, or security—without looking at how they all work together to shape customer satisfaction and loyalty. This study aims to fill that gap by analyzing STORE's overall user experience, identifying its strengths and weaknesses through user feedback, and offering clear suggestions to improve the shopping journey.

5. Personalization: The Future of Online Shopping :

Recent studies have shown that customizing the shopping experience can make e-commerce platforms even more effective. Reference [7] found that AI-driven product recommendations—based on a user's past searches and purchases—help increase engagement and sales. Additionally, Reference [8] showed that smart, adaptive interfaces that adjust to user preferences create a smoother shopping experience. Finally, Reference [9] demonstrated how advanced search features and personalized product filters help customers find what they need faster, making them more likely to stay on the site and complete a purchase. These findings suggest that adding more personalized elements to an e-commerce platform can lead to higher sales, better user experiences, and long-term customer loyalty.

III. PROPOSED SYSTEM

System Overview:

The suggested STORE online shopping website aims to produce a seamless and hassle-free shopping experience. By integrating a responsive design, secure payment gateway, and robust delivery network, the system hopes to boost customer satisfaction with easier and more convenient online shopping. APIs Used:

A. Key Features of the Proposed System:

1. Smart Product Search & Filtering: Customers are able to easily locate what they're searching for through a category-based search and filter system, enhancing convenience and efficiency in shopping.
2. Streamlined Cart & Checkout Process: A safe and easy checkout process provides a trouble free buying process, which can lower cart abandonment.
3. Secure & Flexible Payment Options: The system allows multiple payment options using SSL encryption, providing secure and seamless transactions to all.

B. Who Will Benefit from the System?

1. Customers : Online consumers who prefer a swift, secure, and easy shopping experience.
2. Store Administrators : Business owners and managers responsible for **managing inventory, processing orders, and tracking sales.
3. System Administrators – IT professionals who ensure the platform runs smoothly, manage security, and assist customers when needed.

C. System Architecture :

The STORE has a scalable and secure design to provide for effortless interaction between all the components in the system. This implies that the platform is developed to cope with expanding customer needs, remain highly performant, and be secure from threats.

1. System Architecture ;

Register page	Sends registration data	User details (name, phone, email, password)
Login Page	Sends login credentials	phone, password
My Profile	Allows user to manage account	Name, email, phone
Change Password	Updates user password	Old password, new password
Edit Profile	Updates user details	Name, email, preferences
Logout	Ends user session	User ID
Product Browsing	Request product listings	Category, filters
Product Details	Retrieves product info	Product Id, description, price
Cart Management	Updates cart	Product Id, quantity, price
Checkout	Processes order payment	Order Id, order summary
Order Tracking	Retrieves order status	Order Id, status updates
Admin Dashboard	Manages inventory and sales	Product data, order records

The system architecture diagram shows how users, the application server, and the database interact. Store administrators use the Admin Dashboard to manage inventory, orders, and data analysis, while users access modules like Register, Login, Product Browsing, Cart Management, and Checkout. The application server handles all requests, ensures smooth operations by obtaining and storing data in the database efficiently. This organized strategy guarantees that the STORE e-commerce system provides an effortless secure, and simple to operate shopping experience.

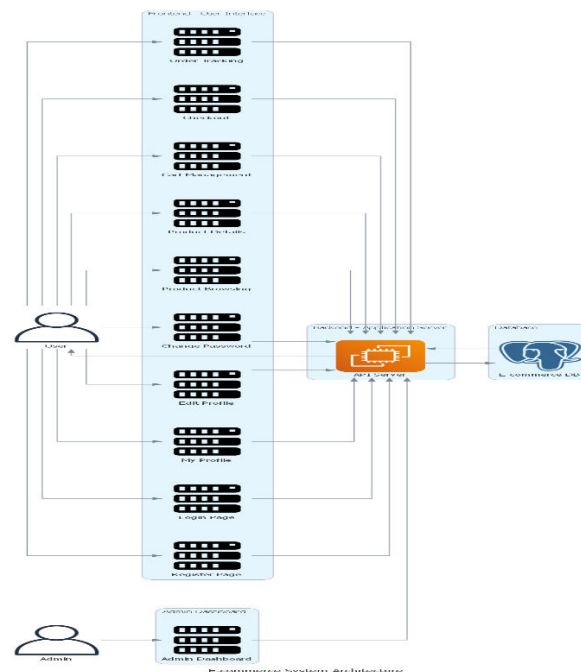


Fig. system architecture

D. Functional Description:

1. User Interface :

a) Registration & Login :

- New members can sign up with ease by filling in their name, email, and password.
- A confirmation email is sent to validate their account before they can log in.
- Social media login features (Google, Facebook) enable a quicker registration process.

b) Browsing & Product Details :

- Shoppers are able to browse products by category or filter their options.
- Each product page features good-quality images, descriptions, prices, sizes available, and stock quantities.
- Reviews, ratings, and FAQs from customers enable informed purchase decisions.

c) Cart & Checkout :

- Customers are able to view, edit, or delete items from their cart prior to ordering.
- Coupons and promo codes can be used for discounts prior to checkout.
- The platform offers various payment options, such as credit/debit cards, UPI, and cash on delivery.
- A confirmation email and dashboard notification is sent upon successful order.

d) Order Tracking & Management :

- Customers are able to track their orders in real time, see invoices, and manage previous purchases.
- Options for cancellations, returns, and refunds are available directly through their account.
- Notifications via email or app keep users updated on their order status.

- e) Reviews & Ratings :
 - Customers can rate and review products based on their shopping experience.
 - Reviews help other buyers while also boosting the visibility of highly-rated products.
- f) Notifications & Alerts :
 - Real-time updates on orders, promotions, inventory status, and special offers are delivered to users.
 - Informed through email, SMS, or application notification, notifications ensure customers receive reminders.
- g) Secure Logout :
 - Secure logout allows for secure accounts protection against unwanted access.
- 2. Admin Dashboard & Store Management :
- a) Secure Admin Access :
 - Administrators sign in with robust authentication practices, such as multi-factor authentication (MFA) for added security.
- b) User Management :
 - Admins can add, edit, or deactivate user accounts as needed.
 - Activity logs monitor login attempts and user activity to ensure platform security.
- c) Product & Category Management :
 - Admins can add, edit, or delete product categories and subcategories for improved organization.
 - Product information such as name, description, stock quantity, price, and images can be edited.
 - Bulk product editing is facilitated by CSV file uploads.
- d) Order & Inventory Management :
 - Admins can approve or deny refund requests, manage orders, and monitor inventory levels.
 - Stock is updated automatically after each sale to avoid overselling.
- e) Sales & Performance Reports :
 - Admin dashboard has visibility into trends of sales, most selling products, and shopping trends of customers.
 - Reporting is possible in CSV or PDF formats to analyze them further.
- f) Customer Support & Issue Resolution :
 - Admins can track customer inquiries, complaints, and support requests for rapid resolution.
 - AI-driven chatbots handle FAQs, while live agents deal with complex problems.
- g) Security & System Monitoring :
 - Admins are notified of suspicious login attempts, security breaches, or system performance issues.
 - Scheduled security audits guarantee compliance with data protection regulations.
- h) Marketing & Promotions :
 - Admins can design and manage discount offers, newsletters, and personalized promotions.
 - Engagement analytics assist in making marketing
 - more effective for customer retention.
- E. Data Management :
 - 1. Customer Accounts & Preferences :
 - Stores user profiles, saved addresses, preferred payment methods, and browsing history.

- AI-powered recommendations propose products from past searches and purchases.
- 2. Product Database :
 - Holds a sophisticated catalog of every item, such as descriptions, inventory quantities, prices, and ratings.
 - Implements dynamically adjustable pricing in real-time with availability and demand.
- 3. Purchase & Order History :
 - Remembers past orders, invoices, refunds requests, and payments securely.
 - Makes it easy for customers to reorder from previous items from their order history.
- 4. Stock & Inventory Management :
 - The system monitors real-time stock levels, updating them automatically as sales are made.
 - Low-stock warnings alert admins when restocking is necessary.
- 5. Reviews & Customer Feedback :
 - Stores user reviews and product ratings to build product trustworthiness.
 - Sentiment analysis based on AI helps detect frequent customer issues.
- 6. Payment & Financial Security :
 - Secure transaction logs record all purchases, refunds, and discounts.
 - Payment information is encrypted to satisfy financial security standards and avoid fraud.
- 7. Customer Support Data :
 - Keeps records of customer inquiries, complaints, and resolutions.
 - AI-based chatbots offer immediate help, while human agents take care of complicated cases.
- 8. System Logs & Security Monitoring :
 - Admins can track all platform activities, including admin actions, security threats, and performance log
 - Helps detect unauthorized access attempts and ensures compliance with privacy regulations.

F. Implementation Details :

The STORE online platform was built for scalability, security, and ease of use. With an Agile development methodology, the system was designed to be flexible, efficient, and always optimized according to customer feedback and changing business requirements.

a) Technology Stack :

In order to provide a **seamless and responsive** buying experience, the following technologies were employed:

- Frontend : HTML, CSS, JavaScript – for a user-friendly and intuitive interface.
- Backend : PHP ,performs authentication, transactions, and order processing.
- Database : MySQL – securely stores orders, products, user data, and inventory.

b) Development Approach :

- Step-by-Step Development : Features such as browsing of products, cart management, and order tracking were developed in stages, enabling early feedback and modifications.
- Flexibility to Changing Needs : Options like multiple payment modes, enhanced filtering capabilities, and customized recommendations were tweaked based on business needs and user activity.
- Frequent Updates & Automated Testing : Frequent updates and automatic testing facilitated early detection of and correction of problems, with a stable platform as a result.

- Thorough Testing : Various testing strategies were employed:
 - Unit testing (for specific functions like checkout and search filtering).
 - Integration testing (to ensure different modules work smoothly together).
 - User acceptance testing (UAT) (to confirm an easy and efficient shopping experience).

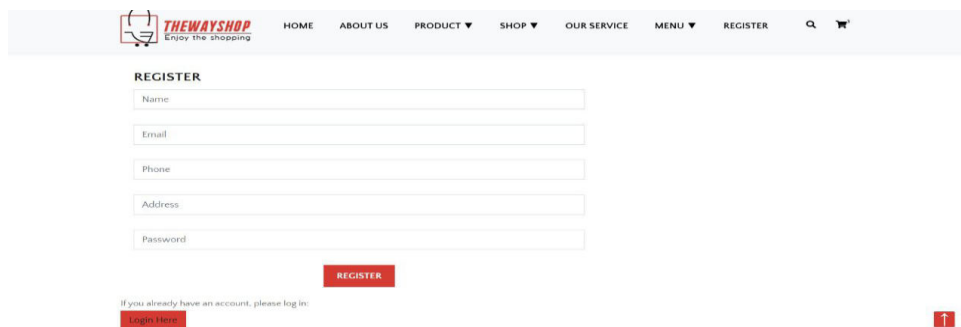
c) Challenges & Solutions :

During development, several challenges arose, each requiring strategic solutions:

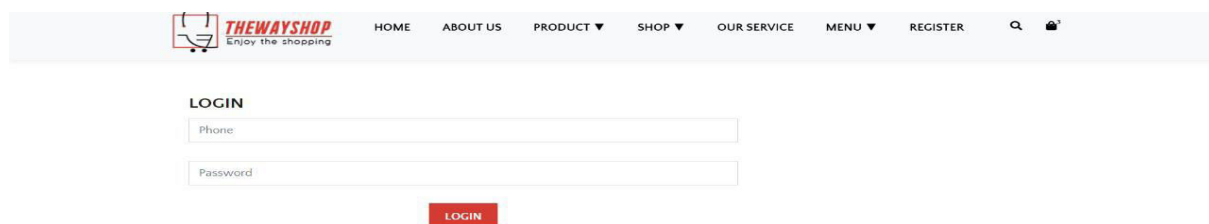
1. Avoiding Data Loss During System Shutdowns :
 - Problem: Working on XAMPP locally was such that system shutdowns unexpectedly could lead to data loss.
 - Solution: Automatic database backups were done, and data was stored in the cloud to avoid loss.
2. Real-Time Inventory Updates :
 - Problem: Initially, inventory updates were not real-time, resulting in overselling when several customers ordered simultaneously.
 - Solution: WebSockets were used to give real-time inventory updates, thus ensuring instant updation of stock levels.
3. MySQL Case Sensitivity Issues :
 - Problem: Case sensitivity of MySQL led to inconsistency when fetching product and user IDs.
 - Solution: Constraints in the database and case-insensitive queries were used to ensure consistency and prevent errors.

IV. OUTPUTS

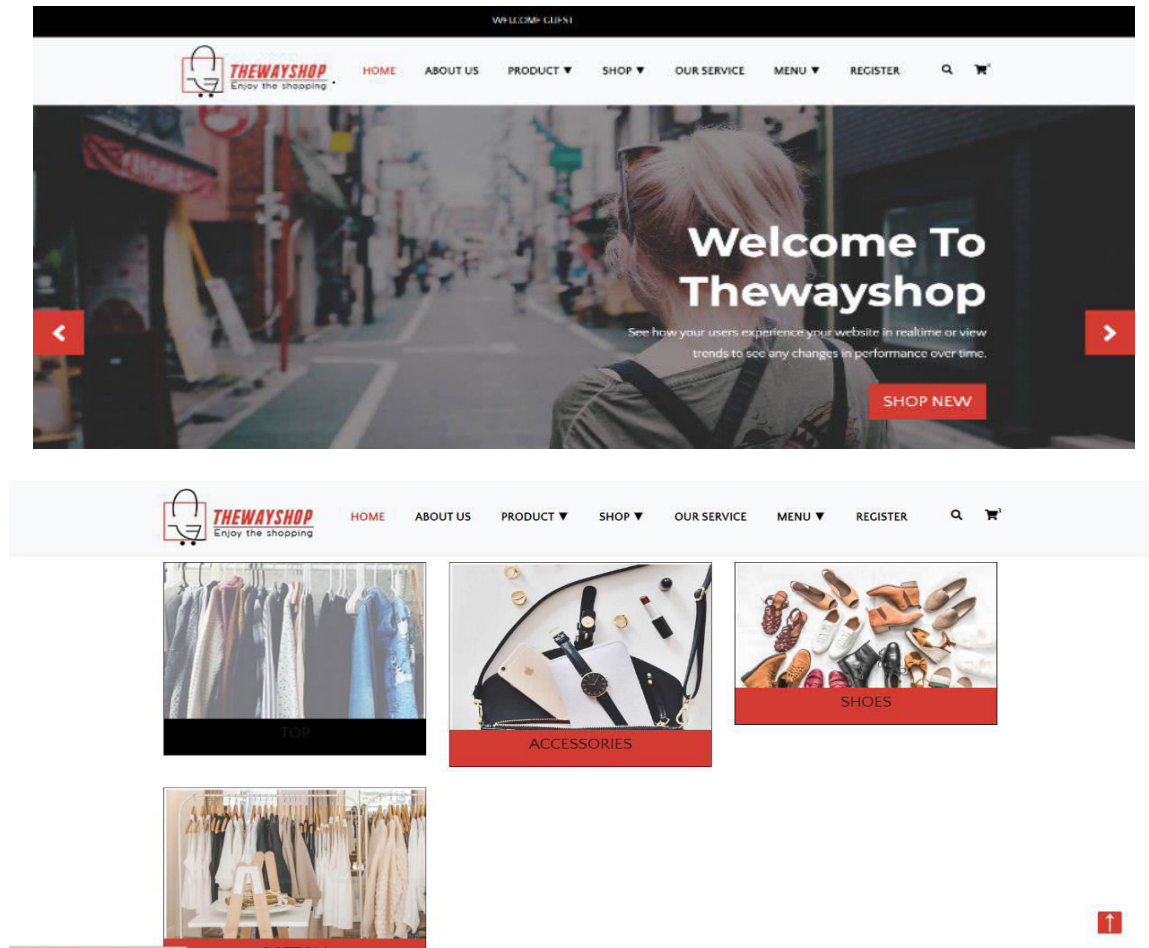
- Registration Page :



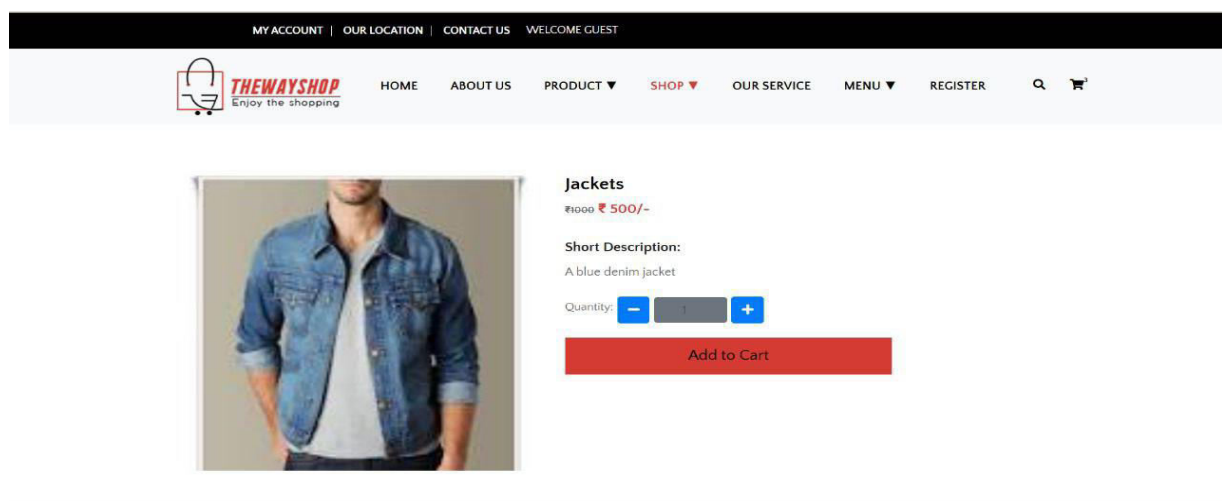
- Login Page :



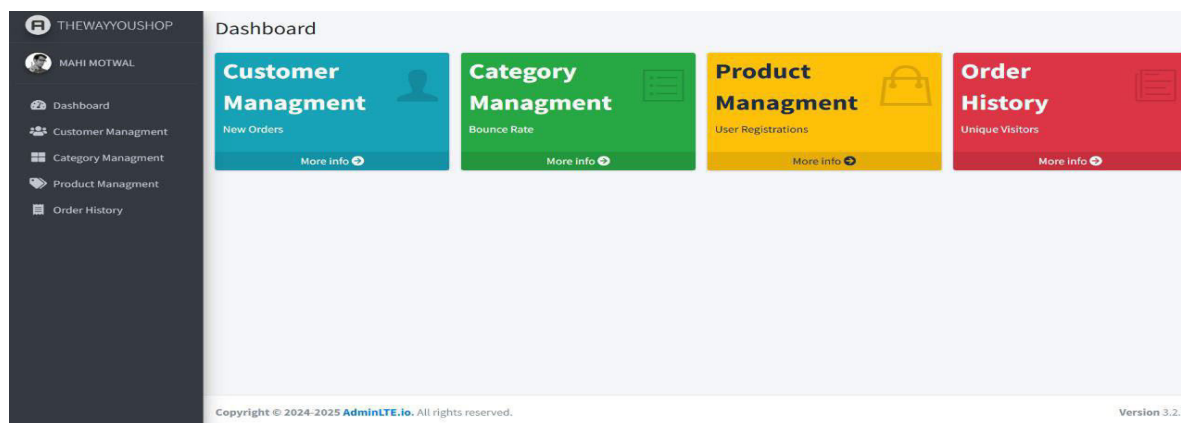
Home Page :



Shop Page :



- Dashboard :



V. CONCLUSION

The STORE online shopping platform was developed with one fundamental objective in mind to provide easy, secure, and enjoyable online shopping. Through uncomplicated navigation, safe transactions, real-time stock status updates, and customer-specific recommendations, the platform augments the customer experience while providing an uninterrupted shopping process.

This study emphasized the key factors affecting customer retention and satisfaction, including seamless product browsing, easy checkout, and robust payment protection. It further identified areas for optimization and suggested real-world solutions to enhance usability, accessibility, and performance.

The development cycle adopted an Agile methodology, which translated to the fact that the platform was constantly updated based on user feedback, ensuring scalability, flexibility, and stability. Features such as automated testing, cloud-based storage of data, and security measures have transformed STORE into a reliable and future-proof solution for both administrators and customers.

Ultimately, STORE isn't just another e-commerce platform it's a smarter, user-friendly, and adaptable solution that's designed to grow alongside the evolving needs of online shopping. With an emphasis on efficiency, security, and innovation, STORE is poised to offer a fast, hassle-free, and enjoyable shopping experience to all.

REFERENCES

1. <https://www.atlantispress.com/article/125966172.pdf>
2. https://www.researchgate.net/publication/357987104_E-Commerce_Research_Models_A_systematic_review_and_Identification_of_the_Determinants_to_Success
3. https://www.irjmets.com/uploadedfiles/paper/issue_3_march_2022/19668/final/fin_irjmets1646919637.pdf
4. <https://www.atlantispress.com/article/125966172.pdf>
5. <https://www.sciencedirect.com/journal/electronic-commerce-research-and-applications#:~:text=e%2Dcommerce%20in%20supply%20chain,the%20life%20span%20of%20knowledge>
6. <https://link.springer.com/journal/10660#:~:text=Overview,to%20a%20specific%20specialized%20area>
7. https://clas.iusb.edu/math-compsci/_prior-thesis/SKhodali_thesis.pdf
8. https://journal.commerce.du.ac.in/confdata/5thAICC_paper_45.pdf
9. <https://www.sciencedirect.com/science/article/pii/S2666412723000156>
10. <https://ijarset.co.in/Paper9405.pdf>
11. <https://www.investopedia.com/terms/e/ecommerce.asp#:~:text=E%2Dcommerce%20is%20the%20buying,of%20businesses%2C%20such%20as%20retailers>
12. <https://journalsearches.com/journal.php?title=electronic%20commerce%20research%20and%20applications>



INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

 9940 572 462  6381 907 438  ijirset@gmail.com



www.ijirset.com

Scan to save the contact details